Appendix C – 2022 Laboratory Analytical Reports

Appendix C-1. 1st Quarter Analytical Reports

Appendix C-2. 2nd Quarter Analytical Reports

Appendix C-3. 3rd Quarter Analytical Reports

Appendix C-4. 4th Quarter Analytical Reports

Appendix C-1. 1st Quarter Analytical Reports

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

April 22, 2022

Lesli Alexander

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX (505) 632-3911

RE: 2022 GW Sampling 1st Qtr OrderNo.: 2203A72

Dear Lesli Alexander:

Hall Environmental Analysis Laboratory received 7 sample(s) on 3/18/2022 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued April 12, 2022.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **2203A72**
Date: **4/22/2022**

CLIENT: Marathon
Project: 2022 GW Sampling 1st Qtr

Analytical Notes Regarding EPA Method 8270:
"S" flagged surrogates denote low surrogate recoveries due to matrix interferences/sample dilution.

Analytical Report
Lab Order: **2203A72**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-18-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/18/2022 8:35:00 AM
Lab ID: 2203A72-001A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	3/22/2022 2:15:30 PM	R86666
Toluene	ND	0.20	1.0		µg/L	1	3/22/2022 2:15:30 PM	R86666
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/22/2022 2:15:30 PM	R86666
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/22/2022 2:15:30 PM	R86666
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/22/2022 2:15:30 PM	R86666
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/22/2022 2:15:30 PM	R86666
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	3/22/2022 2:15:30 PM	R86666
Acetone	ND	2.5	10		µg/L	1	3/22/2022 2:15:30 PM	R86666
Bromomethane	ND	0.85	3.0		µg/L	1	3/22/2022 2:15:30 PM	R86666
2-Butanone	ND	2.0	10		µg/L	1	3/22/2022 2:15:30 PM	R86666
Carbon disulfide	ND	0.59	10		µg/L	1	3/22/2022 2:15:30 PM	R86666
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/22/2022 2:15:30 PM	R86666
Chloroform	ND	0.13	1.0		µg/L	1	3/22/2022 2:15:30 PM	R86666
Chloromethane	0.67	0.41	3.0	J	µg/L	1	3/22/2022 2:15:30 PM	R86666
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/22/2022 2:15:30 PM	R86666
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/22/2022 2:15:30 PM	R86666
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/22/2022 2:15:30 PM	R86666
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/22/2022 2:15:30 PM	R86666
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/22/2022 2:15:30 PM	R86666
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/22/2022 2:15:30 PM	R86666
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/22/2022 2:15:30 PM	R86666
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/22/2022 2:15:30 PM	R86666
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/22/2022 2:15:30 PM	R86666
Styrene	ND	0.14	1.0		µg/L	1	3/22/2022 2:15:30 PM	R86666
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/22/2022 2:15:30 PM	R86666
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/22/2022 2:15:30 PM	R86666
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/22/2022 2:15:30 PM	R86666
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/22/2022 2:15:30 PM	R86666
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/22/2022 2:15:30 PM	R86666
Surr: 1,2-Dichloroethane-d4	91.2	0	70-130		%Rec	1	3/22/2022 2:15:30 PM	R86666
Surr: 4-Bromofluorobenzene	100	0	70-130		%Rec	1	3/22/2022 2:15:30 PM	R86666
Surr: Dibromofluoromethane	96.4	0	70-130		%Rec	1	3/22/2022 2:15:30 PM	R86666
Surr: Toluene-d8	103	0	70-130		%Rec	1	3/22/2022 2:15:30 PM	R86666
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.034	0.028	0.050	J	mg/L	1	3/22/2022 2:15:30 PM	G86666
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	3/22/2022 2:15:30 PM	G86666

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203A72**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Project: 2022 GW Sampling 1st Qtr
Lab ID: 2203A72-001B

Client Sample ID: EB 3-18-22
Collection Date: 3/18/2022 8:35:00 AM
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	3/21/2022 10:38:12 PM	66262

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203A72**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-18-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/18/2022 8:35:00 AM
Lab ID: 2203A72-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.023	0.016	0.064	J	mg/L	1	3/28/2022 2:01:49 PM	66372
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/28/2022 2:01:49 PM	66372
Surr: DNOP	112	0	42.2-138		%Rec	1	3/28/2022 2:01:49 PM	66372
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	1.1	20		µg/L	1	4/2/2022 2:44:11 AM	66282
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	4/2/2022 2:44:11 AM	66282
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	4/2/2022 2:44:11 AM	66282
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	4/2/2022 2:44:11 AM	66282
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	4/2/2022 2:44:11 AM	66282
Diethyl phthalate	ND	3.9	10		µg/L	1	4/2/2022 2:44:11 AM	66282
Dimethyl phthalate	ND	2.0	10		µg/L	1	4/2/2022 2:44:11 AM	66282
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	4/2/2022 2:44:11 AM	66282
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	4/2/2022 2:44:11 AM	66282
2-Methylphenol	ND	0.51	5.0		µg/L	1	4/2/2022 2:44:11 AM	66282
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	4/2/2022 2:44:11 AM	66282
Phenol	ND	0.33	5.0		µg/L	1	4/2/2022 2:44:11 AM	66282
Pyridine	ND	10	10		µg/L	1	4/2/2022 2:44:11 AM	66282
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	4/2/2022 2:44:11 AM	66282
Surr: 2-Fluorophenol	45.1	0	29.4-87.7		%Rec	1	4/2/2022 2:44:11 AM	66282
Surr: Phenol-d5	36.0	0	28.5-64.7		%Rec	1	4/2/2022 2:44:11 AM	66282
Surr: 2,4,6-Tribromophenol	56.1	0	18.6-129		%Rec	1	4/2/2022 2:44:11 AM	66282
Surr: Nitrobenzene-d5	56.8	0	36.9-103		%Rec	1	4/2/2022 2:44:11 AM	66282
Surr: 2-Fluorobiphenyl	55.0	0	38.1-99.9		%Rec	1	4/2/2022 2:44:11 AM	66282
Surr: 4-Terphenyl-d14	83.4	0	48-155		%Rec	1	4/2/2022 2:44:11 AM	66282
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.048	1.0		µg/L	1	3/23/2022 7:01:00 PM	R86694
Naphthalene	ND	0.034	0.10		µg/L	1	3/23/2022 7:01:00 PM	R86694
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/23/2022 7:01:00 PM	R86694
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/23/2022 7:01:00 PM	R86694
Acenaphthene	ND	0.031	0.10		µg/L	1	3/23/2022 7:01:00 PM	R86694
Fluorene	ND	0.031	0.10		µg/L	1	3/23/2022 7:01:00 PM	R86694
Phenanthrene	ND	0.057	0.10		µg/L	1	3/23/2022 7:01:00 PM	R86694
Anthracene	ND	0.034	0.10		µg/L	1	3/23/2022 7:01:00 PM	R86694
Fluoranthene	ND	0.10	0.20		µg/L	1	3/23/2022 7:01:00 PM	R86694
Pyrene	ND	0.16	0.20		µg/L	1	3/23/2022 7:01:00 PM	R86694
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/23/2022 7:01:00 PM	R86694
Chrysene	ND	0.024	0.10		µg/L	1	3/23/2022 7:01:00 PM	R86694
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/23/2022 7:01:00 PM	R86694
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/23/2022 7:01:00 PM	R86694

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203A72**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-18-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/18/2022 8:35:00 AM
Lab ID: 2203A72-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	60.7	0	31.6-100		%Rec	1	3/23/2022 7:01:00 PM	R86694
Surr: 2-Fluorobiphenyl	58.6	0	26.7-90.1		%Rec	1	3/23/2022 7:01:00 PM	R86694
Surr: 4-Terphenyl-d14	101	0	72.3-147	E	%Rec	1	3/23/2022 7:01:00 PM	R86694

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203A72**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-18-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/18/2022 8:35:00 AM
Lab ID: 2203A72-001D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	ND	0.0016	0.0030		mg/L	1	4/6/2022 1:49:10 PM	66643
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 1:49:10 PM	66643
Cadmium	ND	0.0015	0.0020		mg/L	1	4/6/2022 1:49:10 PM	66643
Chromium	ND	0.0021	0.0060		mg/L	1	4/6/2022 1:49:10 PM	66643
Cobalt	ND	0.0024	0.0060		mg/L	1	4/6/2022 1:49:10 PM	66643
Nickel	ND	0.0033	0.010		mg/L	1	4/6/2022 1:49:10 PM	66643
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 1:49:10 PM	66643
Vanadium	ND	0.0024	0.050		mg/L	1	4/6/2022 1:49:10 PM	66643
Zinc	ND	0.0064	0.010		mg/L	1	4/6/2022 1:49:10 PM	66643
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/23/2022 12:28:04 PM	66341
Arsenic	ND	0.00013	0.0010		mg/L	1	3/23/2022 12:28:04 PM	66341
Lead	ND	0.000061	0.00050		mg/L	1	3/23/2022 12:28:04 PM	66341
Selenium	ND	0.00037	0.0010		mg/L	1	3/23/2022 12:28:04 PM	66341
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/25/2022 2:38:26 PM	66396

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203A72**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-18-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/18/2022 8:35:00 AM
Lab ID: 2203A72-001E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	ND	0.0011	0.0020		mg/L	1	3/21/2022 11:36:10 AM	A86607
Beryllium	ND	0.00088	0.0020		mg/L	1	3/21/2022 11:36:10 AM	A86607
Cadmium	ND	0.00098	0.0020		mg/L	1	3/21/2022 11:36:10 AM	A86607
Chromium	ND	0.0020	0.0060		mg/L	1	3/21/2022 11:36:10 AM	A86607
Cobalt	ND	0.0024	0.0060		mg/L	1	3/21/2022 11:36:10 AM	A86607
Nickel	ND	0.0033	0.010		mg/L	1	3/21/2022 11:36:10 AM	A86607
Silver	ND	0.0013	0.0050		mg/L	1	3/21/2022 11:36:10 AM	A86607
Vanadium	ND	0.0017	0.050		mg/L	1	3/21/2022 11:36:10 AM	A86607
Zinc	0.0068	0.0032	0.010	J	mg/L	1	3/21/2022 11:36:10 AM	A86607
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/21/2022 6:56:05 PM	B86624
Arsenic	ND	0.00012	0.0010		mg/L	1	3/21/2022 6:56:05 PM	B86624
Lead	ND	0.000057	0.00050		mg/L	1	3/21/2022 6:56:05 PM	B86624
Selenium	ND	0.00034	0.0010		mg/L	1	3/21/2022 6:56:05 PM	B86624
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/25/2022 2:40:34 PM	66396

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203A72**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: East LDU
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/18/2022 9:35:00 AM
Lab ID: 2203A72-002A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	150	2.3	10		µg/L	10	3/22/2022 2:43:57 PM	R86666
Toluene	17	2.0	10		µg/L	10	3/22/2022 2:43:57 PM	R86666
Ethylbenzene	44	2.1	10		µg/L	10	3/22/2022 2:43:57 PM	R86666
Methyl tert-butyl ether (MTBE)	ND	3.9	10		µg/L	10	3/22/2022 2:43:57 PM	R86666
1,2,4-Trimethylbenzene	18	1.2	10		µg/L	10	3/22/2022 2:43:57 PM	R86666
1,3,5-Trimethylbenzene	14	1.8	10		µg/L	10	3/22/2022 2:43:57 PM	R86666
1,2-Dichloroethane (EDC)	ND	2.5	10		µg/L	10	3/22/2022 2:43:57 PM	R86666
Acetone	160	25	100		µg/L	10	3/22/2022 2:43:57 PM	R86666
Bromomethane	ND	8.5	30		µg/L	10	3/22/2022 2:43:57 PM	R86666
2-Butanone	27	20	100	J	µg/L	10	3/22/2022 2:43:57 PM	R86666
Carbon disulfide	ND	5.9	100		µg/L	10	3/22/2022 2:43:57 PM	R86666
Chlorobenzene	ND	1.6	10		µg/L	10	3/22/2022 2:43:57 PM	R86666
Chloroform	ND	1.3	10		µg/L	10	3/22/2022 2:43:57 PM	R86666
Chloromethane	7.0	4.1	30	J	µg/L	10	3/22/2022 2:43:57 PM	R86666
cis-1,2-DCE	ND	3.9	10		µg/L	10	3/22/2022 2:43:57 PM	R86666
1,1-Dichloroethane	ND	2.7	10		µg/L	10	3/22/2022 2:43:57 PM	R86666
1,1-Dichloroethene	ND	2.0	10		µg/L	10	3/22/2022 2:43:57 PM	R86666
Isopropylbenzene	8.1	1.8	10	J	µg/L	10	3/22/2022 2:43:57 PM	R86666
4-Isopropyltoluene	3.2	2.0	10	J	µg/L	10	3/22/2022 2:43:57 PM	R86666
Methylene Chloride	ND	5.0	30		µg/L	10	3/22/2022 2:43:57 PM	R86666
n-Butylbenzene	3.0	2.5	30	J	µg/L	10	3/22/2022 2:43:57 PM	R86666
n-Propylbenzene	11	1.8	10		µg/L	10	3/22/2022 2:43:57 PM	R86666
sec-Butylbenzene	3.1	1.4	10	J	µg/L	10	3/22/2022 2:43:57 PM	R86666
Styrene	ND	1.4	10		µg/L	10	3/22/2022 2:43:57 PM	R86666
Tetrachloroethene (PCE)	ND	3.6	10		µg/L	10	3/22/2022 2:43:57 PM	R86666
1,1,1-Trichloroethane	ND	3.0	10		µg/L	10	3/22/2022 2:43:57 PM	R86666
Trichloroethene (TCE)	ND	2.0	10		µg/L	10	3/22/2022 2:43:57 PM	R86666
Vinyl chloride	ND	3.2	10		µg/L	10	3/22/2022 2:43:57 PM	R86666
Xylenes, Total	29	3.7	15		µg/L	10	3/22/2022 2:43:57 PM	R86666
Surr: 1,2-Dichloroethane-d4	89.6	0	70-130		%Rec	10	3/22/2022 2:43:57 PM	R86666
Surr: 4-Bromofluorobenzene	97.5	0	70-130		%Rec	10	3/22/2022 2:43:57 PM	R86666
Surr: Dibromofluoromethane	91.4	0	70-130		%Rec	10	3/22/2022 2:43:57 PM	R86666
Surr: Toluene-d8	100	0	70-130		%Rec	10	3/22/2022 2:43:57 PM	R86666
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	1.3	0.28	0.50		mg/L	10	3/22/2022 2:43:57 PM	G86666
Surr: 4-Bromofluorobenzene	98.1	0	70-130		%Rec	10	3/22/2022 2:43:57 PM	G86666

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203A72**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: East LDU
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/18/2022 9:35:00 AM
Lab ID: 2203A72-002B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	3/21/2022 10:53:13 PM	66262

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203A72**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: East LDU
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/18/2022 9:35:00 AM
Lab ID: 2203A72-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	3.1	0.16	0.64		mg/L	10	3/29/2022 3:53:02 PM	66372
Motor Oil Range Organics (MRO)	ND	0.52	0.80	D	mg/L	10	3/29/2022 3:53:02 PM	66372
Surr: DNOP	0	0	42.2-138	S	%Rec	10	3/29/2022 3:53:02 PM	66372
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	1.1	20		µg/L	1	3/23/2022 10:58:02 PM	66282
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/23/2022 10:58:02 PM	66282
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/23/2022 10:58:02 PM	66282
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/23/2022 10:58:02 PM	66282
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/23/2022 10:58:02 PM	66282
Diethyl phthalate	ND	3.9	10		µg/L	1	3/23/2022 10:58:02 PM	66282
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/23/2022 10:58:02 PM	66282
2,4-Dimethylphenol	5.7	0.97	5.0		µg/L	1	3/23/2022 10:58:02 PM	66282
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/23/2022 10:58:02 PM	66282
2-Methylphenol	7.7	0.51	5.0		µg/L	1	3/23/2022 10:58:02 PM	66282
3+4-Methylphenol	7.1	0.45	5.0		µg/L	1	3/23/2022 10:58:02 PM	66282
Phenol	5.9	0.33	5.0		µg/L	1	3/23/2022 10:58:02 PM	66282
Pyridine	ND	10	10		µg/L	1	3/23/2022 10:58:02 PM	66282
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/23/2022 10:58:02 PM	66282
Surr: 2-Fluorophenol	10.1	0	29.4-87.7	S	%Rec	1	3/23/2022 10:58:02 PM	66282
Surr: Phenol-d5	25.0	0	28.5-64.7	S	%Rec	1	3/23/2022 10:58:02 PM	66282
Surr: 2,4,6-Tribromophenol	15.7	0	18.6-129	S	%Rec	1	3/23/2022 10:58:02 PM	66282
Surr: Nitrobenzene-d5	49.0	0	36.9-103		%Rec	1	3/23/2022 10:58:02 PM	66282
Surr: 2-Fluorobiphenyl	49.1	0	38.1-99.9		%Rec	1	3/23/2022 10:58:02 PM	66282
Surr: 4-Terphenyl-d14	61.5	0	48-155		%Rec	1	3/23/2022 10:58:02 PM	66282
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.48	10	D	µg/L	10	3/23/2022 7:45:00 PM	R86694
Naphthalene	7.2	0.34	1.0	D	µg/L	10	3/23/2022 7:45:00 PM	R86694
1-Methylnaphthalene	5.8	0.24	1.0	D	µg/L	10	3/23/2022 7:45:00 PM	R86694
2-Methylnaphthalene	5.2	0.34	1.0	D	µg/L	10	3/23/2022 7:45:00 PM	R86694
Acenaphthene	16	0.31	1.0	D	µg/L	10	3/23/2022 7:45:00 PM	R86694
Fluorene	ND	0.31	1.0	D	µg/L	10	3/23/2022 7:45:00 PM	R86694
Phenanthrene	2.2	0.57	1.0	D	µg/L	10	3/23/2022 7:45:00 PM	R86694
Anthracene	ND	0.34	1.0	D	µg/L	10	3/23/2022 7:45:00 PM	R86694
Fluoranthene	ND	1.0	2.0	D	µg/L	10	3/23/2022 7:45:00 PM	R86694
Pyrene	ND	1.6	2.0	D	µg/L	10	3/23/2022 7:45:00 PM	R86694
Benz(a)anthracene	ND	0.36	1.0	D	µg/L	10	3/23/2022 7:45:00 PM	R86694
Chrysene	ND	0.24	1.0	D	µg/L	10	3/23/2022 7:45:00 PM	R86694
Benzo(b)fluoranthene	ND	0.57	1.0	D	µg/L	10	3/23/2022 7:45:00 PM	R86694
Indeno(1,2,3-cd)pyrene	ND	0.43	3.0	D	µg/L	10	3/23/2022 7:45:00 PM	R86694

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203A72**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: East LDU
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/18/2022 9:35:00 AM
Lab ID: 2203A72-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	61.0	0	31.6-100	D	%Rec	10	3/23/2022 7:45:00 PM	R86694
Surr: 2-Fluorobiphenyl	65.0	0	26.7-90.1	D	%Rec	10	3/23/2022 7:45:00 PM	R86694
Surr: 4-Terphenyl-d14	98.0	0	72.3-147	D	%Rec	10	3/23/2022 7:45:00 PM	R86694

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203A72**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: East LDU
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/18/2022 9:35:00 AM
Lab ID: 2203A72-002D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.17	0.0016	0.0030		mg/L	1	4/6/2022 2:00:21 PM	66643
Beryllium	0.0052	0.00088	0.0020	*	mg/L	1	4/6/2022 2:00:21 PM	66643
Cadmium	0.013	0.0015	0.0020	*	mg/L	1	4/6/2022 2:00:21 PM	66643
Chromium	7.0	0.021	0.060	*	mg/L	10	4/6/2022 1:57:35 PM	66643
Cobalt	0.10	0.0024	0.0060		mg/L	1	4/6/2022 2:00:21 PM	66643
Nickel	7.3	0.033	0.10	*	mg/L	10	4/6/2022 1:57:35 PM	66643
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 2:00:21 PM	66643
Vanadium	0.14	0.0024	0.050		mg/L	1	4/6/2022 2:00:21 PM	66643
Zinc	ND	0.0064	0.010		mg/L	1	4/6/2022 2:00:21 PM	66643
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	3/23/2022 12:30:31 PM	66341
Arsenic	0.0012	0.00063	0.0050	J	mg/L	5	3/23/2022 12:30:31 PM	66341
Lead	ND	0.00031	0.0025		mg/L	5	3/23/2022 12:30:31 PM	66341
Selenium	ND	0.0019	0.0050		mg/L	5	3/23/2022 12:30:31 PM	66341
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00045	0.0010		mg/L	5	3/25/2022 3:36:14 PM	66396

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203A72**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: East LDU
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/18/2022 9:35:00 AM
Lab ID: 2203A72-002E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.17	0.0011	0.0020		mg/L	1	3/21/2022 11:47:35 AM	A86607
Beryllium	0.0051	0.00088	0.0020	*	mg/L	1	3/21/2022 11:47:35 AM	A86607
Cadmium	0.031	0.00098	0.0020	*	mg/L	1	3/21/2022 11:47:35 AM	A86607
Chromium	7.7	0.020	0.060	*	mg/L	10	4/19/2022 2:46:30 PM	A87332
Cobalt	0.12	0.0024	0.0060		mg/L	1	3/21/2022 11:47:35 AM	A86607
Nickel	8.1	0.033	0.10	*	mg/L	10	4/19/2022 2:46:30 PM	A87332
Silver	ND	0.0013	0.0050		mg/L	1	3/21/2022 11:47:35 AM	A86607
Vanadium	0.16	0.0017	0.050		mg/L	1	3/21/2022 11:47:35 AM	A86607
Zinc	ND	0.0032	0.010		mg/L	1	3/21/2022 11:47:35 AM	A86607
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	3/21/2022 6:58:46 PM	B86624
Arsenic	0.00087	0.00061	0.0050	J	mg/L	5	3/21/2022 6:58:46 PM	B86624
Lead	0.0014	0.00028	0.0025	J	mg/L	5	3/21/2022 6:58:46 PM	B86624
Selenium	ND	0.0017	0.0050		mg/L	5	3/21/2022 6:58:46 PM	B86624
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00010	0.000091	0.00020	J	mg/L	1	3/25/2022 2:44:51 PM	66396

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203A72**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: West LDU
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/18/2022 10:00:00 AM
Lab ID: 2203A72-003A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	13	0.23	1.0		µg/L	1	3/22/2022 4:09:37 PM	R86666
Toluene	0.82	0.20	1.0	J	µg/L	1	3/22/2022 4:09:37 PM	R86666
Ethylbenzene	6.0	0.21	1.0		µg/L	1	3/22/2022 4:09:37 PM	R86666
Methyl tert-butyl ether (MTBE)	4.9	0.39	1.0		µg/L	1	3/22/2022 4:09:37 PM	R86666
1,2,4-Trimethylbenzene	0.51	0.12	1.0	J	µg/L	1	3/22/2022 4:09:37 PM	R86666
1,3,5-Trimethylbenzene	4.8	0.18	1.0		µg/L	1	3/22/2022 4:09:37 PM	R86666
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	3/22/2022 4:09:37 PM	R86666
Acetone	ND	2.5	10		µg/L	1	3/22/2022 4:09:37 PM	R86666
Bromomethane	ND	0.85	3.0		µg/L	1	3/22/2022 4:09:37 PM	R86666
2-Butanone	ND	2.0	10		µg/L	1	3/22/2022 4:09:37 PM	R86666
Carbon disulfide	ND	0.59	10		µg/L	1	3/22/2022 4:09:37 PM	R86666
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/22/2022 4:09:37 PM	R86666
Chloroform	ND	0.13	1.0		µg/L	1	3/22/2022 4:09:37 PM	R86666
Chloromethane	0.83	0.41	3.0	J	µg/L	1	3/22/2022 4:09:37 PM	R86666
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/22/2022 4:09:37 PM	R86666
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/22/2022 4:09:37 PM	R86666
1,1-Dichloroethene	0.53	0.20	1.0	J	µg/L	1	3/22/2022 4:09:37 PM	R86666
Isopropylbenzene	0.94	0.18	1.0	J	µg/L	1	3/22/2022 4:09:37 PM	R86666
4-Isopropyltoluene	0.36	0.20	1.0	J	µg/L	1	3/22/2022 4:09:37 PM	R86666
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/22/2022 4:09:37 PM	R86666
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/22/2022 4:09:37 PM	R86666
n-Propylbenzene	0.65	0.18	1.0	J	µg/L	1	3/22/2022 4:09:37 PM	R86666
sec-Butylbenzene	0.25	0.14	1.0	J	µg/L	1	3/22/2022 4:09:37 PM	R86666
Styrene	ND	0.14	1.0		µg/L	1	3/22/2022 4:09:37 PM	R86666
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/22/2022 4:09:37 PM	R86666
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/22/2022 4:09:37 PM	R86666
Trichloroethene (TCE)	0.58	0.20	1.0	J	µg/L	1	3/22/2022 4:09:37 PM	R86666
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/22/2022 4:09:37 PM	R86666
Xylenes, Total	0.52	0.37	1.5	J	µg/L	1	3/22/2022 4:09:37 PM	R86666
Surr: 1,2-Dichloroethane-d4	88.2	0	70-130		%Rec	1	3/22/2022 4:09:37 PM	R86666
Surr: 4-Bromofluorobenzene	96.4	0	70-130		%Rec	1	3/22/2022 4:09:37 PM	R86666
Surr: Dibromofluoromethane	91.1	0	70-130		%Rec	1	3/22/2022 4:09:37 PM	R86666
Surr: Toluene-d8	99.8	0	70-130		%Rec	1	3/22/2022 4:09:37 PM	R86666
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.28	0.028	0.050		mg/L	1	3/22/2022 4:09:37 PM	G86666
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	3/22/2022 4:09:37 PM	G86666

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203A72**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: West LDU
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/18/2022 10:00:00 AM
Lab ID: 2203A72-003B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0035	0.0095		µg/L	1	3/21/2022 11:08:12 PM	66262

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203A72**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: West LDU
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/18/2022 10:00:00 AM
Lab ID: 2203A72-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	2.0	0.016	0.064		mg/L	1	3/28/2022 2:50:42 PM	66372
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/28/2022 2:50:42 PM	66372
Surr: DNOP	110	0	42.2-138		%Rec	1	3/28/2022 2:50:42 PM	66372
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	1.1	20		µg/L	1	4/2/2022 4:47:07 AM	66355
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	4/2/2022 4:47:07 AM	66355
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	4/2/2022 4:47:07 AM	66355
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	4/2/2022 4:47:07 AM	66355
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	4/2/2022 4:47:07 AM	66355
Diethyl phthalate	ND	3.9	10		µg/L	1	4/2/2022 4:47:07 AM	66355
Dimethyl phthalate	ND	2.0	10		µg/L	1	4/2/2022 4:47:07 AM	66355
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	4/2/2022 4:47:07 AM	66355
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	4/2/2022 4:47:07 AM	66355
2-Methylphenol	ND	0.51	5.0		µg/L	1	4/2/2022 4:47:07 AM	66355
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	4/2/2022 4:47:07 AM	66355
Phenol	ND	0.33	5.0		µg/L	1	4/2/2022 4:47:07 AM	66355
Pyridine	ND	10	10		µg/L	1	4/2/2022 4:47:07 AM	66355
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	4/2/2022 4:47:07 AM	66355
Surr: 2-Fluorophenol	52.6	0	29.4-87.7		%Rec	1	4/2/2022 4:47:07 AM	66355
Surr: Phenol-d5	0	0	28.5-64.7	S	%Rec	1	4/2/2022 4:47:07 AM	66355
Surr: 2,4,6-Tribromophenol	54.0	0	18.6-129		%Rec	1	4/2/2022 4:47:07 AM	66355
Surr: Nitrobenzene-d5	63.6	0	36.9-103		%Rec	1	4/2/2022 4:47:07 AM	66355
Surr: 2-Fluorobiphenyl	59.6	0	38.1-99.9		%Rec	1	4/2/2022 4:47:07 AM	66355
Surr: 4-Terphenyl-d14	87.7	0	48-155		%Rec	1	4/2/2022 4:47:07 AM	66355
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	8.0	0.048	1.0		µg/L	1	3/28/2022 2:33:00 PM	R86800
Naphthalene	0.16	0.034	0.10		µg/L	1	3/28/2022 2:33:00 PM	R86800
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/28/2022 2:33:00 PM	R86800
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/28/2022 2:33:00 PM	R86800
Acenaphthene	ND	0.031	0.10		µg/L	1	3/28/2022 2:33:00 PM	R86800
Fluorene	ND	0.031	0.10		µg/L	1	3/28/2022 2:33:00 PM	R86800
Phenanthrene	ND	0.057	0.10		µg/L	1	3/28/2022 2:33:00 PM	R86800
Anthracene	ND	0.034	0.10		µg/L	1	3/28/2022 2:33:00 PM	R86800
Fluoranthene	ND	0.10	0.20		µg/L	1	3/28/2022 2:33:00 PM	R86800
Pyrene	0.16	0.16	0.20	J	µg/L	1	3/28/2022 2:33:00 PM	R86800
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/28/2022 2:33:00 PM	R86800
Chrysene	ND	0.024	0.10		µg/L	1	3/28/2022 2:33:00 PM	R86800
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/28/2022 2:33:00 PM	R86800
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/28/2022 2:33:00 PM	R86800

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203A72**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: West LDU
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/18/2022 10:00:00 AM
Lab ID: 2203A72-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	63.2	0	31.6-100		%Rec	1	3/28/2022 2:33:00 PM	R86800
Surr: 2-Fluorobiphenyl	54.5	0	26.7-90.1		%Rec	1	3/28/2022 2:33:00 PM	R86800
Surr: 4-Terphenyl-d14	82.7	0	72.3-147		%Rec	1	3/28/2022 2:33:00 PM	R86800

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203A72**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: West LDU
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/18/2022 10:00:00 AM
Lab ID: 2203A72-003D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.066	0.0016	0.0030		mg/L	1	4/6/2022 2:04:34 PM	66643
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 2:04:34 PM	66643
Cadmium	0.0047	0.0015	0.0020		mg/L	1	4/6/2022 2:04:34 PM	66643
Chromium	0.32	0.0021	0.0060	*	mg/L	1	4/6/2022 2:04:34 PM	66643
Cobalt	0.0061	0.0024	0.0060		mg/L	1	4/6/2022 2:04:34 PM	66643
Nickel	0.81	0.0033	0.010	*	mg/L	1	4/6/2022 2:04:34 PM	66643
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 2:04:34 PM	66643
Vanadium	0.066	0.0024	0.050		mg/L	1	4/6/2022 2:04:34 PM	66643
Zinc	ND	0.0064	0.010		mg/L	1	4/6/2022 2:04:34 PM	66643
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	3/23/2022 12:37:52 PM	66341
Arsenic	0.00068	0.00063	0.0050	J	mg/L	5	3/23/2022 12:37:52 PM	66341
Lead	ND	0.00031	0.0025		mg/L	5	3/23/2022 12:37:52 PM	66341
Selenium	ND	0.0019	0.0050		mg/L	5	3/23/2022 12:37:52 PM	66341
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/25/2022 2:46:59 PM	66396

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203A72**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: West LDU
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/18/2022 10:00:00 AM
Lab ID: 2203A72-003E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.068	0.0011	0.0020		mg/L	1	3/21/2022 11:50:26 AM	A86607
Beryllium	ND	0.00088	0.0020		mg/L	1	3/21/2022 11:50:26 AM	A86607
Cadmium	0.012	0.00098	0.0020	*	mg/L	1	3/21/2022 11:50:26 AM	A86607
Chromium	0.14	0.0020	0.0060	*	mg/L	1	3/21/2022 11:50:26 AM	A86607
Cobalt	0.013	0.0024	0.0060		mg/L	1	3/21/2022 11:50:26 AM	A86607
Nickel	0.89	0.0033	0.010	*	mg/L	1	3/21/2022 11:50:26 AM	A86607
Silver	ND	0.0013	0.0050		mg/L	1	3/21/2022 11:50:26 AM	A86607
Vanadium	0.071	0.0017	0.050		mg/L	1	3/21/2022 11:50:26 AM	A86607
Zinc	0.0080	0.0032	0.010	J	mg/L	1	3/21/2022 11:50:26 AM	A86607
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	3/22/2022 12:22:24 PM	A86633
Arsenic	ND	0.00061	0.0050		mg/L	5	3/22/2022 12:22:24 PM	A86633
Lead	ND	0.00028	0.0025		mg/L	5	3/22/2022 12:22:24 PM	A86633
Selenium	ND	0.0017	0.0050		mg/L	5	3/22/2022 12:22:24 PM	A86633
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/25/2022 2:49:05 PM	66396

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203A72**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1 to EP-2
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/18/2022 11:00:00 AM
Lab ID: 2203A72-004A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	3/22/2022 5:35:10 PM	R86666
Toluene	ND	0.20	1.0		µg/L	1	3/22/2022 5:35:10 PM	R86666
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/22/2022 5:35:10 PM	R86666
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/22/2022 5:35:10 PM	R86666
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/22/2022 5:35:10 PM	R86666
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/22/2022 5:35:10 PM	R86666
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	3/22/2022 5:35:10 PM	R86666
Acetone	3.4	2.5	10	J	µg/L	1	3/22/2022 5:35:10 PM	R86666
Bromomethane	ND	0.85	3.0		µg/L	1	3/22/2022 5:35:10 PM	R86666
2-Butanone	ND	2.0	10		µg/L	1	3/22/2022 5:35:10 PM	R86666
Carbon disulfide	ND	0.59	10		µg/L	1	3/22/2022 5:35:10 PM	R86666
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/22/2022 5:35:10 PM	R86666
Chloroform	ND	0.13	1.0		µg/L	1	3/22/2022 5:35:10 PM	R86666
Chloromethane	0.69	0.41	3.0	J	µg/L	1	3/22/2022 5:35:10 PM	R86666
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/22/2022 5:35:10 PM	R86666
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/22/2022 5:35:10 PM	R86666
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/22/2022 5:35:10 PM	R86666
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/22/2022 5:35:10 PM	R86666
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/22/2022 5:35:10 PM	R86666
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/22/2022 5:35:10 PM	R86666
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/22/2022 5:35:10 PM	R86666
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/22/2022 5:35:10 PM	R86666
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/22/2022 5:35:10 PM	R86666
Styrene	ND	0.14	1.0		µg/L	1	3/22/2022 5:35:10 PM	R86666
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/22/2022 5:35:10 PM	R86666
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/22/2022 5:35:10 PM	R86666
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/22/2022 5:35:10 PM	R86666
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/22/2022 5:35:10 PM	R86666
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/22/2022 5:35:10 PM	R86666
Surr: 1,2-Dichloroethane-d4	90.3	0	70-130		%Rec	1	3/22/2022 5:35:10 PM	R86666
Surr: 4-Bromofluorobenzene	97.4	0	70-130		%Rec	1	3/22/2022 5:35:10 PM	R86666
Surr: Dibromofluoromethane	94.3	0	70-130		%Rec	1	3/22/2022 5:35:10 PM	R86666
Surr: Toluene-d8	102	0	70-130		%Rec	1	3/22/2022 5:35:10 PM	R86666
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.044	0.028	0.050	J	mg/L	1	3/22/2022 5:35:10 PM	G86666
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	3/22/2022 5:35:10 PM	G86666

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203A72**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1 to EP-2
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/18/2022 11:00:00 AM
Lab ID: 2203A72-004B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0035	0.0095		µg/L	1	3/21/2022 11:23:09 PM	66262

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203A72**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1 to EP-2
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/18/2022 11:00:00 AM
Lab ID: 2203A72-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.59	0.016	0.064		mg/L	1	3/28/2022 9:39:59 PM	66372
Motor Oil Range Organics (MRO)	0.74	0.052	0.080		mg/L	1	3/28/2022 9:39:59 PM	66372
Surr: DNOP	101	0	42.2-138		%Rec	1	3/28/2022 9:39:59 PM	66372
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	11	200	D	µg/L	10	3/23/2022 11:38:53 PM	66282
Bis(2-ethylhexyl)phthalate	ND	45	100	D	µg/L	10	3/23/2022 11:38:53 PM	66282
Di-n-butyl phthalate	ND	65	100	D	µg/L	10	3/23/2022 11:38:53 PM	66282
Di-n-octyl phthalate	ND	31	200	D	µg/L	10	3/23/2022 11:38:53 PM	66282
1,4-Dichlorobenzene	ND	7.0	50	D	µg/L	10	3/23/2022 11:38:53 PM	66282
Diethyl phthalate	ND	39	100	D	µg/L	10	3/23/2022 11:38:53 PM	66282
Dimethyl phthalate	ND	20	100	D	µg/L	10	3/23/2022 11:38:53 PM	66282
2,4-Dimethylphenol	ND	9.7	50	D	µg/L	10	3/23/2022 11:38:53 PM	66282
2,4-Dinitrophenol	ND	5.0	50	D	µg/L	10	3/23/2022 11:38:53 PM	66282
2-Methylphenol	ND	5.1	50	D	µg/L	10	3/23/2022 11:38:53 PM	66282
3+4-Methylphenol	ND	4.5	50	D	µg/L	10	3/23/2022 11:38:53 PM	66282
Phenol	ND	3.3	50	D	µg/L	10	3/23/2022 11:38:53 PM	66282
Pyridine	ND	100	100	D	µg/L	10	3/23/2022 11:38:53 PM	66282
2,4,6-Trichlorophenol	ND	4.3	50	D	µg/L	10	3/23/2022 11:38:53 PM	66282
Surr: 2-Fluorophenol	0	0	29.4-87.7	SD	%Rec	10	3/23/2022 11:38:53 PM	66282
Surr: Phenol-d5	0	0	28.5-64.7	SD	%Rec	10	3/23/2022 11:38:53 PM	66282
Surr: 2,4,6-Tribromophenol	0	0	18.6-129	SD	%Rec	10	3/23/2022 11:38:53 PM	66282
Surr: Nitrobenzene-d5	0	0	36.9-103	SD	%Rec	10	3/23/2022 11:38:53 PM	66282
Surr: 2-Fluorobiphenyl	0	0	38.1-99.9	SD	%Rec	10	3/23/2022 11:38:53 PM	66282
Surr: 4-Terphenyl-d14	0	0	48-155	SD	%Rec	10	3/23/2022 11:38:53 PM	66282
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.48	10	D	µg/L	10	3/23/2022 8:30:00 PM	R86694
Naphthalene	ND	0.34	1.0	D	µg/L	10	3/23/2022 8:30:00 PM	R86694
1-Methylnaphthalene	ND	0.24	1.0	D	µg/L	10	3/23/2022 8:30:00 PM	R86694
2-Methylnaphthalene	ND	0.34	1.0	D	µg/L	10	3/23/2022 8:30:00 PM	R86694
Acenaphthene	ND	0.31	1.0	D	µg/L	10	3/23/2022 8:30:00 PM	R86694
Fluorene	ND	0.31	1.0	D	µg/L	10	3/23/2022 8:30:00 PM	R86694
Phenanthrene	ND	0.57	1.0	D	µg/L	10	3/23/2022 8:30:00 PM	R86694
Anthracene	ND	0.34	1.0	D	µg/L	10	3/23/2022 8:30:00 PM	R86694
Fluoranthene	ND	1.0	2.0	D	µg/L	10	3/23/2022 8:30:00 PM	R86694
Pyrene	ND	1.6	2.0	D	µg/L	10	3/23/2022 8:30:00 PM	R86694
Benz(a)anthracene	ND	0.36	1.0	D	µg/L	10	3/23/2022 8:30:00 PM	R86694
Chrysene	ND	0.24	1.0	D	µg/L	10	3/23/2022 8:30:00 PM	R86694
Benzo(b)fluoranthene	ND	0.57	1.0	D	µg/L	10	3/23/2022 8:30:00 PM	R86694
Indeno(1,2,3-cd)pyrene	ND	0.43	3.0	D	µg/L	10	3/23/2022 8:30:00 PM	R86694

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203A72**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1 to EP-2
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/18/2022 11:00:00 AM
Lab ID: 2203A72-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	39.0	0	31.6-100	D	%Rec	10	3/23/2022 8:30:00 PM	R86694
Surr: 2-Fluorobiphenyl	42.4	0	26.7-90.1	D	%Rec	10	3/23/2022 8:30:00 PM	R86694
Surr: 4-Terphenyl-d14	109	0	72.3-147	D	%Rec	10	3/23/2022 8:30:00 PM	R86694

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203A72**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1 to EP-2
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/18/2022 11:00:00 AM
Lab ID: 2203A72-004D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.020	0.0016	0.0030		mg/L	1	4/6/2022 2:06:03 PM	66643
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 2:06:03 PM	66643
Cadmium	ND	0.0015	0.0020		mg/L	1	4/6/2022 2:06:03 PM	66643
Chromium	ND	0.0021	0.0060		mg/L	1	4/6/2022 2:06:03 PM	66643
Cobalt	0.0042	0.0024	0.0060	J	mg/L	1	4/6/2022 2:06:03 PM	66643
Nickel	ND	0.0033	0.010		mg/L	1	4/6/2022 2:06:03 PM	66643
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 2:06:03 PM	66643
Vanadium	ND	0.0024	0.050		mg/L	1	4/6/2022 2:06:03 PM	66643
Zinc	0.041	0.0064	0.010		mg/L	1	4/6/2022 2:06:03 PM	66643
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/23/2022 12:42:45 PM	66341
Arsenic	0.0030	0.00013	0.0010		mg/L	1	3/23/2022 12:42:45 PM	66341
Lead	0.00017	0.000061	0.00050	J	mg/L	1	3/23/2022 12:42:45 PM	66341
Selenium	0.0014	0.00037	0.0010		mg/L	1	3/23/2022 12:42:45 PM	66341
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/25/2022 2:51:15 PM	66396

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203A72**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1 to EP-2
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/18/2022 11:00:00 AM
Lab ID: 2203A72-004E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.020	0.0011	0.0020		mg/L	1	3/21/2022 11:53:15 AM	A86607
Beryllium	ND	0.00088	0.0020		mg/L	1	3/21/2022 11:53:15 AM	A86607
Cadmium	ND	0.00098	0.0020		mg/L	1	3/21/2022 11:53:15 AM	A86607
Chromium	ND	0.0020	0.0060		mg/L	1	3/21/2022 11:53:15 AM	A86607
Cobalt	0.0028	0.0024	0.0060	J	mg/L	1	3/21/2022 11:53:15 AM	A86607
Nickel	ND	0.0033	0.010		mg/L	1	3/21/2022 11:53:15 AM	A86607
Silver	0.0014	0.0013	0.0050	J	mg/L	1	3/21/2022 11:53:15 AM	A86607
Vanadium	ND	0.0017	0.050		mg/L	1	3/21/2022 11:53:15 AM	A86607
Zinc	0.029	0.0032	0.010		mg/L	1	3/21/2022 11:53:15 AM	A86607
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/21/2022 7:04:09 PM	B86624
Arsenic	0.0028	0.00012	0.0010		mg/L	1	3/21/2022 7:04:09 PM	B86624
Lead	ND	0.000057	0.00050		mg/L	1	3/21/2022 7:04:09 PM	B86624
Selenium	0.00084	0.00034	0.0010	J	mg/L	1	3/21/2022 7:04:09 PM	B86624
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/25/2022 2:53:25 PM	66396

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203A72**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1 to EP-2
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/18/2022 11:00:00 AM
Lab ID: 2203A72-004F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
SM 9223B FECAL INDICATOR: E. COLI MPN							Analyst: **AKS**	
E. Coli	19863	10.00	10.00		MPN/100	10	3/19/2022 5:10:00 PM	66276

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203A72**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1 to EP-2
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/18/2022 11:00:00 AM
Lab ID: 2203A72-004G
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
SM5210B: BOD							Analyst: **dms**	
Biochemical Oxygen Demand	<37.88	2.0	2.0	H	mg/L	1	3/23/2022 4:44:00 PM	66272

NOTES:
E-Estimated Value due to all bottles having depleted <2.0 mg/L

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203A72**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB 3-18-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/18/2022 11:00:00 AM
Lab ID: 2203A72-005A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	3/22/2022 6:03:46 PM	R86666
Toluene	ND	0.20	1.0		µg/L	1	3/22/2022 6:03:46 PM	R86666
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/22/2022 6:03:46 PM	R86666
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/22/2022 6:03:46 PM	R86666
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/22/2022 6:03:46 PM	R86666
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/22/2022 6:03:46 PM	R86666
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	3/22/2022 6:03:46 PM	R86666
Acetone	ND	2.5	10		µg/L	1	3/22/2022 6:03:46 PM	R86666
Bromomethane	ND	0.85	3.0		µg/L	1	3/22/2022 6:03:46 PM	R86666
2-Butanone	ND	2.0	10		µg/L	1	3/22/2022 6:03:46 PM	R86666
Carbon disulfide	ND	0.59	10		µg/L	1	3/22/2022 6:03:46 PM	R86666
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/22/2022 6:03:46 PM	R86666
Chloroform	ND	0.13	1.0		µg/L	1	3/22/2022 6:03:46 PM	R86666
Chloromethane	ND	0.41	3.0		µg/L	1	3/22/2022 6:03:46 PM	R86666
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/22/2022 6:03:46 PM	R86666
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/22/2022 6:03:46 PM	R86666
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/22/2022 6:03:46 PM	R86666
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/22/2022 6:03:46 PM	R86666
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/22/2022 6:03:46 PM	R86666
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/22/2022 6:03:46 PM	R86666
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/22/2022 6:03:46 PM	R86666
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/22/2022 6:03:46 PM	R86666
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/22/2022 6:03:46 PM	R86666
Styrene	ND	0.14	1.0		µg/L	1	3/22/2022 6:03:46 PM	R86666
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/22/2022 6:03:46 PM	R86666
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/22/2022 6:03:46 PM	R86666
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/22/2022 6:03:46 PM	R86666
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/22/2022 6:03:46 PM	R86666
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/22/2022 6:03:46 PM	R86666
Surr: 1,2-Dichloroethane-d4	88.4	0	70-130		%Rec	1	3/22/2022 6:03:46 PM	R86666
Surr: 4-Bromofluorobenzene	97.9	0	70-130		%Rec	1	3/22/2022 6:03:46 PM	R86666
Surr: Dibromofluoromethane	92.6	0	70-130		%Rec	1	3/22/2022 6:03:46 PM	R86666
Surr: Toluene-d8	98.2	0	70-130		%Rec	1	3/22/2022 6:03:46 PM	R86666
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.032	0.028	0.050	J	mg/L	1	3/22/2022 6:03:46 PM	G86666
Surr: 4-Bromofluorobenzene	99.3	0	70-130		%Rec	1	3/22/2022 6:03:46 PM	G86666

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203A72**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3-18-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/18/2022
Lab ID: 2203A72-006A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	12	0.23	1.0		µg/L	1	3/22/2022 6:32:20 PM	R86666
Toluene	0.70	0.20	1.0	J	µg/L	1	3/22/2022 6:32:20 PM	R86666
Ethylbenzene	5.8	0.21	1.0		µg/L	1	3/22/2022 6:32:20 PM	R86666
Methyl tert-butyl ether (MTBE)	4.8	0.39	1.0		µg/L	1	3/22/2022 6:32:20 PM	R86666
1,2,4-Trimethylbenzene	0.46	0.12	1.0	J	µg/L	1	3/22/2022 6:32:20 PM	R86666
1,3,5-Trimethylbenzene	4.7	0.18	1.0		µg/L	1	3/22/2022 6:32:20 PM	R86666
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	3/22/2022 6:32:20 PM	R86666
Acetone	ND	2.5	10		µg/L	1	3/22/2022 6:32:20 PM	R86666
Bromomethane	ND	0.85	3.0		µg/L	1	3/22/2022 6:32:20 PM	R86666
2-Butanone	ND	2.0	10		µg/L	1	3/22/2022 6:32:20 PM	R86666
Carbon disulfide	ND	0.59	10		µg/L	1	3/22/2022 6:32:20 PM	R86666
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/22/2022 6:32:20 PM	R86666
Chloroform	ND	0.13	1.0		µg/L	1	3/22/2022 6:32:20 PM	R86666
Chloromethane	0.85	0.41	3.0	J	µg/L	1	3/22/2022 6:32:20 PM	R86666
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/22/2022 6:32:20 PM	R86666
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/22/2022 6:32:20 PM	R86666
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/22/2022 6:32:20 PM	R86666
Isopropylbenzene	0.90	0.18	1.0	J	µg/L	1	3/22/2022 6:32:20 PM	R86666
4-Isopropyltoluene	0.36	0.20	1.0	J	µg/L	1	3/22/2022 6:32:20 PM	R86666
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/22/2022 6:32:20 PM	R86666
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/22/2022 6:32:20 PM	R86666
n-Propylbenzene	0.59	0.18	1.0	J	µg/L	1	3/22/2022 6:32:20 PM	R86666
sec-Butylbenzene	0.22	0.14	1.0	J	µg/L	1	3/22/2022 6:32:20 PM	R86666
Styrene	ND	0.14	1.0		µg/L	1	3/22/2022 6:32:20 PM	R86666
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/22/2022 6:32:20 PM	R86666
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/22/2022 6:32:20 PM	R86666
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/22/2022 6:32:20 PM	R86666
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/22/2022 6:32:20 PM	R86666
Xylenes, Total	0.51	0.37	1.5	J	µg/L	1	3/22/2022 6:32:20 PM	R86666
Surr: 1,2-Dichloroethane-d4	91.1	0	70-130		%Rec	1	3/22/2022 6:32:20 PM	R86666
Surr: 4-Bromofluorobenzene	98.3	0	70-130		%Rec	1	3/22/2022 6:32:20 PM	R86666
Surr: Dibromofluoromethane	90.8	0	70-130		%Rec	1	3/22/2022 6:32:20 PM	R86666
Surr: Toluene-d8	100	0	70-130		%Rec	1	3/22/2022 6:32:20 PM	R86666
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.27	0.028	0.050		mg/L	1	3/22/2022 6:32:20 PM	G86666
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	1	3/22/2022 6:32:20 PM	G86666

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203A72**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3-18-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/18/2022
Lab ID: 2203A72-006B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0035	0.0095		µg/L	1	3/21/2022 11:38:09 PM	66262

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203A72**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3-18-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/18/2022
Lab ID: 2203A72-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	2.4	0.016	0.064		mg/L	1	3/28/2022 3:14:51 PM	66372
Motor Oil Range Organics (MRO)	0.12	0.052	0.080		mg/L	1	3/28/2022 3:14:51 PM	66372
Surr: DNOP	159	0	42.2-138	S	%Rec	1	3/28/2022 3:14:51 PM	66372
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	1.1	20		µg/L	1	3/24/2022 12:19:33 AM	66282
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/24/2022 12:19:33 AM	66282
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/24/2022 12:19:33 AM	66282
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/24/2022 12:19:33 AM	66282
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/24/2022 12:19:33 AM	66282
Diethyl phthalate	ND	3.9	10		µg/L	1	3/24/2022 12:19:33 AM	66282
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/24/2022 12:19:33 AM	66282
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/24/2022 12:19:33 AM	66282
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/24/2022 12:19:33 AM	66282
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/24/2022 12:19:33 AM	66282
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/24/2022 12:19:33 AM	66282
Phenol	ND	0.33	5.0		µg/L	1	3/24/2022 12:19:33 AM	66282
Pyridine	ND	10	10		µg/L	1	3/24/2022 12:19:33 AM	66282
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/24/2022 12:19:33 AM	66282
Surr: 2-Fluorophenol	48.5	0	29.4-87.7		%Rec	1	3/24/2022 12:19:33 AM	66282
Surr: Phenol-d5	0	0	28.5-64.7	S	%Rec	1	3/24/2022 12:19:33 AM	66282
Surr: 2,4,6-Tribromophenol	64.5	0	18.6-129		%Rec	1	3/24/2022 12:19:33 AM	66282
Surr: Nitrobenzene-d5	62.7	0	36.9-103		%Rec	1	3/24/2022 12:19:33 AM	66282
Surr: 2-Fluorobiphenyl	54.6	0	38.1-99.9		%Rec	1	3/24/2022 12:19:33 AM	66282
Surr: 4-Terphenyl-d14	75.1	0	48-155		%Rec	1	3/24/2022 12:19:33 AM	66282
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.48	10	D	µg/L	10	3/23/2022 10:10:00 PM	R86694
Naphthalene	ND	0.34	1.0	D	µg/L	10	3/23/2022 10:10:00 PM	R86694
1-Methylnaphthalene	ND	0.24	1.0	D	µg/L	10	3/23/2022 10:10:00 PM	R86694
2-Methylnaphthalene	ND	0.34	1.0	D	µg/L	10	3/23/2022 10:10:00 PM	R86694
Acenaphthene	ND	0.31	1.0	D	µg/L	10	3/23/2022 10:10:00 PM	R86694
Fluorene	ND	0.31	1.0	D	µg/L	10	3/23/2022 10:10:00 PM	R86694
Phenanthrene	ND	0.57	1.0	D	µg/L	10	3/23/2022 10:10:00 PM	R86694
Anthracene	ND	0.34	1.0	D	µg/L	10	3/23/2022 10:10:00 PM	R86694
Fluoranthene	ND	1.0	2.0	D	µg/L	10	3/23/2022 10:10:00 PM	R86694
Pyrene	ND	1.6	2.0	D	µg/L	10	3/23/2022 10:10:00 PM	R86694
Benz(a)anthracene	ND	0.36	1.0	D	µg/L	10	3/23/2022 10:10:00 PM	R86694
Chrysene	ND	0.24	1.0	D	µg/L	10	3/23/2022 10:10:00 PM	R86694
Benzo(b)fluoranthene	ND	0.57	1.0	D	µg/L	10	3/23/2022 10:10:00 PM	R86694
Indeno(1,2,3-cd)pyrene	ND	0.43	3.0	D	µg/L	10	3/23/2022 10:10:00 PM	R86694

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203A72**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3-18-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/18/2022
Lab ID: 2203A72-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	56.8	0	31.6-100	D	%Rec	10	3/23/2022 10:10:00 PM	R86694
Surr: 2-Fluorobiphenyl	60.0	0	26.7-90.1	D	%Rec	10	3/23/2022 10:10:00 PM	R86694
Surr: 4-Terphenyl-d14	97.8	0	72.3-147	D	%Rec	10	3/23/2022 10:10:00 PM	R86694

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203A72**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3-18-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/18/2022
Lab ID: 2203A72-006D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.068	0.0016	0.0030		mg/L	1	4/6/2022 2:16:08 PM	66643
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 2:16:08 PM	66643
Cadmium	0.0055	0.0015	0.0020	*	mg/L	1	4/6/2022 2:16:08 PM	66643
Chromium	0.32	0.0021	0.0060	*	mg/L	1	4/6/2022 2:16:08 PM	66643
Cobalt	0.0069	0.0024	0.0060		mg/L	1	4/6/2022 2:16:08 PM	66643
Nickel	0.83	0.0033	0.010	*	mg/L	1	4/6/2022 2:16:08 PM	66643
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 2:16:08 PM	66643
Vanadium	0.067	0.0024	0.050		mg/L	1	4/6/2022 2:16:08 PM	66643
Zinc	ND	0.0064	0.010		mg/L	1	4/6/2022 2:16:08 PM	66643
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	3/23/2022 12:45:12 PM	66341
Arsenic	0.00064	0.00063	0.0050	J	mg/L	5	3/23/2022 12:45:12 PM	66341
Lead	ND	0.00031	0.0025		mg/L	5	3/23/2022 12:45:12 PM	66341
Selenium	ND	0.0019	0.0050		mg/L	5	3/23/2022 12:45:12 PM	66341
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/25/2022 2:55:33 PM	66396

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203A72**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3-18-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/18/2022
Lab ID: 2203A72-006E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.069	0.0011	0.0020		mg/L	1	3/21/2022 11:56:38 AM	A86607
Beryllium	0.00090	0.00088	0.0020	J	mg/L	1	3/21/2022 11:56:38 AM	A86607
Cadmium	0.013	0.00098	0.0020	*	mg/L	1	3/21/2022 11:56:38 AM	A86607
Chromium	0.14	0.0020	0.0060	*	mg/L	1	3/21/2022 11:56:38 AM	A86607
Cobalt	0.014	0.0024	0.0060		mg/L	1	3/21/2022 11:56:38 AM	A86607
Nickel	0.88	0.0033	0.010	*	mg/L	1	3/21/2022 11:56:38 AM	A86607
Silver	ND	0.0013	0.0050		mg/L	1	3/21/2022 11:56:38 AM	A86607
Vanadium	0.069	0.0017	0.050		mg/L	1	3/21/2022 11:56:38 AM	A86607
Zinc	0.012	0.0032	0.010		mg/L	1	3/21/2022 11:56:38 AM	A86607
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	3/21/2022 7:06:51 PM	B86624
Arsenic	ND	0.00061	0.0050		mg/L	5	3/21/2022 7:06:51 PM	B86624
Lead	ND	0.00028	0.0025		mg/L	5	3/21/2022 7:06:51 PM	B86624
Selenium	ND	0.0017	0.0050		mg/L	5	3/21/2022 7:06:51 PM	B86624
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/25/2022 3:01:57 PM	66396

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203A72**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 1st Qtr
Collection Date:
Lab ID: 2203A72-007A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	3/22/2022 7:00:51 PM	R86666
Toluene	ND	0.20	1.0		µg/L	1	3/22/2022 7:00:51 PM	R86666
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/22/2022 7:00:51 PM	R86666
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/22/2022 7:00:51 PM	R86666
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/22/2022 7:00:51 PM	R86666
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/22/2022 7:00:51 PM	R86666
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	3/22/2022 7:00:51 PM	R86666
Acetone	ND	2.5	10		µg/L	1	3/22/2022 7:00:51 PM	R86666
Bromomethane	ND	0.85	3.0		µg/L	1	3/22/2022 7:00:51 PM	R86666
2-Butanone	ND	2.0	10		µg/L	1	3/22/2022 7:00:51 PM	R86666
Carbon disulfide	ND	0.59	10		µg/L	1	3/22/2022 7:00:51 PM	R86666
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/22/2022 7:00:51 PM	R86666
Chloroform	ND	0.13	1.0		µg/L	1	3/22/2022 7:00:51 PM	R86666
Chloromethane	0.67	0.41	3.0	J	µg/L	1	3/22/2022 7:00:51 PM	R86666
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/22/2022 7:00:51 PM	R86666
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/22/2022 7:00:51 PM	R86666
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/22/2022 7:00:51 PM	R86666
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/22/2022 7:00:51 PM	R86666
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/22/2022 7:00:51 PM	R86666
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/22/2022 7:00:51 PM	R86666
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/22/2022 7:00:51 PM	R86666
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/22/2022 7:00:51 PM	R86666
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/22/2022 7:00:51 PM	R86666
Styrene	ND	0.14	1.0		µg/L	1	3/22/2022 7:00:51 PM	R86666
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/22/2022 7:00:51 PM	R86666
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/22/2022 7:00:51 PM	R86666
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/22/2022 7:00:51 PM	R86666
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/22/2022 7:00:51 PM	R86666
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/22/2022 7:00:51 PM	R86666
Surr: 1,2-Dichloroethane-d4	85.0	0	70-130		%Rec	1	3/22/2022 7:00:51 PM	R86666
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	3/22/2022 7:00:51 PM	R86666
Surr: Dibromofluoromethane	90.6	0	70-130		%Rec	1	3/22/2022 7:00:51 PM	R86666
Surr: Toluene-d8	103	0	70-130		%Rec	1	3/22/2022 7:00:51 PM	R86666
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.035	0.028	0.050	J	mg/L	1	3/22/2022 7:00:51 PM	G86666
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	3/22/2022 7:00:51 PM	G86666

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203A72**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 1st Qtr
Collection Date:
Lab ID: 2203A72-007B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	3/21/2022 11:53:03 PM	66262

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

ANALYTICAL REPORT

March 30, 2022

Hall Environmental Analysis Laboratory

Sample Delivery Group: L1473974

Samples Received: 03/22/2022

Project Number:

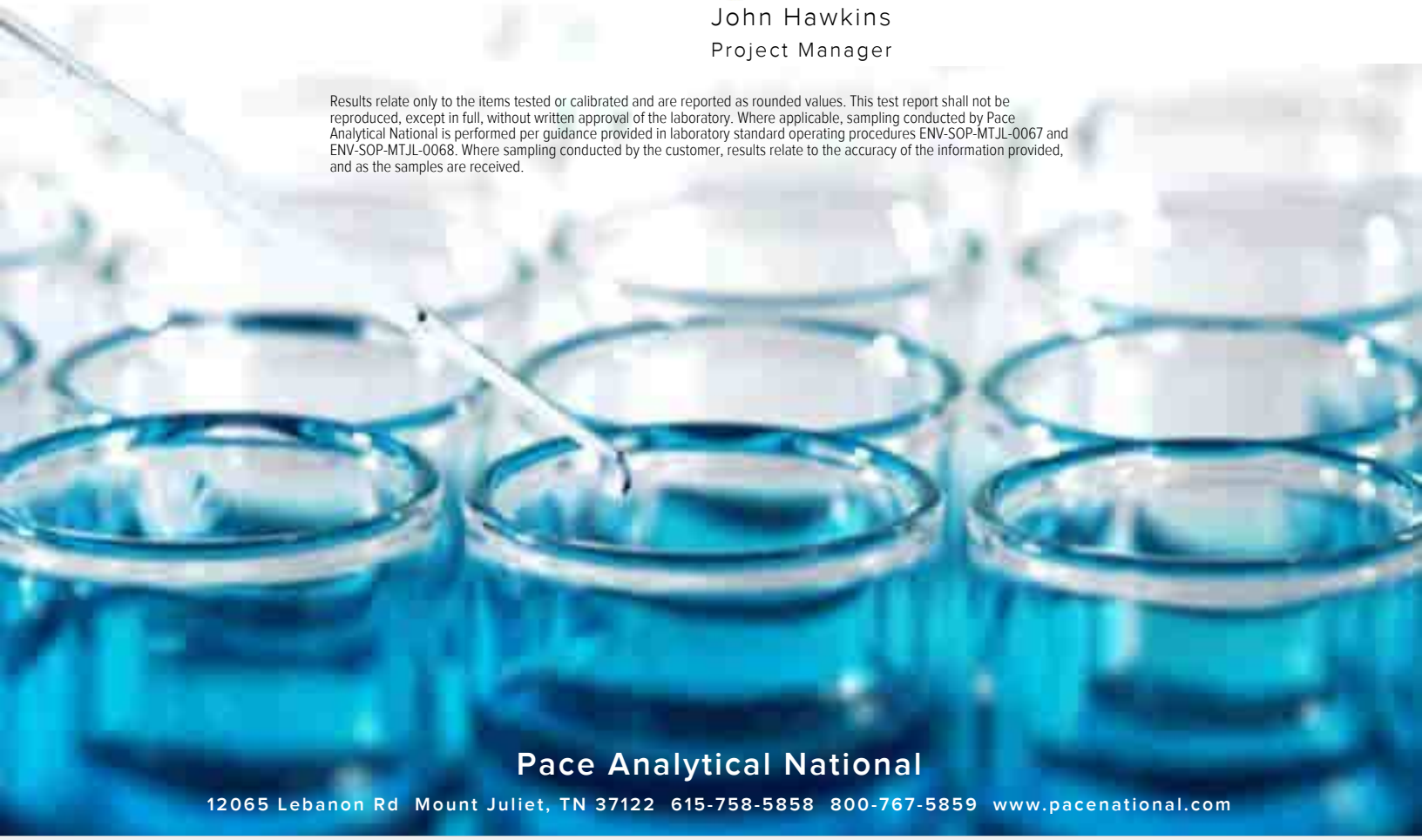
Description:

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By:

John Hawkins
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 4

Sr: Sample Results 5

- 2203A72-001F EB 3-18-22 L1473974-01 5
- 2203A72-002F EAST LDU L1473974-02 6
- 2203A72-003F WEST LDU L1473974-03 7
- 2203A72-004HI STP-1 TO EP-2 L1473974-04 8
- 2203A72-006F DUP 3-18-22 L1473974-05 9

Qc: Quality Control Summary 10

- Wet Chemistry by Method 410.4 10
- Wet Chemistry by Method 4500CN E-2016 11

Gl: Glossary of Terms 13

Al: Accreditations & Locations 14

Sc: Sample Chain of Custody 15

SAMPLE SUMMARY

2203A72-001F EB 3-18-22 L1473974-01 GW

Collected by	Collected date/time	Received date/time
	03/18/22 08:35	03/22/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1836405	1	03/23/22 09:33	03/24/22 11:40	LDT	Mt. Juliet, TN

2203A72-002F EAST LDU L1473974-02 GW

Collected by	Collected date/time	Received date/time
	03/18/22 09:35	03/22/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1836405	1	03/23/22 09:33	03/24/22 11:41	LDT	Mt. Juliet, TN

2203A72-003F WEST LDU L1473974-03 GW

Collected by	Collected date/time	Received date/time
	03/18/22 10:00	03/22/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1836405	1	03/23/22 09:33	03/24/22 11:42	LDT	Mt. Juliet, TN

2203A72-004HI STP-1 TO EP-2 L1473974-04 GW

Collected by	Collected date/time	Received date/time
	03/18/22 11:00	03/22/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 410.4	WG1836817	1	03/23/22 13:40	03/23/22 13:59	PSN	Mt. Juliet, TN
Wet Chemistry by Method 4500CN E-2016	WG1836405	1	03/23/22 09:33	03/24/22 11:45	LDT	Mt. Juliet, TN

2203A72-006F DUP 3-18-22 L1473974-05 GW

Collected by	Collected date/time	Received date/time
	03/18/22 00:00	03/22/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1836836	1	03/23/22 18:57	03/30/22 12:47	LDT	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	03/24/2022 11:40	WG1836405

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	03/24/2022 11:41	WG1836405

Received by OCD: 4/21/2023 9:21:57 AM

SAMPLE RESULTS - 03

L1473974

Collected date/time: 03/18/22 10:00

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	03/24/2022 11:42	WG1836405

Released to Imaging: 4/21/2023 9:40:26 AM

Wet Chemistry by Method 410.4

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
COD	194		20.0	1	03/23/2022 13:59	WG1836817

Wet Chemistry by Method 4500CN E-2016

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Cyanide	ND		0.00500	1	03/24/2022 11:45	WG1836405

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	03/30/2022 12:47	WG1836836

Received by OCD: 4/21/2023 9:21:57 AM

Method Blank (MB)

(MB) R3773147-1 03/23/22 13:55

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
COD	U		11.7	20.0

L1468932-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1468932-01 03/23/22 13:56 • (DUP) R3773147-3 03/23/22 13:56

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
COD	154	148	1	4.29		20

L1473995-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1473995-07 03/23/22 14:01 • (DUP) R3773147-6 03/23/22 14:01

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
COD	ND	ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3773147-2 03/23/22 13:56

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
COD	500	511	102	90.0-110	

L1473995-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1473995-02 03/23/22 13:59 • (MS) R3773147-4 03/23/22 14:00 • (MSD) R3773147-5 03/23/22 14:00

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
COD	500	66.2	525	527	91.8	92.1	1	80.0-120			0.304	20

Released to Imaging: 4/21/2023 9:40:26 AM

Method Blank (MB)

(MB) R3773518-1 03/24/22 11:08

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1473729-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1473729-03 03/24/22 11:16 • (DUP) R3773518-3 03/24/22 11:17

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	0.0964	0.0945	1	1.99		20

L1473729-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1473729-04 03/24/22 11:20 • (DUP) R3773518-4 03/24/22 11:21

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	0.0677	0.0653	1	3.61		20

Laboratory Control Sample (LCS)

(LCS) R3773518-2 03/24/22 11:09

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.102	102	87.1-120	

L1473729-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1473729-06 03/24/22 11:23 • (MS) R3773518-5 03/24/22 11:24 • (MSD) R3773518-6 03/24/22 11:25

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0920	0.0985	92.0	98.5	1	90.0-110			6.82	20

L1473964-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1473964-01 03/24/22 11:28 • (MS) R3773518-7 03/24/22 11:29 • (MSD) R3773518-8 03/24/22 11:32

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.103	0.102	99.9	98.9	1	90.0-110			0.976	20

Method Blank (MB)

(MB) R3775665-1 03/30/22 12:43

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1473974-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1473974-05 03/30/22 12:47 • (DUP) R3775665-3 03/30/22 12:48

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

L1473975-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1473975-04 03/30/22 12:56 • (DUP) R3775665-6 03/30/22 12:57

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	73.6	P1	20

Laboratory Control Sample (LCS)

(LCS) R3775665-2 03/30/22 12:44

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.101	101	87.1-120	

L1473975-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1473975-02 03/30/22 12:50 • (MS) R3775665-4 03/30/22 12:51 • (MSD) R3775665-5 03/30/22 12:52

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.103	0.104	98.5	99.5	1	90.0-110			0.966	20

L1473975-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1473975-06 03/30/22 12:59 • (MS) R3775665-7 03/30/22 13:00 • (MSD) R3775665-8 03/30/22 13:01

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0893	0.0823	86.2	79.2	1	90.0-110	J6	J6	8.16	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

E165

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: clients.hallenvironmental.com

SUB CONTRATOR:	Pace TN	COMPANY: PACE TN	PHONE: (800) 767-5859	FAX: (615) 758-5859	
ADDRESS:	12065 Lebanon Rd		ACCOUNT #:	EMAIL:	
CITY, STATE, ZIP:	Mt. Juliet, TN 37122				

L1473974

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	2203A72-001F	EB 3-18-22	500AMBHDP E-NAOH	Groundwater	3/18/2022 8:35:00 AM	1	Total Cyanide RCW 7/12 -01
2	2203A72-002F	East LDU	500AMBHDP E-NAOH	Groundwater	3/18/2022 9:35:00 AM	1	Total Cyanide -02
3	2203A72-003F	West LDU	500AMBHDP E-NAOH	Groundwater	3/18/2022 10:00:00 AM	1	Total Cyanide -03
4	2203A72-004H	STP-1 to EP-2 *125 HDPE	~~500HDPE~~H2 SO4	Groundwater	3/18/2022 11:00:00 AM	1	COD L2 -04
5	2203A72-004I	STP-1 to EP-2	500AMBHDP E-NAOH	Groundwater	3/18/2022 11:00:00 AM	1	Total Cyanide RCW 7/12 -05
6	2203A72-006F	DUP 3-18-22	500AMBHDP E-NAOH	Groundwater	3/18/2022	1	Total Cyanide -06 -05

*SDB 3.18.22

3/22

Sample Receipt Checklist

COC Seal Present/Intact:	Y N	If Applicable	
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	Y N	Pres.Correct/Check:	Y N
Correct bottles used:	Y N		
Sufficient volume sent:	Y N		
RAD Screen <0.5 mR/hr:	Y N		

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By: SDB	Date: 3/18/2022	Time: 2:15 PM	Received By:	Date: 03/19/22	Time: 0900
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ✓ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY
Temp of samples 2.3 BAA7 Attempt to Cool ?
Comments:

TRK# 5528 5947 9466

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203A72**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **A86607** RunNo: **86607**
Prep Date: Analysis Date: **3/21/2022** SeqNo: **3057238** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **A86607** RunNo: **86607**
Prep Date: Analysis Date: **3/21/2022** SeqNo: **3057240** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0022	0.0030	0.002000	0	110	50	150			J
Beryllium	0.0022	0.0020	0.002000	0	109	50	150			
Cadmium	0.0019	0.0020	0.002000	0	94.4	50	150			J
Chromium	0.0059	0.0060	0.006000	0	98.6	50	150			J
Cobalt	0.0068	0.0060	0.006000	0	113	50	150			
Nickel	0.0056	0.010	0.005000	0	112	50	150			J
Silver	0.0052	0.0050	0.005000	0	104	50	150			
Vanadium	0.011	0.050	0.01000	0	108	50	150			J
Zinc	0.011	0.010	0.01000	0	114	50	150			

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **A86607** RunNo: **86607**
Prep Date: Analysis Date: **3/21/2022** SeqNo: **3057242** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.53	0.0030	0.5000	0	106	85	115			
Beryllium	0.52	0.0020	0.5000	0	104	85	115			
Cadmium	0.52	0.0020	0.5000	0	104	85	115			
Chromium	0.53	0.0060	0.5000	0	105	85	115			
Cobalt	0.51	0.0060	0.5000	0	102	85	115			
Nickel	0.51	0.010	0.5000	0	102	85	115			
Silver	0.11	0.0050	0.1000	0	105	85	115			
Vanadium	0.53	0.050	0.5000	0	106	85	115			
Zinc	0.52	0.010	0.5000	0	104	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203A72**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB-66643** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **66643** RunNo: **87030**
Prep Date: **4/5/2022** Analysis Date: **4/6/2022** SeqNo: **3075587** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS-66643** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **66643** RunNo: **87030**
Prep Date: **4/5/2022** Analysis Date: **4/6/2022** SeqNo: **3075588** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0021	0.0030	0.002000	0	105	50	150			J
Beryllium	0.0020	0.0020	0.002000	0	102	50	150			
Cadmium	0.0017	0.0020	0.002000	0	86.8	50	150			J
Chromium	0.0056	0.0060	0.006000	0	92.5	50	150			J
Cobalt	0.0068	0.0060	0.006000	0	114	50	150			
Nickel	0.0034	0.010	0.005000	0	69.0	50	150			J
Silver	0.0043	0.0050	0.005000	0	86.5	50	150			J
Vanadium	0.010	0.050	0.01000	0	101	50	150			J
Zinc	0.010	0.010	0.01000	0	99.8	50	150			J

Sample ID: **LCS-66643** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **66643** RunNo: **87030**
Prep Date: **4/5/2022** Analysis Date: **4/6/2022** SeqNo: **3075589** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0030	0.5000	0	95.8	85	115			
Beryllium	0.52	0.0020	0.5000	0	103	85	115			
Cadmium	0.47	0.0020	0.5000	0	94.4	85	115			
Chromium	0.48	0.0060	0.5000	0	96.1	85	115			
Cobalt	0.46	0.0060	0.5000	0	92.4	85	115			
Nickel	0.46	0.010	0.5000	0	92.5	85	115			
Silver	0.099	0.0050	0.1000	0	98.6	85	115			
Vanadium	0.50	0.050	0.5000	0	99.5	85	115			
Zinc	0.47	0.010	0.5000	0	94.4	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203A72**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**							
Client ID: **PBW**	Batch ID: **A87332**	RunNo: **87332**							
Prep Date:	Analysis Date: **4/19/2022**	SeqNo: **3088697**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	ND	0.0060								
Nickel	ND	0.010								

Sample ID: **LLLCS**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**							
Client ID: **BatchQC**	Batch ID: **A87332**	RunNo: **87332**							
Prep Date:	Analysis Date: **4/19/2022**	SeqNo: **3088702**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	0.0060	0.0060	0.006000	0	101	50	150			
Nickel	0.0050	0.010	0.005000	0	99.7	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**							
Client ID: **LCSW**	Batch ID: **A87332**	RunNo: **87332**							
Prep Date:	Analysis Date: **4/19/2022**	SeqNo: **3088704**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	0.51	0.0060	0.5000	0	102	85	115			
Nickel	0.48	0.010	0.5000	0	96.9	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203A72**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW** Batch ID: **A86607** RunNo: **86607**
Prep Date: Analysis Date: **3/21/2022** SeqNo: **3057239** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **A86607** RunNo: **86607**
Prep Date: Analysis Date: **3/21/2022** SeqNo: **3057241** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0022	0.0020	0.002000	0	110	50	150			
Beryllium	0.0022	0.0020	0.002000	0	109	50	150			
Cadmium	0.0019	0.0020	0.002000	0	94.4	50	150			J
Chromium	0.0059	0.0060	0.006000	0	98.6	50	150			J
Cobalt	0.0068	0.0060	0.006000	0	113	50	150			
Nickel	0.0056	0.010	0.005000	0	112	50	150			J
Silver	0.0052	0.0050	0.005000	0	104	50	150			
Vanadium	0.011	0.050	0.01000	0	108	50	150			J
Zinc	0.011	0.010	0.01000	0	114	50	150			

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **A86607** RunNo: **86607**
Prep Date: Analysis Date: **3/21/2022** SeqNo: **3057243** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.53	0.0020	0.5000	0	106	85	115			
Beryllium	0.52	0.0020	0.5000	0	104	85	115			
Cadmium	0.52	0.0020	0.5000	0	104	85	115			
Chromium	0.53	0.0060	0.5000	0	105	85	115			
Cobalt	0.51	0.0060	0.5000	0	102	85	115			
Nickel	0.51	0.010	0.5000	0	102	85	115			
Silver	0.11	0.0050	0.1000	0	105	85	115			
Vanadium	0.53	0.050	0.5000	0	106	85	115			
Zinc	0.52	0.010	0.5000	0	104	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203A72**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **2203A72-001EMS** SampType: **MS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB 3-18-22** Batch ID: **A86607** RunNo: **86607**
Prep Date: Analysis Date: **3/21/2022** SeqNo: **3057272** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.52	0.0020	0.5000	0	104	70	130			
Beryllium	0.53	0.0020	0.5000	0	106	70	130			
Cadmium	0.53	0.0020	0.5000	0	106	70	130			
Chromium	0.52	0.0060	0.5000	0	104	70	130			
Cobalt	0.51	0.0060	0.5000	0	103	70	130			
Nickel	0.52	0.010	0.5000	0	104	70	130			
Silver	0.10	0.0050	0.1000	0	104	70	130			
Vanadium	0.51	0.050	0.5000	0	102	70	130			
Zinc	0.53	0.010	0.5000	0.006803	105	70	130			

Sample ID: **2203A72-001EMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB 3-18-22** Batch ID: **A86607** RunNo: **86607**
Prep Date: Analysis Date: **3/21/2022** SeqNo: **3057273** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.54	0.0020	0.5000	0	108	70	130	4.43	20	
Beryllium	0.55	0.0020	0.5000	0	110	70	130	3.74	20	
Cadmium	0.56	0.0020	0.5000	0	112	70	130	5.86	20	
Chromium	0.55	0.0060	0.5000	0	109	70	130	4.75	20	
Cobalt	0.54	0.0060	0.5000	0	109	70	130	5.80	20	
Nickel	0.55	0.010	0.5000	0	111	70	130	5.87	20	
Silver	0.11	0.0050	0.1000	0	110	70	130	5.45	20	
Vanadium	0.54	0.050	0.5000	0	108	70	130	5.51	20	
Zinc	0.57	0.010	0.5000	0.006803	113	70	130	6.47	20	

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW** Batch ID: **A87332** RunNo: **87332**
Prep Date: Analysis Date: **4/19/2022** SeqNo: **3088745** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	ND	0.0060								
Nickel	ND	0.010								

Sample ID: **LLLCS** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **A87332** RunNo: **87332**
Prep Date: Analysis Date: **4/19/2022** SeqNo: **3088746** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	0.0060	0.0060	0.006000	0	101	50	150			
Nickel	0.0050	0.010	0.005000	0	99.7	50	150			J

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203A72**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**							
Client ID: **LCSW**	Batch ID: **A87332**	RunNo: **87332**							
Prep Date:	Analysis Date: **4/19/2022**	SeqNo: **3088747**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	0.51	0.0060	0.5000	0	102	85	115			
Nickel	0.48	0.010	0.5000	0	96.9	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203A72**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**							
Client ID: **PBW**	Batch ID: **A86633**	RunNo: **86633**							
Prep Date:	Analysis Date: **3/22/2022**	SeqNo: **3058718**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**							
Client ID: **BatchQC**	Batch ID: **A86633**	RunNo: **86633**							
Prep Date:	Analysis Date: **3/22/2022**	SeqNo: **3058719**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0011	0.0010	0.001000	0	110	50	150			
Arsenic	0.0010	0.0010	0.001000	0	102	50	150			
Lead	0.00052	0.00050	0.0005000	0	104	50	150			
Selenium	0.0012	0.0010	0.001000	0	117	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**							
Client ID: **LCSW**	Batch ID: **A86633**	RunNo: **86633**							
Prep Date:	Analysis Date: **3/22/2022**	SeqNo: **3058720**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	98.7	85	115			
Arsenic	0.026	0.0010	0.02500	0	102	85	115			
Lead	0.013	0.00050	0.01250	0	103	85	115			
Selenium	0.026	0.0010	0.02500	0	104	85	115			

Sample ID: **MB-66341**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**							
Client ID: **PBW**	Batch ID: **66341**	RunNo: **86680**							
Prep Date: **3/22/2022**	Analysis Date: **3/23/2022**	SeqNo: **3060282**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **MSLCS-66341**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**							
Client ID: **LCSW**	Batch ID: **66341**	RunNo: **86680**							
Prep Date: **3/22/2022**	Analysis Date: **3/23/2022**	SeqNo: **3060284**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203A72**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **MSLCS-66341** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **66341** RunNo: **86680**
Prep Date: **3/22/2022** Analysis Date: **3/23/2022** SeqNo: **3060284** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	102	85	115			
Arsenic	0.026	0.0010	0.02500	0	103	85	115			
Lead	0.013	0.00050	0.01250	0	102	85	115			
Selenium	0.026	0.0010	0.02500	0	105	85	115			

Sample ID: **MSLLLCS-66341** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **66341** RunNo: **86680**
Prep Date: **3/22/2022** Analysis Date: **3/23/2022** SeqNo: **3060285** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00088	0.0010	0.001000	0	88.4	50	150			J
Arsenic	0.0011	0.0010	0.001000	0	105	50	150			
Lead	0.00052	0.00050	0.0005000	0	104	50	150			
Selenium	0.00078	0.0010	0.001000	0	77.9	50	150			J

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203A72**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **B86624** RunNo: **86624**
Prep Date: Analysis Date: **3/21/2022** SeqNo: **3058031** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL** SampType: **LCSLL** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **B86624** RunNo: **86624**
Prep Date: Analysis Date: **3/21/2022** SeqNo: **3058032** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0010	0.0010	0.001000	0	104	50	150			
Arsenic	0.0011	0.0010	0.001000	0	110	50	150			
Lead	0.00054	0.00050	0.0005000	0	108	50	150			
Selenium	0.0012	0.0010	0.001000	0	117	50	150			

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **B86624** RunNo: **86624**
Prep Date: Analysis Date: **3/21/2022** SeqNo: **3058033** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	102	85	115			
Arsenic	0.027	0.0010	0.02500	0	108	85	115			
Lead	0.014	0.00050	0.01250	0	108	85	115			
Selenium	0.025	0.0010	0.02500	0	101	85	115			

Sample ID: **2203A72-004EMSLL** SampType: **MS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **STP-1 to EP-2** Batch ID: **B86624** RunNo: **86624**
Prep Date: Analysis Date: **3/21/2022** SeqNo: **3058093** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	104	70	130			
Arsenic	0.033	0.0010	0.02500	0.002757	119	70	130			
Lead	0.011	0.00050	0.01250	0	89.0	70	130			
Selenium	0.028	0.0010	0.02500	0.0008429	108	70	130			

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **A86633** RunNo: **86633**
Prep Date: Analysis Date: **3/22/2022** SeqNo: **3058721** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203A72**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A86633**	RunNo: **86633**
Prep Date:	Analysis Date: **3/22/2022**	SeqNo: **3058721** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A86633**	RunNo: **86633**
Prep Date:	Analysis Date: **3/22/2022**	SeqNo: **3058722** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0011	0.0010	0.001000	0	110	50	150			
Arsenic	0.0010	0.0010	0.001000	0	102	50	150			
Lead	0.00052	0.00050	0.0005000	0	104	50	150			
Selenium	0.0012	0.0010	0.001000	0	117	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A86633**	RunNo: **86633**
Prep Date:	Analysis Date: **3/22/2022**	SeqNo: **3058723** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	98.7	85	115			
Arsenic	0.026	0.0010	0.02500	0	102	85	115			
Lead	0.013	0.00050	0.01250	0	103	85	115			
Selenium	0.026	0.0010	0.02500	0	104	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203A72**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB-66396**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **PBW**	Batch ID: **66396**	RunNo: **86753**							
Prep Date: **3/25/2022**	Analysis Date: **3/25/2022**	SeqNo: **3063465**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00014	0.00020								J

Sample ID: **LCS-66396**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **LCSW**	Batch ID: **66396**	RunNo: **86753**							
Prep Date: **3/25/2022**	Analysis Date: **3/25/2022**	SeqNo: **3063467**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	103	85	115			

Sample ID: **LCSLL-66396**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **BatchQC**	Batch ID: **66396**	RunNo: **86753**							
Prep Date: **3/25/2022**	Analysis Date: **3/25/2022**	SeqNo: **3063514**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00018	0.00020	0.0001500	0	122	50	150			J

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203A72**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB-66262** SampType: **MBLK** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW** Batch ID: **66262** RunNo: **86618**
Prep Date: **3/21/2022** Analysis Date: **3/21/2022** SeqNo: **3057942** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **MB-66262** SampType: **MBLK** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW** Batch ID: **66262** RunNo: **86618**
Prep Date: **3/21/2022** Analysis Date: **3/21/2022** SeqNo: **3057944** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-66262** SampType: **LCS** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW** Batch ID: **66262** RunNo: **86618**
Prep Date: **3/21/2022** Analysis Date: **3/21/2022** SeqNo: **3057950** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.10	0.010	0.1000	0	102	70	130			

Sample ID: **LCSD-66262** SampType: **LCSD** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSS02** Batch ID: **66262** RunNo: **86618**
Prep Date: **3/21/2022** Analysis Date: **3/21/2022** SeqNo: **3057952** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.099	0.010	0.1000	0	98.6	70	130	3.56	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203A72**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB-66372**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **PBW**	Batch ID: **66372**	RunNo: **86806**
Prep Date: **3/24/2022**	Analysis Date: **3/28/2022**	SeqNo: **3065857** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.064								
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.041		0.03750		108	42.2	138			

Sample ID: **LCS-66372**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSW**	Batch ID: **66372**	RunNo: **86806**
Prep Date: **3/24/2022**	Analysis Date: **3/28/2022**	SeqNo: **3065858** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.12	0.064	0.1875	0	65.1	31.7	75.4			
Surr: DNOP	0.021		0.01875		114	42.2	138			

Sample ID: **LCSD-66372**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02**	Batch ID: **66372**	RunNo: **86806**
Prep Date: **3/24/2022**	Analysis Date: **3/28/2022**	SeqNo: **3065859** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.10	0.064	0.1875	0	55.2	31.7	75.4	16.4	20	
Surr: DNOP	0.019		0.01875		101	42.2	138	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203A72**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW** Batch ID: **R86666** RunNo: **86666**
Prep Date: Analysis Date: **3/22/2022** SeqNo: **3059842** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	92.9	70	130			
Toluene	21	1.0	20.00	0	106	70	130			
Chlorobenzene	22	1.0	20.00	0	109	70	130			
1,1-Dichloroethene	18	1.0	20.00	0	91.0	70	130			
Trichloroethene (TCE)	17	1.0	20.00	0	86.8	70	130			
Surr: 1,2-Dichloroethane-d4	9.6		10.00		95.6	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		98.2	70	130			
Surr: Dibromofluoromethane	10		10.00		99.6	70	130			
Surr: Toluene-d8	10		10.00		105	70	130			

Sample ID: **2203a72-002ams** SampType: **MS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **East LDU** Batch ID: **R86666** RunNo: **86666**
Prep Date: Analysis Date: **3/22/2022** SeqNo: **3059859** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	340	10	200.0	145.6	95.6	70	130			
Toluene	230	10	200.0	16.65	108	70	130			
Chlorobenzene	210	10	200.0	0	107	70	130			
1,1-Dichloroethene	180	10	200.0	0	88.7	70	130			
Trichloroethene (TCE)	170	10	200.0	0	82.7	70	130			
Surr: 1,2-Dichloroethane-d4	93		100.0		93.1	70	130			
Surr: 4-Bromofluorobenzene	99		100.0		98.9	70	130			
Surr: Dibromofluoromethane	95		100.0		94.7	70	130			
Surr: Toluene-d8	100		100.0		102	70	130			

Sample ID: **2203a72-002amsd** SampType: **MSD** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **East LDU** Batch ID: **R86666** RunNo: **86666**
Prep Date: Analysis Date: **3/22/2022** SeqNo: **3059860** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	300	10	200.0	145.6	77.1	70	130	11.7	20	
Toluene	200	10	200.0	16.65	93.5	70	130	12.9	20	
Chlorobenzene	190	10	200.0	0	97.1	70	130	9.45	20	
1,1-Dichloroethene	160	10	200.0	0	79.1	70	130	11.5	20	
Trichloroethene (TCE)	140	10	200.0	0	71.4	70	130	14.7	20	
Surr: 1,2-Dichloroethane-d4	93		100.0		93.1	70	130	0	0	
Surr: 4-Bromofluorobenzene	99		100.0		98.6	70	130	0	0	
Surr: Dibromofluoromethane	90		100.0		90.1	70	130	0	0	
Surr: Toluene-d8	99		100.0		99.3	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203A72**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R86666**	RunNo: **86666**
Prep Date:	Analysis Date: **3/22/2022**	SeqNo: **3059870** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	0.66	3.0								J
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	8.8		10.00		88.2	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	9.3		10.00		92.6	70	130			
Surr: Toluene-d8	10		10.00		104	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203A72**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **lcs-66282** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW** Batch ID: **66282** RunNo: **86693**
Prep Date: **3/21/2022** Analysis Date: **3/23/2022** SeqNo: **3061248** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	52	5.0	100.0	0	51.8	15	87.6			
Phenol	75	5.0	200.0	0	37.4	16.8	70.5			
Surr: 2-Fluorophenol	98		200.0		49.1	29.4	87.7			
Surr: Phenol-d5	74		200.0		37.0	28.5	64.7			
Surr: 2,4,6-Tribromophenol	130		200.0		65.2	18.6	129			
Surr: Nitrobenzene-d5	62		100.0		61.9	36.9	103			
Surr: 2-Fluorobiphenyl	55		100.0		55.4	38.1	99.9			
Surr: 4-Terphenyl-d14	81		100.0		81.0	48	155			

Sample ID: **lcsd-66282** SampType: **LCSD** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02** Batch ID: **66282** RunNo: **86693**
Prep Date: **3/21/2022** Analysis Date: **3/23/2022** SeqNo: **3061249** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	58	5.0	100.0	0	58.3	15	87.6	11.8	30.4	
Phenol	79	5.0	200.0	0	39.4	16.8	70.5	5.11	37.2	
Surr: 2-Fluorophenol	100		200.0		52.0	29.4	87.7	0	0	
Surr: Phenol-d5	79		200.0		39.4	28.5	64.7	0	0	
Surr: 2,4,6-Tribromophenol	130		200.0		67.5	18.6	129	0	0	
Surr: Nitrobenzene-d5	65		100.0		64.7	36.9	103	0	0	
Surr: 2-Fluorobiphenyl	61		100.0		60.6	38.1	99.9	0	0	
Surr: 4-Terphenyl-d14	97		100.0		96.5	48	155	0	0	

Sample ID: **mb-66282** SampType: **MBLK** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW** Batch ID: **66282** RunNo: **86737**
Prep Date: **3/21/2022** Analysis Date: **3/24/2022** SeqNo: **3062562** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	5.0								
2,4-Dinitrophenol	ND	5.0								
2-Methylphenol	ND	5.0								
3+4-Methylphenol	ND	5.0								
Phenol	ND	5.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203A72**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **mb-66282** SampType: **MBLK** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW** Batch ID: **66282** RunNo: **86737**
Prep Date: **3/21/2022** Analysis Date: **3/24/2022** SeqNo: **3062562** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Pyridine	ND	10								
2,4,6-Trichlorophenol	ND	5.0								
Surr: 2-Fluorophenol	86		200.0		42.9	29.4	87.7			
Surr: Phenol-d5	70		200.0		34.9	28.5	64.7			
Surr: 2,4,6-Tribromophenol	100		200.0		51.4	18.6	129			
Surr: Nitrobenzene-d5	50		100.0		49.9	36.9	103			
Surr: 2-Fluorobiphenyl	47		100.0		46.7	38.1	99.9			
Surr: 4-Terphenyl-d14	80		100.0		79.7	48	155			

Sample ID: **lcs-66355** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW** Batch ID: **66355** RunNo: **86930**
Prep Date: **3/23/2022** Analysis Date: **4/1/2022** SeqNo: **3071399** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	53	5.0	100.0	0	52.9	15	87.6			
Phenol	82	5.0	200.0	0	41.1	16.8	70.5			
Surr: 2-Fluorophenol	110		200.0		52.9	29.4	87.7			
Surr: Phenol-d5	82		200.0		41.1	28.5	64.7			
Surr: 2,4,6-Tribromophenol	110		200.0		57.4	18.6	129			
Surr: Nitrobenzene-d5	65		100.0		65.2	36.9	103			
Surr: 2-Fluorobiphenyl	61		100.0		60.7	38.1	99.9			
Surr: 4-Terphenyl-d14	88		100.0		88.5	48	155			

Sample ID: **lcsd-66355** SampType: **LCSD** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02** Batch ID: **66355** RunNo: **86930**
Prep Date: **3/23/2022** Analysis Date: **4/1/2022** SeqNo: **3071400** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	47	5.0	100.0	0	47.5	15	87.6	10.8	30.4	
Phenol	66	5.0	200.0	0	33.1	16.8	70.5	21.7	37.2	
Surr: 2-Fluorophenol	81		200.0		40.3	29.4	87.7	0	0	
Surr: Phenol-d5	67		200.0		33.7	28.5	64.7	0	0	
Surr: 2,4,6-Tribromophenol	120		200.0		59.1	18.6	129	0	0	
Surr: Nitrobenzene-d5	55		100.0		55.4	36.9	103	0	0	
Surr: 2-Fluorobiphenyl	50		100.0		50.0	38.1	99.9	0	0	
Surr: 4-Terphenyl-d14	90		100.0		89.7	48	155	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203A72**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **mb-66355**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**							
Client ID: **PBW**	Batch ID: **66355**	RunNo: **87124**							
Prep Date: **3/23/2022**	Analysis Date: **4/7/2022**	SeqNo: **3080303**	Units: **µg/L**						

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	5.0								
2,4-Dinitrophenol	ND	20								
2-Methylphenol	ND	5.0								
3+4-Methylphenol	ND	5.0								
Phenol	ND	5.0								
Pyridine	ND	10								
2,4,6-Trichlorophenol	ND	5.0								
Surr: 2-Fluorophenol	71		200.0		35.6	29.4	87.7			
Surr: Phenol-d5	100		200.0		50.4	28.5	64.7			
Surr: 2,4,6-Tribromophenol	46		200.0		23.0	18.6	129			
Surr: Nitrobenzene-d5	65		100.0		65.4	36.9	103			
Surr: 2-Fluorobiphenyl	62		100.0		62.0	38.1	99.9			
Surr: 4-Terphenyl-d14	89		100.0		89.2	48	155			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203A72**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **mb-66282**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**							
Client ID: **PBW**	Batch ID: **R86694**	RunNo: **86694**							
Prep Date:	Analysis Date: **3/23/2022**	SeqNo: **3061263**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.10								
2-Methylnaphthalene	ND	0.10								
Acenaphthene	ND	0.10								
Fluorene	ND	0.10								
Phenanthrene	ND	0.10								
Anthracene	ND	0.10								
Fluoranthene	ND	0.20								
Pyrene	ND	0.20								
Benz(a)anthracene	ND	0.10								
Chrysene	ND	0.10								
Benzo(b)fluoranthene	ND	0.10								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	61		100.0		61.1	31.6	100			
Surr: 2,4,6-Tribromophenol	85		200.0		42.7	22	101			
Surr: 2-Fluorobiphenyl	57		100.0		57.5	26.7	90.1			
Surr: 4-Terphenyl-d14	98		100.0		98.4	72.3	147			

Sample ID: **lcs-66282-lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**							
Client ID: **LCSW**	Batch ID: **R86694**	RunNo: **86694**							
Prep Date:	Analysis Date: **3/23/2022**	SeqNo: **3061264**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.72	0.10	2.000	0	36.0	20.2	48.4			
Naphthalene	1.1	0.10	2.000	0	54.0	21.3	79.9			
1-Methylnaphthalene	1.1	0.10	2.000	0	53.0	22.2	80.3			
2-Methylnaphthalene	1.0	0.10	2.000	0	52.0	20.6	80.1			
Acenaphthene	1.2	0.10	2.000	0	62.0	29.8	82.7			
Fluorene	1.3	0.10	2.000	0	66.0	33.3	86			
Phenanthrene	1.4	0.10	2.000	0	72.0	38.2	93.9			
Anthracene	1.5	0.10	2.000	0	74.0	41.1	95.6			
Fluoranthene	1.7	0.20	2.000	0	87.0	52.9	123			
Pyrene	1.7	0.20	2.000	0	84.0	51	113			
Benz(a)anthracene	2.0	0.10	2.000	0	101	51	147			
Chrysene	1.8	0.10	2.000	0	89.0	55.3	115			
Benzo(b)fluoranthene	1.9	0.10	2.000	0	95.0	44.4	136			
Indeno(1,2,3-cd)pyrene	2.3	0.30	2.000	0	114	31.4	165			
Surr: Nitrobenzene-d5	67		100.0		67.2	31.6	100			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203A72**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **lcs-66282-lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **R86694**	RunNo: **86694**
Prep Date:	Analysis Date: **3/23/2022**	SeqNo: **3061264** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	91		200.0		45.6	22	101			
Surr: 2-Fluorobiphenyl	65		100.0		65.1	26.7	90.1			
Surr: 4-Terphenyl-d14	92		100.0		92.0	72.3	147			

Sample ID: **lcsd-66282-lf**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02**	Batch ID: **R86694**	RunNo: **86694**
Prep Date:	Analysis Date: **3/23/2022**	SeqNo: **3061265** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.70	0.10	2.000	0	35.0	20.2	48.4	2.82	30.1	
Naphthalene	1.1	0.10	2.000	0	53.0	21.3	79.9	1.87	25.6	
1-Methylnaphthalene	1.1	0.10	2.000	0	53.0	22.2	80.3	0	25	
2-Methylnaphthalene	1.0	0.10	2.000	0	52.0	20.6	80.1	0	25	
Acenaphthene	1.2	0.10	2.000	0	61.0	29.8	82.7	1.63	27.8	
Fluorene	1.3	0.10	2.000	0	66.0	33.3	86	0	26.4	
Phenanthrene	1.4	0.10	2.000	0	72.0	38.2	93.9	0	27.9	
Anthracene	1.5	0.10	2.000	0	76.0	41.1	95.6	2.67	25.6	
Fluoranthene	1.8	0.20	2.000	0	90.0	52.9	123	3.39	22.8	
Pyrene	1.7	0.20	2.000	0	84.0	51	113	0	20	
Benz(a)anthracene	2.1	0.10	2.000	0	103	51	147	1.96	24.1	
Chrysene	1.8	0.10	2.000	0	88.0	55.3	115	1.13	20	
Benzo(b)fluoranthene	2.0	0.10	2.000	0	98.0	44.4	136	3.11	24.5	
Indeno(1,2,3-cd)pyrene	2.3	0.30	2.000	0	113	31.4	165	0.881	21.1	
Surr: Nitrobenzene-d5	66		100.0		66.5	31.6	100	0	0	
Surr: 2,4,6-Tribromophenol	90		200.0		44.8	22	101	0	0	
Surr: 2-Fluorobiphenyl	64		100.0		63.6	26.7	90.1	0	0	
Surr: 4-Terphenyl-d14	93		100.0		92.6	72.3	147	0	0	

Sample ID: **mb-66355**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **R86800**	RunNo: **86800**
Prep Date:	Analysis Date: **3/28/2022**	SeqNo: **3065215** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.10								
2-Methylnaphthalene	ND	0.10								
Acenaphthene	ND	0.10								
Fluorene	ND	0.10								
Phenanthrene	ND	0.10								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203A72**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **mb-66355**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**							
Client ID: **PBW**	Batch ID: **R86800**	RunNo: **86800**							
Prep Date:	Analysis Date: **3/28/2022**	SeqNo: **3065215**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Anthracene	ND	0.10								
Fluoranthene	ND	0.20								
Pyrene	ND	0.20								
Benz(a)anthracene	ND	0.10								
Chrysene	ND	0.10								
Benzo(b)fluoranthene	ND	0.10								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	54		100.0		54.2	31.6	100			
Surr: 2,4,6-Tribromophenol	27		200.0		13.7	22	101			S
Surr: 2-Fluorobiphenyl	53		100.0		52.9	26.7	90.1			
Surr: 4-Terphenyl-d14	100		100.0		101	72.3	147			E

Sample ID: **lcs-66355-lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**							
Client ID: **LCSW**	Batch ID: **R86800**	RunNo: **86800**							
Prep Date:	Analysis Date: **3/28/2022**	SeqNo: **3065216**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.62	0.10	2.000	0	31.0	20.2	48.4			
Naphthalene	0.98	0.10	2.000	0	49.0	21.3	79.9			
1-Methylnaphthalene	0.96	0.10	2.000	0	48.0	22.2	80.3			
2-Methylnaphthalene	0.94	0.10	2.000	0	47.0	20.6	80.1			
Acenaphthene	1.1	0.10	2.000	0	57.0	29.8	82.7			
Fluorene	1.2	0.10	2.000	0	60.0	33.3	86			
Phenanthrene	1.3	0.10	2.000	0	67.0	38.2	93.9			
Anthracene	1.4	0.10	2.000	0	71.0	41.1	95.6			
Fluoranthene	1.7	0.20	2.000	0	83.0	52.9	123			
Pyrene	1.6	0.20	2.000	0	81.0	51	113			
Benz(a)anthracene	1.8	0.10	2.000	0	92.0	51	147			
Chrysene	1.7	0.10	2.000	0	86.0	55.3	115			
Benzo(b)fluoranthene	1.8	0.10	2.000	0	90.0	44.4	136			
Indeno(1,2,3-cd)pyrene	1.9	0.30	2.000	0	95.0	31.4	165			
Surr: Nitrobenzene-d5	61		100.0		60.8	31.6	100			
Surr: 2,4,6-Tribromophenol	84		200.0		42.2	22	101			
Surr: 2-Fluorobiphenyl	60		100.0		59.6	26.7	90.1			
Surr: 4-Terphenyl-d14	92		100.0		91.8	72.3	147			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203A72**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **lcsd-66355-lf**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**							
Client ID: **LCSS02**	Batch ID: **R86800**	RunNo: **86800**							
Prep Date:	Analysis Date: **3/28/2022**	SeqNo: **3065217**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.70	0.10	2.000	0	35.0	20.2	48.4	12.1	30.1	
Naphthalene	1.1	0.10	2.000	0	57.0	21.3	79.9	15.1	25.6	
1-Methylnaphthalene	1.1	0.10	2.000	0	56.0	22.2	80.3	15.4	25	
2-Methylnaphthalene	1.1	0.10	2.000	0	55.0	20.6	80.1	15.7	25	
Acenaphthene	1.3	0.10	2.000	0	63.0	29.8	82.7	10.0	27.8	
Fluorene	1.3	0.10	2.000	0	65.0	33.3	86	8.00	26.4	
Phenanthrene	1.4	0.10	2.000	0	69.0	38.2	93.9	2.94	27.9	
Anthracene	1.4	0.10	2.000	0	72.0	41.1	95.6	1.40	25.6	
Fluoranthene	1.6	0.20	2.000	0	79.0	52.9	123	4.94	22.8	
Pyrene	1.6	0.20	2.000	0	82.0	51	113	1.23	20	
Benz(a)anthracene	1.8	0.10	2.000	0	90.0	51	147	2.20	24.1	
Chrysene	1.7	0.10	2.000	0	87.0	55.3	115	1.16	20	
Benzo(b)fluoranthene	1.7	0.10	2.000	0	87.0	44.4	136	3.39	24.5	
Indeno(1,2,3-cd)pyrene	2.0	0.30	2.000	0	100	31.4	165	5.13	21.1	
Surr: Nitrobenzene-d5	67		100.0		66.8	31.6	100	0	0	
Surr: 2,4,6-Tribromophenol	84		200.0		42.0	22	101	0	0	
Surr: 2-Fluorobiphenyl	61		100.0		61.2	26.7	90.1	0	0	
Surr: 4-Terphenyl-d14	95		100.0		95.0	72.3	147	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203A72**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB-66272**	SampType: **MBLK**	TestCode: **SM5210B: BOD**							
Client ID: **PBW**	Batch ID: **66272**	RunNo: **86704**							
Prep Date: **3/18/2022**	Analysis Date: **3/23/2022**	SeqNo: **3061424**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	ND	2.0								H

Sample ID: **LCS-66272**	SampType: **LCS**	TestCode: **SM5210B: BOD**							
Client ID: **LCSW**	Batch ID: **66272**	RunNo: **86704**							
Prep Date: **3/18/2022**	Analysis Date: **3/23/2022**	SeqNo: **3061425**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	169	2.0	198.0	0	85.4	84.6	115.4			H

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203A72**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB-66276**	SampType: **MBLK**	TestCode: **SM 9223B Fecal Indicator: E. coli MPN**							
Client ID: **PBW**	Batch ID: **66276**	RunNo: **86591**							
Prep Date: **3/18/2022**	Analysis Date: **3/19/2022**	SeqNo: **3056252**	Units: **MPN/100mL**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
E. Coli	<1	1.000								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203A72**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **2.5ug lcs gro** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW** Batch ID: **G86666** RunNo: **86666**
Prep Date: Analysis Date: **3/22/2022** SeqNo: **3059872** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.47	0.050	0.5000	0	94.5	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.1	70	130			

Sample ID: **2203a72-003ams** SampType: **MS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **West LDU** Batch ID: **G86666** RunNo: **86666**
Prep Date: Analysis Date: **3/22/2022** SeqNo: **3059876** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.76	0.050	0.5000	0.2834	96.0	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		98.4	70	130			

Sample ID: **2203a72-003amsd** SampType: **MSD** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **West LDU** Batch ID: **G86666** RunNo: **86666**
Prep Date: Analysis Date: **3/22/2022** SeqNo: **3059877** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.77	0.050	0.5000	0.2834	98.2	70	130	1.43	20	
Surr: 4-Bromofluorobenzene	11		10.00		106	70	130	0	0	

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW** Batch ID: **G86666** RunNo: **86666**
Prep Date: Analysis Date: **3/22/2022** SeqNo: **3059882** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.040	0.050								J
Surr: 4-Bromofluorobenzene	11		10.00		105	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: Marathon Work Order Number: 2203A72 RcptNo: 1

Received By: Juan Rojas 3/18/2022 1:50:00 PM

Completed By: Desiree Dominguez 3/18/2022 2:01:55 PM

Reviewed By: CNL 3/18/22 @ 1455

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☑ No ☐ NA ☐
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: 10 5 (<2 or >12 unless noted)

Adjusted? NO

Checked by: JN 3/18/22

Labeled by: SCC 3/18/22.

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.1	Good	Yes			
2	2.3	Good	Yes			
3	2.4	Good	Yes			

Released to Imaging: 4/21/2023 9:40:26 AM

Released to Imaging: 4/21/2023 9:40:26 AM

Chain-of-Custody Record

Client: Marathon Gallup Refinery

Mailing Address: 92 Giant Crossing Road
Jamestown, NM,87347

Phone #: 808-640-1823

Email or Fax#:

QA/QC Package:
Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
NELAC ☐ Other

EDD (Type)

Turn-Around Time:
X Standard Rush

Project Name:
2022 GW Sampling 1st Quarter

Project #: **697-080-001**

Project Manager:
Lesli Alexander/Mackensie Swift

Sampler: Hilario Trejo

On Ice: ☒ Yes ☐ No

# of Coolers: 3

Cooler Temp(including CF): See Remarks

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2203A72	Analysis Request: See Analyte List	8260B: VOC	8270C: SVOC	8270C SIM: PAH, 1,4 Dioxane	8015: TPH GRO/DRO/MRO	E200.7: Metals	E200.7: Dissolved Metals	E245.1 Mercury	E504.1: EDB	E335.4: Cyanide Subbed		537.1: PFAS	SM 5201B: BOD	410.4: COD	SM9223B E. Coli
3/18	8:35		EB-3-18-22	13		-001	X	X	X	X	X	X	X	X	X	X					
3/18	9:35		EASTCOU	13		-002	X	X	X	X	X	X	X	X	X	X					
3/18	10:00		WEST COU	13		-003	X	X	X	X	X	X	X	X	X	X					
3/18	11:00		STP-2 to EP-2	18		-004	X	X	X	X	X	X	X	X	X	X			X	X	X
3/18	11:00		FB-3-18-22	2		-005		X													
3/18	—		DUP-3-18-22	13		-006	X	X	X	X	X	X	X	X	X	X					
			TRIP Blank DUP 3-18-22			-007															

	Time	Relinquished by	Received by	Via	Date	Time
3/18	12:00	Hilario Trejo				
	Time:	Relinquished by:	Received by:	Via: courier	Date 3/18/22	Time 13:50

2-1-0=2.1
2-3-0=2.3
2-4-0=2.4

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Received by OCD: 4/21/2023 9:21:57 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

April 22, 2022

Lesli Alexander

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX (505) 632-3911

RE: 2022 GW Sampling 1st Qtr OrderNo.: 2203B95

Dear Lesli Alexander:

Hall Environmental Analysis Laboratory received 10 sample(s) on 3/23/2022 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued April 14, 2022.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **2203B95**
Date: **4/22/2022**

CLIENT: Marathon
Project: 2022 GW Sampling 1st Qtr

Analytical Notes Regarding the Equipment blank for the 8270 SIM analysis.
The Chrysene d12 internal standard area count for only the equipment blank was slightly out of range. Insufficent sample extract remained for reanalysis. This sample is nondetect for all PAH compounds.

Analytical Notes Regarding EPA Method 8270:
"S" flagged surrogates denote low surrogate recoveries due to matrix interferences/sample dilution.
1-methylphthalene was reported by EPA Method 8270 instead of EPA Method 8270SIMs becuase of its elevated concentration for sample NAPIS-2

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-22-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022 8:15:00 AM
Lab ID: 2203B95-001A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	3/24/2022 1:25:27 PM	R86734
Toluene	ND	0.20	1.0		µg/L	1	3/24/2022 1:25:27 PM	R86734
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/24/2022 1:25:27 PM	R86734
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/24/2022 1:25:27 PM	R86734
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/24/2022 1:25:27 PM	R86734
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/24/2022 1:25:27 PM	R86734
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	3/24/2022 1:25:27 PM	R86734
Acetone	ND	2.5	10		µg/L	1	3/24/2022 1:25:27 PM	R86734
Bromomethane	ND	0.85	3.0		µg/L	1	3/24/2022 1:25:27 PM	R86734
2-Butanone	6.1	2.0	10	J	µg/L	1	3/24/2022 1:25:27 PM	R86734
Carbon disulfide	ND	0.59	10		µg/L	1	3/24/2022 1:25:27 PM	R86734
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/24/2022 1:25:27 PM	R86734
Chloroform	ND	0.13	1.0		µg/L	1	3/24/2022 1:25:27 PM	R86734
Chloromethane	0.88	0.41	3.0	J	µg/L	1	3/24/2022 1:25:27 PM	R86734
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/24/2022 1:25:27 PM	R86734
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/24/2022 1:25:27 PM	R86734
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/24/2022 1:25:27 PM	R86734
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/24/2022 1:25:27 PM	R86734
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/24/2022 1:25:27 PM	R86734
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/24/2022 1:25:27 PM	R86734
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/24/2022 1:25:27 PM	R86734
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/24/2022 1:25:27 PM	R86734
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/24/2022 1:25:27 PM	R86734
Styrene	ND	0.14	1.0		µg/L	1	3/24/2022 1:25:27 PM	R86734
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/24/2022 1:25:27 PM	R86734
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/24/2022 1:25:27 PM	R86734
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/24/2022 1:25:27 PM	R86734
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/24/2022 1:25:27 PM	R86734
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/24/2022 1:25:27 PM	R86734
Surr: 1,2-Dichloroethane-d4	88.9	0	70-130		%Rec	1	3/24/2022 1:25:27 PM	R86734
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	3/24/2022 1:25:27 PM	R86734
Surr: Dibromofluoromethane	95.9	0	70-130		%Rec	1	3/24/2022 1:25:27 PM	R86734
Surr: Toluene-d8	102	0	70-130		%Rec	1	3/24/2022 1:25:27 PM	R86734
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.034	0.028	0.050	J	mg/L	1	3/24/2022 1:25:27 PM	G86734
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	3/24/2022 1:25:27 PM	G86734

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-22-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022 8:15:00 AM
Lab ID: 2203B95-001B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0035	0.0095		µg/L	1	3/29/2022 12:37:55 PM	66393

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-22-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022 8:15:00 AM
Lab ID: 2203B95-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.026	0.016	0.064	J	mg/L	1	3/28/2022 3:38:53 PM	66372
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/28/2022 3:38:53 PM	66372
Surr: DNOP	114	0	42.2-138		%Rec	1	3/28/2022 3:38:53 PM	66372
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	1.1	20		µg/L	1	4/2/2022 6:49:35 AM	66355
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	4/2/2022 6:49:35 AM	66355
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	4/2/2022 6:49:35 AM	66355
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	4/2/2022 6:49:35 AM	66355
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	4/2/2022 6:49:35 AM	66355
Diethyl phthalate	ND	3.9	10		µg/L	1	4/2/2022 6:49:35 AM	66355
Dimethyl phthalate	ND	2.0	10		µg/L	1	4/2/2022 6:49:35 AM	66355
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	4/2/2022 6:49:35 AM	66355
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	4/2/2022 6:49:35 AM	66355
2-Methylphenol	ND	0.51	5.0		µg/L	1	4/2/2022 6:49:35 AM	66355
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	4/2/2022 6:49:35 AM	66355
Phenol	ND	0.33	5.0		µg/L	1	4/2/2022 6:49:35 AM	66355
Pyridine	ND	10	10		µg/L	1	4/2/2022 6:49:35 AM	66355
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	4/2/2022 6:49:35 AM	66355
Surr: 2-Fluorophenol	46.1	0	29.4-87.7		%Rec	1	4/2/2022 6:49:35 AM	66355
Surr: Phenol-d5	35.1	0	28.5-64.7		%Rec	1	4/2/2022 6:49:35 AM	66355
Surr: 2,4,6-Tribromophenol	51.5	0	18.6-129		%Rec	1	4/2/2022 6:49:35 AM	66355
Surr: Nitrobenzene-d5	57.4	0	36.9-103		%Rec	1	4/2/2022 6:49:35 AM	66355
Surr: 2-Fluorobiphenyl	56.3	0	38.1-99.9		%Rec	1	4/2/2022 6:49:35 AM	66355
Surr: 4-Terphenyl-d14	90.7	0	48-155		%Rec	1	4/2/2022 6:49:35 AM	66355
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.048	1.0		µg/L	1	3/28/2022 5:09:00 PM	R86800
Naphthalene	ND	0.034	0.10		µg/L	1	3/28/2022 5:09:00 PM	R86800
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/28/2022 5:09:00 PM	R86800
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/28/2022 5:09:00 PM	R86800
Acenaphthene	ND	0.031	0.10		µg/L	1	3/28/2022 5:09:00 PM	R86800
Fluorene	ND	0.031	0.10		µg/L	1	3/28/2022 5:09:00 PM	R86800
Phenanthrene	ND	0.057	0.10		µg/L	1	3/28/2022 5:09:00 PM	R86800
Anthracene	ND	0.034	0.10		µg/L	1	3/28/2022 5:09:00 PM	R86800
Fluoranthene	ND	0.10	0.20		µg/L	1	3/28/2022 5:09:00 PM	R86800
Pyrene	ND	0.16	0.20		µg/L	1	3/28/2022 5:09:00 PM	R86800
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/28/2022 5:09:00 PM	R86800
Chrysene	ND	0.024	0.10		µg/L	1	3/28/2022 5:09:00 PM	R86800
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/28/2022 5:09:00 PM	R86800
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/28/2022 5:09:00 PM	R86800

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Estimated value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-22-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022 8:15:00 AM
Lab ID: 2203B95-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	56.5	0	31.6-100		%Rec	1	3/28/2022 5:09:00 PM	R86800
Surr: 2-Fluorobiphenyl	55.8	0	26.7-90.1		%Rec	1	3/28/2022 5:09:00 PM	R86800
Surr: 4-Terphenyl-d14	104	0	72.3-147	E	%Rec	1	3/28/2022 5:09:00 PM	R86800

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-22-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022 8:15:00 AM
Lab ID: 2203B95-001D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	ND	0.0016	0.0030		mg/L	1	4/6/2022 2:17:36 PM	66643
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 2:17:36 PM	66643
Cadmium	ND	0.0015	0.0020		mg/L	1	4/6/2022 2:17:36 PM	66643
Chromium	ND	0.0021	0.0060		mg/L	1	4/6/2022 2:17:36 PM	66643
Cobalt	ND	0.0024	0.0060		mg/L	1	4/6/2022 2:17:36 PM	66643
Nickel	ND	0.0033	0.010		mg/L	1	4/6/2022 2:17:36 PM	66643
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 2:17:36 PM	66643
Vanadium	ND	0.0024	0.050		mg/L	1	4/6/2022 2:17:36 PM	66643
Zinc	ND	0.0064	0.010		mg/L	1	4/6/2022 2:17:36 PM	66643
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/29/2022 12:46:19 PM	66440
Arsenic	ND	0.00013	0.0010		mg/L	1	3/29/2022 12:46:19 PM	66440
Lead	0.00027	0.000061	0.00050	J	mg/L	1	3/29/2022 12:46:19 PM	66440
Selenium	ND	0.00037	0.0010		mg/L	1	3/29/2022 12:46:19 PM	66440
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/25/2022 3:04:05 PM	66396

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-22-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022 8:15:00 AM
Lab ID: 2203B95-001E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	ND	0.0011	0.0020		mg/L	1	3/24/2022 10:38:48 AM	B86739
Beryllium	ND	0.00088	0.0020		mg/L	1	3/24/2022 10:38:48 AM	B86739
Cadmium	ND	0.00098	0.0020		mg/L	1	3/24/2022 10:38:48 AM	B86739
Chromium	ND	0.0020	0.0060		mg/L	1	3/24/2022 10:38:48 AM	B86739
Cobalt	ND	0.0024	0.0060		mg/L	1	3/24/2022 10:38:48 AM	B86739
Nickel	ND	0.0033	0.010		mg/L	1	3/24/2022 10:38:48 AM	B86739
Silver	ND	0.0013	0.0050		mg/L	1	3/24/2022 10:38:48 AM	B86739
Vanadium	ND	0.0017	0.050		mg/L	1	3/24/2022 10:38:48 AM	B86739
Zinc	0.0065	0.0032	0.010	J	mg/L	1	3/24/2022 11:36:02 AM	B86739
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/24/2022 2:04:10 PM	B86714
Arsenic	ND	0.00012	0.0010		mg/L	1	3/24/2022 2:04:10 PM	B86714
Lead	ND	0.000057	0.00050		mg/L	1	3/24/2022 2:04:10 PM	B86714
Selenium	ND	0.00034	0.0010		mg/L	1	3/24/2022 2:04:10 PM	B86714
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/29/2022 1:50:19 PM	66455

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-70
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022 8:20:00 AM
Lab ID: 2203B95-002A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	4.8	0.23	1.0		µg/L	1	3/24/2022 1:53:55 PM	R86734
Toluene	ND	0.20	1.0		µg/L	1	3/24/2022 1:53:55 PM	R86734
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/24/2022 1:53:55 PM	R86734
Methyl tert-butyl ether (MTBE)	50	0.39	1.0		µg/L	1	3/24/2022 1:53:55 PM	R86734
1,2,4-Trimethylbenzene	0.36	0.12	1.0	J	µg/L	1	3/24/2022 1:53:55 PM	R86734
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/24/2022 1:53:55 PM	R86734
1,2-Dichloroethane (EDC)	16	0.25	1.0		µg/L	1	3/24/2022 1:53:55 PM	R86734
Acetone	ND	2.5	10		µg/L	1	3/24/2022 1:53:55 PM	R86734
Bromomethane	ND	0.85	3.0		µg/L	1	3/24/2022 1:53:55 PM	R86734
2-Butanone	ND	2.0	10		µg/L	1	3/24/2022 1:53:55 PM	R86734
Carbon disulfide	ND	0.59	10		µg/L	1	3/24/2022 1:53:55 PM	R86734
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/24/2022 1:53:55 PM	R86734
Chloroform	ND	0.13	1.0		µg/L	1	3/24/2022 1:53:55 PM	R86734
Chloromethane	ND	0.41	3.0		µg/L	1	3/24/2022 1:53:55 PM	R86734
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/24/2022 1:53:55 PM	R86734
1,1-Dichloroethane	0.77	0.27	1.0	J	µg/L	1	3/24/2022 1:53:55 PM	R86734
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/24/2022 1:53:55 PM	R86734
Isopropylbenzene	20	0.18	1.0		µg/L	1	3/24/2022 1:53:55 PM	R86734
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/24/2022 1:53:55 PM	R86734
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/24/2022 1:53:55 PM	R86734
n-Butylbenzene	0.97	0.25	3.0	J	µg/L	1	3/24/2022 1:53:55 PM	R86734
n-Propylbenzene	0.97	0.18	1.0	J	µg/L	1	3/24/2022 1:53:55 PM	R86734
sec-Butylbenzene	4.3	0.14	1.0		µg/L	1	3/24/2022 1:53:55 PM	R86734
Styrene	ND	0.14	1.0		µg/L	1	3/24/2022 1:53:55 PM	R86734
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/24/2022 1:53:55 PM	R86734
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/24/2022 1:53:55 PM	R86734
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/24/2022 1:53:55 PM	R86734
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/24/2022 1:53:55 PM	R86734
Xylenes, Total	1.6	0.37	1.5		µg/L	1	3/24/2022 1:53:55 PM	R86734
Surr: 1,2-Dichloroethane-d4	90.8	0	70-130		%Rec	1	3/24/2022 1:53:55 PM	R86734
Surr: 4-Bromofluorobenzene	95.4	0	70-130		%Rec	1	3/24/2022 1:53:55 PM	R86734
Surr: Dibromofluoromethane	90.8	0	70-130		%Rec	1	3/24/2022 1:53:55 PM	R86734
Surr: Toluene-d8	102	0	70-130		%Rec	1	3/24/2022 1:53:55 PM	R86734
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.67	0.028	0.050		mg/L	1	3/24/2022 1:53:55 PM	G86734
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	3/24/2022 1:53:55 PM	G86734

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-70
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022 8:20:00 AM
Lab ID: 2203B95-002B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0093		µg/L	1	3/29/2022 12:53:06 PM	66393

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-70
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022 8:20:00 AM
Lab ID: 2203B95-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	1.1	0.016	0.064		mg/L	1	3/28/2022 4:02:53 PM	66372
Motor Oil Range Organics (MRO)	0.067	0.052	0.080	J	mg/L	1	3/28/2022 4:02:53 PM	66372
Surr: DNOP	109	0	42.2-138		%Rec	1	3/28/2022 4:02:53 PM	66372
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	1.1	20		µg/L	1	4/2/2022 12:54:17 PM	66355
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	4/2/2022 12:54:17 PM	66355
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	4/2/2022 12:54:17 PM	66355
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	4/2/2022 12:54:17 PM	66355
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	4/2/2022 12:54:17 PM	66355
Diethyl phthalate	ND	3.9	10		µg/L	1	4/2/2022 12:54:17 PM	66355
Dimethyl phthalate	ND	2.0	10		µg/L	1	4/2/2022 12:54:17 PM	66355
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	4/2/2022 12:54:17 PM	66355
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	4/2/2022 12:54:17 PM	66355
2-Methylphenol	ND	0.51	5.0		µg/L	1	4/2/2022 12:54:17 PM	66355
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	4/2/2022 12:54:17 PM	66355
Phenol	ND	0.33	5.0		µg/L	1	4/2/2022 12:54:17 PM	66355
Pyridine	ND	10	10		µg/L	1	4/2/2022 12:54:17 PM	66355
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	4/2/2022 12:54:17 PM	66355
Surr: 2-Fluorophenol	47.2	0	29.4-87.7		%Rec	1	4/2/2022 12:54:17 PM	66355
Surr: Phenol-d5	35.3	0	28.5-64.7		%Rec	1	4/2/2022 12:54:17 PM	66355
Surr: 2,4,6-Tribromophenol	81.3	0	18.6-129		%Rec	1	4/2/2022 12:54:17 PM	66355
Surr: Nitrobenzene-d5	60.6	0	36.9-103		%Rec	1	4/2/2022 12:54:17 PM	66355
Surr: 2-Fluorobiphenyl	53.5	0	38.1-99.9		%Rec	1	4/2/2022 12:54:17 PM	66355
Surr: 4-Terphenyl-d14	87.2	0	48-155		%Rec	1	4/2/2022 12:54:17 PM	66355
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.048	1.0		µg/L	1	3/28/2022 6:01:00 PM	R86800
Naphthalene	0.18	0.034	0.10		µg/L	1	3/28/2022 6:01:00 PM	R86800
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/28/2022 6:01:00 PM	R86800
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/28/2022 6:01:00 PM	R86800
Acenaphthene	ND	0.031	0.10		µg/L	1	3/28/2022 6:01:00 PM	R86800
Fluorene	ND	0.031	0.10		µg/L	1	3/28/2022 6:01:00 PM	R86800
Phenanthrene	0.80	0.057	0.10		µg/L	1	3/28/2022 6:01:00 PM	R86800
Anthracene	ND	0.034	0.10		µg/L	1	3/28/2022 6:01:00 PM	R86800
Fluoranthene	ND	0.10	0.20		µg/L	1	3/28/2022 6:01:00 PM	R86800
Pyrene	ND	0.16	0.20		µg/L	1	3/28/2022 6:01:00 PM	R86800
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/28/2022 6:01:00 PM	R86800
Chrysene	ND	0.024	0.10		µg/L	1	3/28/2022 6:01:00 PM	R86800
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/28/2022 6:01:00 PM	R86800
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/28/2022 6:01:00 PM	R86800

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-70
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022 8:20:00 AM
Lab ID: 2203B95-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	57.3	0	31.6-100		%Rec	1	3/28/2022 6:01:00 PM	R86800
Surr: 2-Fluorobiphenyl	51.2	0	26.7-90.1		%Rec	1	3/28/2022 6:01:00 PM	R86800
Surr: 4-Terphenyl-d14	78.3	0	72.3-147		%Rec	1	3/28/2022 6:01:00 PM	R86800

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-70
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022 8:20:00 AM
Lab ID: 2203B95-002D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.92	0.0016	0.0030		mg/L	1	4/6/2022 2:20:52 PM	66643
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 2:20:52 PM	66643
Cadmium	ND	0.0015	0.0020		mg/L	1	4/6/2022 2:20:52 PM	66643
Chromium	0.010	0.0021	0.0060		mg/L	1	4/6/2022 2:20:52 PM	66643
Cobalt	0.011	0.0024	0.0060		mg/L	1	4/6/2022 2:20:52 PM	66643
Nickel	0.047	0.0033	0.010		mg/L	1	4/6/2022 2:20:52 PM	66643
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 2:20:52 PM	66643
Vanadium	0.018	0.0024	0.050	J	mg/L	1	4/6/2022 2:20:52 PM	66643
Zinc	0.014	0.0064	0.010		mg/L	1	4/6/2022 2:20:52 PM	66643
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/29/2022 12:53:39 PM	66440
Arsenic	0.0038	0.00013	0.0010		mg/L	1	3/29/2022 12:53:39 PM	66440
Lead	0.0038	0.000061	0.00050		mg/L	1	3/29/2022 12:53:39 PM	66440
Selenium	0.00072	0.00037	0.0010	J	mg/L	1	3/29/2022 12:53:39 PM	66440
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/25/2022 3:06:14 PM	66396

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-70
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022 8:20:00 AM
Lab ID: 2203B95-002E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.54	0.0011	0.0020		mg/L	1	3/24/2022 10:40:25 AM	B86739
Beryllium	ND	0.00088	0.0020		mg/L	1	3/24/2022 10:40:25 AM	B86739
Cadmium	ND	0.00098	0.0020		mg/L	1	3/24/2022 10:40:25 AM	B86739
Chromium	ND	0.0020	0.0060		mg/L	1	3/24/2022 10:40:25 AM	B86739
Cobalt	0.0070	0.0024	0.0060		mg/L	1	3/24/2022 10:40:25 AM	B86739
Nickel	0.048	0.0033	0.010		mg/L	1	3/24/2022 10:40:25 AM	B86739
Silver	ND	0.0013	0.0050		mg/L	1	3/24/2022 10:40:25 AM	B86739
Vanadium	0.0035	0.0017	0.050	J	mg/L	1	3/24/2022 10:40:25 AM	B86739
Zinc	0.0086	0.0032	0.010	J	mg/L	1	3/24/2022 11:37:36 AM	B86739
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	0.00049	0.00044	0.0010	J	mg/L	1	3/24/2022 2:12:14 PM	B86714
Arsenic	0.0015	0.00012	0.0010		mg/L	1	3/24/2022 2:12:14 PM	B86714
Lead	0.00019	0.000057	0.00050	J	mg/L	1	3/24/2022 2:12:14 PM	B86714
Selenium	ND	0.00034	0.0010		mg/L	1	3/24/2022 2:12:14 PM	B86714
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/29/2022 1:52:27 PM	66455

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-12A
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022 9:15:00 AM
Lab ID: 2203B95-003A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	190	2.3	10		µg/L	10	3/25/2022 11:30:48 AM	R86760
Toluene	1.3	0.20	1.0		µg/L	1	3/24/2022 3:19:54 PM	R86734
Ethylbenzene	0.56	0.21	1.0	J	µg/L	1	3/24/2022 3:19:54 PM	R86734
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/24/2022 3:19:54 PM	R86734
1,2,4-Trimethylbenzene	130	1.2	10		µg/L	10	3/25/2022 11:30:48 AM	R86760
1,3,5-Trimethylbenzene	120	1.8	10		µg/L	10	3/25/2022 11:30:48 AM	R86760
1,2-Dichloroethane (EDC)	0.47	0.25	1.0	J	µg/L	1	3/24/2022 3:19:54 PM	R86734
Acetone	12	2.5	10		µg/L	1	3/24/2022 3:19:54 PM	R86734
Bromomethane	ND	0.85	3.0		µg/L	1	3/24/2022 3:19:54 PM	R86734
2-Butanone	2.4	2.0	10	J	µg/L	1	3/24/2022 3:19:54 PM	R86734
Carbon disulfide	ND	0.59	10		µg/L	1	3/24/2022 3:19:54 PM	R86734
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/24/2022 3:19:54 PM	R86734
Chloroform	ND	0.13	1.0		µg/L	1	3/24/2022 3:19:54 PM	R86734
Chloromethane	2.7	0.41	3.0	J	µg/L	1	3/24/2022 3:19:54 PM	R86734
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/24/2022 3:19:54 PM	R86734
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/24/2022 3:19:54 PM	R86734
1,1-Dichloroethene	0.62	0.20	1.0	J	µg/L	1	3/24/2022 3:19:54 PM	R86734
Isopropylbenzene	0.84	0.18	1.0	J	µg/L	1	3/24/2022 3:19:54 PM	R86734
4-Isopropyltoluene	13	0.20	1.0		µg/L	1	3/24/2022 3:19:54 PM	R86734
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/24/2022 3:19:54 PM	R86734
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/24/2022 3:19:54 PM	R86734
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/24/2022 3:19:54 PM	R86734
sec-Butylbenzene	0.42	0.14	1.0	J	µg/L	1	3/24/2022 3:19:54 PM	R86734
Styrene	ND	0.14	1.0		µg/L	1	3/24/2022 3:19:54 PM	R86734
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/24/2022 3:19:54 PM	R86734
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/24/2022 3:19:54 PM	R86734
Trichloroethene (TCE)	6.5	0.20	1.0		µg/L	1	3/24/2022 3:19:54 PM	R86734
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/24/2022 3:19:54 PM	R86734
Xylenes, Total	220	3.7	15		µg/L	10	3/25/2022 11:30:48 AM	R86760
Surr: 1,2-Dichloroethane-d4	90.9	0	70-130		%Rec	1	3/24/2022 3:19:54 PM	R86734
Surr: 4-Bromofluorobenzene	80.9	0	70-130		%Rec	1	3/24/2022 3:19:54 PM	R86734
Surr: Dibromofluoromethane	87.1	0	70-130		%Rec	1	3/24/2022 3:19:54 PM	R86734
Surr: Toluene-d8	97.7	0	70-130		%Rec	1	3/24/2022 3:19:54 PM	R86734
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	5.2	0.028	0.050		mg/L	1	3/24/2022 3:19:54 PM	G86734
Surr: 4-Bromofluorobenzene	89.3	0	70-130		%Rec	1	3/24/2022 3:19:54 PM	G86734

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-12A
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022 9:15:00 AM
Lab ID: 2203B95-003B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0035	0.0095		µg/L	1	3/29/2022 1:08:17 PM	66393

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-12A
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022 9:15:00 AM
Lab ID: 2203B95-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	2.4	0.016	0.064		mg/L	1	3/28/2022 4:26:51 PM	66372
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/28/2022 4:26:51 PM	66372
Surr: DNOP	105	0	42.2-138		%Rec	1	3/28/2022 4:26:51 PM	66372
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	1.1	20		µg/L	1	4/2/2022 1:36:16 PM	66355
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	4/2/2022 1:36:16 PM	66355
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	4/2/2022 1:36:16 PM	66355
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	4/2/2022 1:36:16 PM	66355
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	4/2/2022 1:36:16 PM	66355
Diethyl phthalate	ND	3.9	10		µg/L	1	4/2/2022 1:36:16 PM	66355
Dimethyl phthalate	ND	2.0	10		µg/L	1	4/2/2022 1:36:16 PM	66355
2,4-Dimethylphenol	7.1	0.97	5.0		µg/L	1	4/2/2022 1:36:16 PM	66355
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	4/2/2022 1:36:16 PM	66355
2-Methylphenol	ND	0.51	5.0		µg/L	1	4/2/2022 1:36:16 PM	66355
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	4/2/2022 1:36:16 PM	66355
Phenol	7.8	0.33	5.0		µg/L	1	4/2/2022 1:36:16 PM	66355
Pyridine	ND	10	10		µg/L	1	4/2/2022 1:36:16 PM	66355
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	4/2/2022 1:36:16 PM	66355
Surr: 2-Fluorophenol	50.1	0	29.4-87.7		%Rec	1	4/2/2022 1:36:16 PM	66355
Surr: Phenol-d5	0	0	28.5-64.7	S	%Rec	1	4/2/2022 1:36:16 PM	66355
Surr: 2,4,6-Tribromophenol	75.9	0	18.6-129		%Rec	1	4/2/2022 1:36:16 PM	66355
Surr: Nitrobenzene-d5	65.7	0	36.9-103		%Rec	1	4/2/2022 1:36:16 PM	66355
Surr: 2-Fluorobiphenyl	56.0	0	38.1-99.9		%Rec	1	4/2/2022 1:36:16 PM	66355
Surr: 4-Terphenyl-d14	80.8	0	48-155		%Rec	1	4/2/2022 1:36:16 PM	66355
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	16	0.048	1.0		µg/L	1	3/28/2022 6:52:00 PM	R86800
Naphthalene	5.1	0.034	0.10		µg/L	1	3/28/2022 6:52:00 PM	R86800
1-Methylnaphthalene	2.7	0.024	0.10		µg/L	1	3/28/2022 6:52:00 PM	R86800
2-Methylnaphthalene	2.4	0.034	0.10		µg/L	1	3/28/2022 6:52:00 PM	R86800
Acenaphthene	ND	0.031	0.10		µg/L	1	3/28/2022 6:52:00 PM	R86800
Fluorene	ND	0.031	0.10		µg/L	1	3/28/2022 6:52:00 PM	R86800
Phenanthrene	ND	0.057	0.10		µg/L	1	3/28/2022 6:52:00 PM	R86800
Anthracene	ND	0.034	0.10		µg/L	1	3/28/2022 6:52:00 PM	R86800
Fluoranthene	ND	0.10	0.20		µg/L	1	3/28/2022 6:52:00 PM	R86800
Pyrene	ND	0.16	0.20		µg/L	1	3/28/2022 6:52:00 PM	R86800
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/28/2022 6:52:00 PM	R86800
Chrysene	ND	0.024	0.10		µg/L	1	3/28/2022 6:52:00 PM	R86800
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/28/2022 6:52:00 PM	R86800
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/28/2022 6:52:00 PM	R86800

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-12A
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022 9:15:00 AM
Lab ID: 2203B95-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	63.8	0	31.6-100		%Rec	1	3/28/2022 6:52:00 PM	R86800
Surr: 2-Fluorobiphenyl	52.3	0	26.7-90.1		%Rec	1	3/28/2022 6:52:00 PM	R86800
Surr: 4-Terphenyl-d14	78.3	0	72.3-147		%Rec	1	3/28/2022 6:52:00 PM	R86800

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-12A
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022 9:15:00 AM
Lab ID: 2203B95-003D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	1.9	0.0082	0.015		mg/L	5	4/6/2022 2:25:05 PM	66643
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 2:23:40 PM	66643
Cadmium	ND	0.0015	0.0020		mg/L	1	4/6/2022 2:23:40 PM	66643
Chromium	0.012	0.0021	0.0060		mg/L	1	4/6/2022 2:23:40 PM	66643
Cobalt	0.010	0.0024	0.0060		mg/L	1	4/6/2022 2:23:40 PM	66643
Nickel	0.014	0.0033	0.010		mg/L	1	4/6/2022 2:23:40 PM	66643
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 2:23:40 PM	66643
Vanadium	0.034	0.0024	0.050	J	mg/L	1	4/6/2022 2:23:40 PM	66643
Zinc	0.029	0.0064	0.010		mg/L	1	4/6/2022 2:23:40 PM	66643
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	3/29/2022 1:40:05 PM	66440
Arsenic	0.0098	0.00063	0.0050		mg/L	5	3/29/2022 1:40:05 PM	66440
Lead	0.0099	0.00031	0.0025		mg/L	5	3/29/2022 1:40:05 PM	66440
Selenium	0.0022	0.0019	0.0050	J	mg/L	5	3/29/2022 1:40:05 PM	66440
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/25/2022 3:08:22 PM	66396

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-12A
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022 9:15:00 AM
Lab ID: 2203B95-003E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.13	0.0011	0.0020		mg/L	1	3/24/2022 10:43:43 AM	B86739
Beryllium	ND	0.00088	0.0020		mg/L	1	3/24/2022 10:43:43 AM	B86739
Cadmium	ND	0.00098	0.0020		mg/L	1	3/24/2022 10:43:43 AM	B86739
Chromium	ND	0.0020	0.0060		mg/L	1	3/24/2022 10:43:43 AM	B86739
Cobalt	0.0053	0.0024	0.0060	J	mg/L	1	3/24/2022 10:43:43 AM	B86739
Nickel	0.0086	0.0033	0.010	J	mg/L	1	3/24/2022 10:43:43 AM	B86739
Silver	ND	0.0013	0.0050		mg/L	1	3/24/2022 10:43:43 AM	B86739
Vanadium	0.0027	0.0017	0.050	J	mg/L	1	3/24/2022 10:43:43 AM	B86739
Zinc	0.0091	0.0032	0.010	J	mg/L	1	3/24/2022 11:40:35 AM	B86739
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	0.00070	0.00044	0.0010	J	mg/L	1	3/24/2022 2:17:37 PM	B86714
Arsenic	0.0044	0.00012	0.0010		mg/L	1	3/24/2022 2:17:37 PM	B86714
Lead	0.00041	0.000057	0.00050	J	mg/L	1	3/24/2022 2:17:37 PM	B86714
Selenium	0.00052	0.00034	0.0010	J	mg/L	1	3/24/2022 2:17:37 PM	B86714
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/29/2022 1:54:35 PM	66455

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: KA-3
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022 11:00:00 AM
Lab ID: 2203B95-004A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	2.1	0.23	1.0		µg/L	1	3/24/2022 4:45:25 PM	R86734
Toluene	ND	0.20	1.0		µg/L	1	3/24/2022 4:45:25 PM	R86734
Ethylbenzene	9.7	0.21	1.0		µg/L	1	3/24/2022 4:45:25 PM	R86734
Methyl tert-butyl ether (MTBE)	72	0.39	1.0		µg/L	1	3/24/2022 4:45:25 PM	R86734
1,2,4-Trimethylbenzene	0.61	0.12	1.0	J	µg/L	1	3/24/2022 4:45:25 PM	R86734
1,3,5-Trimethylbenzene	0.48	0.18	1.0	J	µg/L	1	3/24/2022 4:45:25 PM	R86734
1,2-Dichloroethane (EDC)	0.42	0.25	1.0	J	µg/L	1	3/24/2022 4:45:25 PM	R86734
Acetone	ND	2.5	10		µg/L	1	3/24/2022 4:45:25 PM	R86734
Bromomethane	ND	0.85	3.0		µg/L	1	3/24/2022 4:45:25 PM	R86734
2-Butanone	ND	2.0	10		µg/L	1	3/24/2022 4:45:25 PM	R86734
Carbon disulfide	ND	0.59	10		µg/L	1	3/24/2022 4:45:25 PM	R86734
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/24/2022 4:45:25 PM	R86734
Chloroform	ND	0.13	1.0		µg/L	1	3/24/2022 4:45:25 PM	R86734
Chloromethane	0.70	0.41	3.0	J	µg/L	1	3/24/2022 4:45:25 PM	R86734
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/24/2022 4:45:25 PM	R86734
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/24/2022 4:45:25 PM	R86734
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/24/2022 4:45:25 PM	R86734
Isopropylbenzene	1.7	0.18	1.0		µg/L	1	3/24/2022 4:45:25 PM	R86734
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/24/2022 4:45:25 PM	R86734
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/24/2022 4:45:25 PM	R86734
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/24/2022 4:45:25 PM	R86734
n-Propylbenzene	0.69	0.18	1.0	J	µg/L	1	3/24/2022 4:45:25 PM	R86734
sec-Butylbenzene	0.25	0.14	1.0	J	µg/L	1	3/24/2022 4:45:25 PM	R86734
Styrene	ND	0.14	1.0		µg/L	1	3/24/2022 4:45:25 PM	R86734
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/24/2022 4:45:25 PM	R86734
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/24/2022 4:45:25 PM	R86734
Trichloroethene (TCE)	0.30	0.20	1.0	J	µg/L	1	3/24/2022 4:45:25 PM	R86734
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/24/2022 4:45:25 PM	R86734
Xylenes, Total	0.85	0.37	1.5	J	µg/L	1	3/24/2022 4:45:25 PM	R86734
Surr: 1,2-Dichloroethane-d4	88.0	0	70-130		%Rec	1	3/24/2022 4:45:25 PM	R86734
Surr: 4-Bromofluorobenzene	100	0	70-130		%Rec	1	3/24/2022 4:45:25 PM	R86734
Surr: Dibromofluoromethane	95.1	0	70-130		%Rec	1	3/24/2022 4:45:25 PM	R86734
Surr: Toluene-d8	99.8	0	70-130		%Rec	1	3/24/2022 4:45:25 PM	R86734
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.31	0.028	0.050		mg/L	1	3/24/2022 4:45:25 PM	G86734
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	3/24/2022 4:45:25 PM	G86734

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: KA-3
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022 11:00:00 AM
Lab ID: 2203B95-004B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	3/29/2022 1:23:28 PM	66393

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: KA-3
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022 11:00:00 AM
Lab ID: 2203B95-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.56	0.016	0.064		mg/L	1	3/28/2022 4:50:45 PM	66372
Motor Oil Range Organics (MRO)	0.088	0.052	0.080		mg/L	1	3/28/2022 4:50:45 PM	66372
Surr: DNOP	103	0	42.2-138		%Rec	1	3/28/2022 4:50:45 PM	66372
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	1.1	20		µg/L	1	4/2/2022 2:18:30 PM	66355
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	4/2/2022 2:18:30 PM	66355
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	4/2/2022 2:18:30 PM	66355
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	4/2/2022 2:18:30 PM	66355
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	4/2/2022 2:18:30 PM	66355
Diethyl phthalate	ND	3.9	10		µg/L	1	4/2/2022 2:18:30 PM	66355
Dimethyl phthalate	ND	2.0	10		µg/L	1	4/2/2022 2:18:30 PM	66355
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	4/2/2022 2:18:30 PM	66355
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	4/2/2022 2:18:30 PM	66355
2-Methylphenol	ND	0.51	5.0		µg/L	1	4/2/2022 2:18:30 PM	66355
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	4/2/2022 2:18:30 PM	66355
Phenol	ND	0.33	5.0		µg/L	1	4/2/2022 2:18:30 PM	66355
Pyridine	ND	10	10		µg/L	1	4/2/2022 2:18:30 PM	66355
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	4/2/2022 2:18:30 PM	66355
Surr: 2-Fluorophenol	49.7	0	29.4-87.7		%Rec	1	4/2/2022 2:18:30 PM	66355
Surr: Phenol-d5	38.4	0	28.5-64.7		%Rec	1	4/2/2022 2:18:30 PM	66355
Surr: 2,4,6-Tribromophenol	82.3	0	18.6-129		%Rec	1	4/2/2022 2:18:30 PM	66355
Surr: Nitrobenzene-d5	62.9	0	36.9-103		%Rec	1	4/2/2022 2:18:30 PM	66355
Surr: 2-Fluorobiphenyl	54.0	0	38.1-99.9		%Rec	1	4/2/2022 2:18:30 PM	66355
Surr: 4-Terphenyl-d14	79.4	0	48-155		%Rec	1	4/2/2022 2:18:30 PM	66355
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.048	1.0		µg/L	1	3/28/2022 7:42:00 PM	R86800
Naphthalene	ND	0.034	0.10		µg/L	1	3/28/2022 7:42:00 PM	R86800
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/28/2022 7:42:00 PM	R86800
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/28/2022 7:42:00 PM	R86800
Acenaphthene	ND	0.031	0.10		µg/L	1	3/28/2022 7:42:00 PM	R86800
Fluorene	ND	0.031	0.10		µg/L	1	3/28/2022 7:42:00 PM	R86800
Phenanthrene	ND	0.057	0.10		µg/L	1	3/28/2022 7:42:00 PM	R86800
Anthracene	ND	0.034	0.10		µg/L	1	3/28/2022 7:42:00 PM	R86800
Fluoranthene	ND	0.10	0.20		µg/L	1	3/28/2022 7:42:00 PM	R86800
Pyrene	0.20	0.16	0.20		µg/L	1	3/28/2022 7:42:00 PM	R86800
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/28/2022 7:42:00 PM	R86800
Chrysene	ND	0.024	0.10		µg/L	1	3/28/2022 7:42:00 PM	R86800
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/28/2022 7:42:00 PM	R86800
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/28/2022 7:42:00 PM	R86800

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Estimated value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: KA-3
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022 11:00:00 AM
Lab ID: 2203B95-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	59.2	0	31.6-100		%Rec	1	3/28/2022 7:42:00 PM	R86800
Surr: 2-Fluorobiphenyl	53.2	0	26.7-90.1		%Rec	1	3/28/2022 7:42:00 PM	R86800
Surr: 4-Terphenyl-d14	77.0	0	72.3-147		%Rec	1	3/28/2022 7:42:00 PM	R86800

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: KA-3
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022 11:00:00 AM
Lab ID: 2203B95-004D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.21	0.0016	0.0030		mg/L	1	4/6/2022 2:28:09 PM	66643
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 2:28:09 PM	66643
Cadmium	ND	0.0015	0.0020		mg/L	1	4/6/2022 2:28:09 PM	66643
Chromium	ND	0.0021	0.0060		mg/L	1	4/6/2022 2:28:09 PM	66643
Cobalt	ND	0.0024	0.0060		mg/L	1	4/6/2022 2:28:09 PM	66643
Nickel	0.022	0.0033	0.010		mg/L	1	4/6/2022 2:28:09 PM	66643
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 2:28:09 PM	66643
Vanadium	0.019	0.0024	0.050	J	mg/L	1	4/6/2022 2:28:09 PM	66643
Zinc	0.0075	0.0064	0.010	J	mg/L	1	4/6/2022 2:28:09 PM	66643
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/29/2022 12:58:32 PM	66440
Arsenic	0.00077	0.00063	0.0050	J	mg/L	5	3/29/2022 1:44:58 PM	66440
Lead	0.00052	0.000061	0.00050		mg/L	1	3/29/2022 12:58:32 PM	66440
Selenium	ND	0.0019	0.0050		mg/L	5	3/29/2022 1:44:58 PM	66440
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/25/2022 3:10:30 PM	66396

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: KA-3
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022 11:00:00 AM
Lab ID: 2203B95-004E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.21	0.0011	0.0020		mg/L	1	3/24/2022 10:47:03 AM	B86739
Beryllium	ND	0.00088	0.0020		mg/L	1	3/24/2022 10:47:03 AM	B86739
Cadmium	ND	0.00098	0.0020		mg/L	1	3/24/2022 10:47:03 AM	B86739
Chromium	ND	0.0020	0.0060		mg/L	1	3/24/2022 10:47:03 AM	B86739
Cobalt	ND	0.0024	0.0060		mg/L	1	3/24/2022 10:47:03 AM	B86739
Nickel	0.027	0.0033	0.010		mg/L	1	3/24/2022 10:47:03 AM	B86739
Silver	ND	0.0013	0.0050		mg/L	1	3/24/2022 10:47:03 AM	B86739
Vanadium	0.017	0.0017	0.050	J	mg/L	1	3/24/2022 10:47:03 AM	B86739
Zinc	0.012	0.0032	0.010		mg/L	1	3/24/2022 11:42:13 AM	B86739
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/24/2022 2:30:14 PM	B86714
Arsenic	0.00087	0.00012	0.0010	J	mg/L	1	3/24/2022 2:30:14 PM	B86714
Lead	0.00027	0.000057	0.00050	J	mg/L	1	3/24/2022 2:30:14 PM	B86714
Selenium	ND	0.00034	0.0010		mg/L	1	3/24/2022 2:30:14 PM	B86714
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/29/2022 1:56:44 PM	66455

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPIS-3
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022 10:30:00 AM
Lab ID: 2203B95-005A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	99	0.23	1.0		µg/L	1	3/24/2022 5:13:52 PM	R86734
Toluene	ND	0.20	1.0		µg/L	1	3/24/2022 5:13:52 PM	R86734
Ethylbenzene	41	0.21	1.0		µg/L	1	3/24/2022 5:13:52 PM	R86734
Methyl tert-butyl ether (MTBE)	67	0.39	1.0		µg/L	1	3/24/2022 5:13:52 PM	R86734
1,2,4-Trimethylbenzene	0.22	0.12	1.0	J	µg/L	1	3/24/2022 5:13:52 PM	R86734
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/24/2022 5:13:52 PM	R86734
1,2-Dichloroethane (EDC)	0.42	0.25	1.0	J	µg/L	1	3/24/2022 5:13:52 PM	R86734
Acetone	ND	2.5	10		µg/L	1	3/24/2022 5:13:52 PM	R86734
Bromomethane	ND	0.85	3.0		µg/L	1	3/24/2022 5:13:52 PM	R86734
2-Butanone	ND	2.0	10		µg/L	1	3/24/2022 5:13:52 PM	R86734
Carbon disulfide	ND	0.59	10		µg/L	1	3/24/2022 5:13:52 PM	R86734
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/24/2022 5:13:52 PM	R86734
Chloroform	ND	0.13	1.0		µg/L	1	3/24/2022 5:13:52 PM	R86734
Chloromethane	0.72	0.41	3.0	J	µg/L	1	3/24/2022 5:13:52 PM	R86734
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/24/2022 5:13:52 PM	R86734
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/24/2022 5:13:52 PM	R86734
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/24/2022 5:13:52 PM	R86734
Isopropylbenzene	4.4	0.18	1.0		µg/L	1	3/24/2022 5:13:52 PM	R86734
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/24/2022 5:13:52 PM	R86734
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/24/2022 5:13:52 PM	R86734
n-Butylbenzene	0.32	0.25	3.0	J	µg/L	1	3/24/2022 5:13:52 PM	R86734
n-Propylbenzene	2.7	0.18	1.0		µg/L	1	3/24/2022 5:13:52 PM	R86734
sec-Butylbenzene	0.73	0.14	1.0	J	µg/L	1	3/24/2022 5:13:52 PM	R86734
Styrene	ND	0.14	1.0		µg/L	1	3/24/2022 5:13:52 PM	R86734
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/24/2022 5:13:52 PM	R86734
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/24/2022 5:13:52 PM	R86734
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/24/2022 5:13:52 PM	R86734
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/24/2022 5:13:52 PM	R86734
Xylenes, Total	1.9	0.37	1.5		µg/L	1	3/24/2022 5:13:52 PM	R86734
Surr: 1,2-Dichloroethane-d4	87.7	0	70-130		%Rec	1	3/24/2022 5:13:52 PM	R86734
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	3/24/2022 5:13:52 PM	R86734
Surr: Dibromofluoromethane	90.2	0	70-130		%Rec	1	3/24/2022 5:13:52 PM	R86734
Surr: Toluene-d8	98.8	0	70-130		%Rec	1	3/24/2022 5:13:52 PM	R86734
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.69	0.028	0.050		mg/L	1	3/24/2022 5:13:52 PM	G86734
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	1	3/24/2022 5:13:52 PM	G86734

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPIS-3
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022 10:30:00 AM
Lab ID: 2203B95-005B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	3/29/2022 1:38:41 PM	66393

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPIS-3
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022 10:30:00 AM
Lab ID: 2203B95-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.65	0.016	0.064		mg/L	1	3/28/2022 5:14:36 PM	66385
Motor Oil Range Organics (MRO)	0.091	0.052	0.080		mg/L	1	3/28/2022 5:14:36 PM	66385
Surr: DNOP	100	0	42.2-138		%Rec	1	3/28/2022 5:14:36 PM	66385
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	1.1	20		µg/L	1	4/2/2022 3:01:04 PM	66355
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	4/2/2022 3:01:04 PM	66355
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	4/2/2022 3:01:04 PM	66355
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	4/2/2022 3:01:04 PM	66355
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	4/2/2022 3:01:04 PM	66355
Diethyl phthalate	ND	3.9	10		µg/L	1	4/2/2022 3:01:04 PM	66355
Dimethyl phthalate	ND	2.0	10		µg/L	1	4/2/2022 3:01:04 PM	66355
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	4/2/2022 3:01:04 PM	66355
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	4/2/2022 3:01:04 PM	66355
2-Methylphenol	ND	0.51	5.0		µg/L	1	4/2/2022 3:01:04 PM	66355
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	4/2/2022 3:01:04 PM	66355
Phenol	4.2	0.33	5.0	J	µg/L	1	4/2/2022 3:01:04 PM	66355
Pyridine	ND	10	10		µg/L	1	4/2/2022 3:01:04 PM	66355
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	4/2/2022 3:01:04 PM	66355
Surr: 2-Fluorophenol	50.9	0	29.4-87.7		%Rec	1	4/2/2022 3:01:04 PM	66355
Surr: Phenol-d5	41.3	0	28.5-64.7		%Rec	1	4/2/2022 3:01:04 PM	66355
Surr: 2,4,6-Tribromophenol	86.4	0	18.6-129		%Rec	1	4/2/2022 3:01:04 PM	66355
Surr: Nitrobenzene-d5	66.1	0	36.9-103		%Rec	1	4/2/2022 3:01:04 PM	66355
Surr: 2-Fluorobiphenyl	60.1	0	38.1-99.9		%Rec	1	4/2/2022 3:01:04 PM	66355
Surr: 4-Terphenyl-d14	88.5	0	48-155		%Rec	1	4/2/2022 3:01:04 PM	66355
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.048	1.0		µg/L	1	3/28/2022 8:32:00 PM	R86800
Naphthalene	1.5	0.034	0.10		µg/L	1	3/28/2022 8:32:00 PM	R86800
1-Methylnaphthalene	2.3	0.024	0.10		µg/L	1	3/28/2022 8:32:00 PM	R86800
2-Methylnaphthalene	1.1	0.034	0.10		µg/L	1	3/28/2022 8:32:00 PM	R86800
Acenaphthene	0.48	0.031	0.10		µg/L	1	3/28/2022 8:32:00 PM	R86800
Fluorene	0.32	0.031	0.10		µg/L	1	3/28/2022 8:32:00 PM	R86800
Phenanthrene	0.10	0.057	0.10		µg/L	1	3/28/2022 8:32:00 PM	R86800
Anthracene	ND	0.034	0.10		µg/L	1	3/28/2022 8:32:00 PM	R86800
Fluoranthene	ND	0.10	0.20		µg/L	1	3/28/2022 8:32:00 PM	R86800
Pyrene	0.18	0.16	0.20	J	µg/L	1	3/28/2022 8:32:00 PM	R86800
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/28/2022 8:32:00 PM	R86800
Chrysene	ND	0.024	0.10		µg/L	1	3/28/2022 8:32:00 PM	R86800
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/28/2022 8:32:00 PM	R86800
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/28/2022 8:32:00 PM	R86800

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPIS-3
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022 10:30:00 AM
Lab ID: 2203B95-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	61.4	0	31.6-100		%Rec	1	3/28/2022 8:32:00 PM	R86800
Surr: 2-Fluorobiphenyl	54.5	0	26.7-90.1		%Rec	1	3/28/2022 8:32:00 PM	R86800
Surr: 4-Terphenyl-d14	78.0	0	72.3-147		%Rec	1	3/28/2022 8:32:00 PM	R86800

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPIS-3
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022 10:30:00 AM
Lab ID: 2203B95-005D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	3.0	0.0082	0.015	*	mg/L	5	4/6/2022 2:37:23 PM	66643
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 2:35:56 PM	66643
Cadmium	ND	0.0015	0.0020		mg/L	1	4/6/2022 2:35:56 PM	66643
Chromium	ND	0.0021	0.0060		mg/L	1	4/6/2022 2:35:56 PM	66643
Cobalt	0.0038	0.0024	0.0060	J	mg/L	1	4/6/2022 2:35:56 PM	66643
Nickel	0.025	0.0033	0.010		mg/L	1	4/6/2022 2:35:56 PM	66643
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 2:35:56 PM	66643
Vanadium	0.0068	0.0024	0.050	J	mg/L	1	4/6/2022 2:35:56 PM	66643
Zinc	0.0083	0.0064	0.010	J	mg/L	1	4/6/2022 2:35:56 PM	66643
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/29/2022 1:05:51 PM	66440
Arsenic	0.0046	0.00013	0.0010		mg/L	1	3/29/2022 1:05:51 PM	66440
Lead	0.0013	0.000061	0.00050		mg/L	1	3/29/2022 1:05:51 PM	66440
Selenium	0.00062	0.00037	0.0010	J	mg/L	1	3/29/2022 1:05:51 PM	66440
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/25/2022 3:12:39 PM	66396

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPIS-3
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022 10:30:00 AM
Lab ID: 2203B95-005E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	2.6	0.0056	0.010	*	mg/L	5	3/24/2022 10:58:20 AM	B86739
Beryllium	ND	0.00088	0.0020		mg/L	1	3/24/2022 10:56:39 AM	B86739
Cadmium	ND	0.00098	0.0020		mg/L	1	3/24/2022 10:56:39 AM	B86739
Chromium	ND	0.0020	0.0060		mg/L	1	3/24/2022 10:56:39 AM	B86739
Cobalt	0.0027	0.0024	0.0060	J	mg/L	1	3/24/2022 10:56:39 AM	B86739
Nickel	0.028	0.0033	0.010		mg/L	1	3/24/2022 10:56:39 AM	B86739
Silver	ND	0.0013	0.0050		mg/L	1	3/24/2022 10:56:39 AM	B86739
Vanadium	ND	0.0017	0.050		mg/L	1	3/24/2022 10:56:39 AM	B86739
Zinc	0.0056	0.0032	0.010	J	mg/L	1	3/24/2022 11:43:52 AM	B86739
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/24/2022 2:32:55 PM	B86714
Arsenic	0.0011	0.00012	0.0010		mg/L	1	3/24/2022 2:32:55 PM	B86714
Lead	ND	0.000057	0.00050		mg/L	1	3/24/2022 2:32:55 PM	B86714
Selenium	ND	0.00034	0.0010		mg/L	1	3/24/2022 2:32:55 PM	B86714
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/29/2022 1:58:53 PM	66455

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPIS-2
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022 10:00:00 AM
Lab ID: 2203B95-006A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	790	2.3	10		µg/L	10	3/24/2022 5:42:16 PM	R86734
Toluene	ND	2.0	10		µg/L	10	3/24/2022 5:42:16 PM	R86734
Ethylbenzene	150	2.1	10		µg/L	10	3/24/2022 5:42:16 PM	R86734
Methyl tert-butyl ether (MTBE)	110	3.9	10		µg/L	10	3/24/2022 5:42:16 PM	R86734
1,2,4-Trimethylbenzene	2.0	1.2	10	J	µg/L	10	3/24/2022 5:42:16 PM	R86734
1,3,5-Trimethylbenzene	ND	1.8	10		µg/L	10	3/24/2022 5:42:16 PM	R86734
1,2-Dichloroethane (EDC)	ND	2.5	10		µg/L	10	3/24/2022 5:42:16 PM	R86734
Acetone	ND	25	100		µg/L	10	3/24/2022 5:42:16 PM	R86734
Bromomethane	ND	8.5	30		µg/L	10	3/24/2022 5:42:16 PM	R86734
2-Butanone	ND	20	100		µg/L	10	3/24/2022 5:42:16 PM	R86734
Carbon disulfide	ND	5.9	100		µg/L	10	3/24/2022 5:42:16 PM	R86734
Chlorobenzene	ND	1.6	10		µg/L	10	3/24/2022 5:42:16 PM	R86734
Chloroform	ND	1.3	10		µg/L	10	3/24/2022 5:42:16 PM	R86734
Chloromethane	6.7	4.1	30	J	µg/L	10	3/24/2022 5:42:16 PM	R86734
cis-1,2-DCE	ND	3.9	10		µg/L	10	3/24/2022 5:42:16 PM	R86734
1,1-Dichloroethane	ND	2.7	10		µg/L	10	3/24/2022 5:42:16 PM	R86734
1,1-Dichloroethene	ND	2.0	10		µg/L	10	3/24/2022 5:42:16 PM	R86734
Isopropylbenzene	9.4	1.8	10	J	µg/L	10	3/24/2022 5:42:16 PM	R86734
4-Isopropyltoluene	ND	2.0	10		µg/L	10	3/24/2022 5:42:16 PM	R86734
Methylene Chloride	ND	5.0	30		µg/L	10	3/24/2022 5:42:16 PM	R86734
n-Butylbenzene	ND	2.5	30		µg/L	10	3/24/2022 5:42:16 PM	R86734
n-Propylbenzene	8.2	1.8	10	J	µg/L	10	3/24/2022 5:42:16 PM	R86734
sec-Butylbenzene	ND	1.4	10		µg/L	10	3/24/2022 5:42:16 PM	R86734
Styrene	ND	1.4	10		µg/L	10	3/24/2022 5:42:16 PM	R86734
Tetrachloroethene (PCE)	ND	3.6	10		µg/L	10	3/24/2022 5:42:16 PM	R86734
1,1,1-Trichloroethane	ND	3.0	10		µg/L	10	3/24/2022 5:42:16 PM	R86734
Trichloroethene (TCE)	ND	2.0	10		µg/L	10	3/24/2022 5:42:16 PM	R86734
Vinyl chloride	ND	3.2	10		µg/L	10	3/24/2022 5:42:16 PM	R86734
Xylenes, Total	24	3.7	15		µg/L	10	3/24/2022 5:42:16 PM	R86734
Surr: 1,2-Dichloroethane-d4	78.6	0	70-130		%Rec	10	3/24/2022 5:42:16 PM	R86734
Surr: 4-Bromofluorobenzene	96.8	0	70-130		%Rec	10	3/24/2022 5:42:16 PM	R86734
Surr: Dibromofluoromethane	88.1	0	70-130		%Rec	10	3/24/2022 5:42:16 PM	R86734
Surr: Toluene-d8	99.8	0	70-130		%Rec	10	3/24/2022 5:42:16 PM	R86734
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	3.5	0.28	0.50		mg/L	10	3/24/2022 5:42:16 PM	G86734
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	10	3/24/2022 5:42:16 PM	G86734

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPIS-2
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022 10:00:00 AM
Lab ID: 2203B95-006B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0093		µg/L	1	3/29/2022 2:08:57 PM	66393

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPIS-2
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022 10:00:00 AM
Lab ID: 2203B95-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	2.4	0.016	0.064		mg/L	1	3/29/2022 3:18:14 AM	66385
Motor Oil Range Organics (MRO)	0.16	0.052	0.080		mg/L	1	3/29/2022 3:18:14 AM	66385
Surr: DNOP	94.2	0	42.2-138		%Rec	1	3/29/2022 3:18:14 AM	66385
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	1.1	20		µg/L	1	4/2/2022 3:43:42 PM	66355
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	4/2/2022 3:43:42 PM	66355
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	4/2/2022 3:43:42 PM	66355
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	4/2/2022 3:43:42 PM	66355
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	4/2/2022 3:43:42 PM	66355
Diethyl phthalate	ND	3.9	10		µg/L	1	4/2/2022 3:43:42 PM	66355
Dimethyl phthalate	ND	2.0	10		µg/L	1	4/2/2022 3:43:42 PM	66355
2,4-Dimethylphenol	4.1	0.97	5.0	J	µg/L	1	4/2/2022 3:43:42 PM	66355
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	4/2/2022 3:43:42 PM	66355
1-Methylnaphthalene	45	0.60	5.0		µg/L	1	4/2/2022 3:43:42 PM	66355
2-Methylphenol	ND	0.51	5.0		µg/L	1	4/2/2022 3:43:42 PM	66355
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	4/2/2022 3:43:42 PM	66355
Phenol	48	0.33	5.0		µg/L	1	4/2/2022 3:43:42 PM	66355
Pyridine	ND	10	10		µg/L	1	4/2/2022 3:43:42 PM	66355
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	4/2/2022 3:43:42 PM	66355
Surr: 2-Fluorophenol	52.7	0	29.4-87.7		%Rec	1	4/2/2022 3:43:42 PM	66355
Surr: Phenol-d5	41.0	0	28.5-64.7		%Rec	1	4/2/2022 3:43:42 PM	66355
Surr: 2,4,6-Tribromophenol	87.0	0	18.6-129		%Rec	1	4/2/2022 3:43:42 PM	66355
Surr: Nitrobenzene-d5	69.8	0	36.9-103		%Rec	1	4/2/2022 3:43:42 PM	66355
Surr: 2-Fluorobiphenyl	59.2	0	38.1-99.9		%Rec	1	4/2/2022 3:43:42 PM	66355
Surr: 4-Terphenyl-d14	82.9	0	48-155		%Rec	1	4/2/2022 3:43:42 PM	66355
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	2.5	0.048	1.0		µg/L	1	3/28/2022 9:21:00 PM	R86800
Naphthalene	18	0.034	0.10		µg/L	1	3/28/2022 9:21:00 PM	R86800
2-Methylnaphthalene	10	0.034	0.10		µg/L	1	3/28/2022 9:21:00 PM	R86800
Acenaphthene	2.8	0.031	0.10		µg/L	1	3/28/2022 9:21:00 PM	R86800
Fluorene	2.8	0.031	0.10		µg/L	1	3/28/2022 9:21:00 PM	R86800
Phenanthrene	0.64	0.057	0.10		µg/L	1	3/28/2022 9:21:00 PM	R86800
Anthracene	0.26	0.034	0.10		µg/L	1	3/28/2022 9:21:00 PM	R86800
Fluoranthene	ND	0.10	0.20		µg/L	1	3/28/2022 9:21:00 PM	R86800
Pyrene	ND	0.16	0.20		µg/L	1	3/28/2022 9:21:00 PM	R86800
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/28/2022 9:21:00 PM	R86800
Chrysene	ND	0.024	0.10		µg/L	1	3/28/2022 9:21:00 PM	R86800
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/28/2022 9:21:00 PM	R86800
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/28/2022 9:21:00 PM	R86800

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPIS-2
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022 10:00:00 AM
Lab ID: 2203B95-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	63.3	0	31.6-100		%Rec	1	3/28/2022 9:21:00 PM	R86800
Surr: 2-Fluorobiphenyl	54.5	0	26.7-90.1		%Rec	1	3/28/2022 9:21:00 PM	R86800
Surr: 4-Terphenyl-d14	75.4	0	72.3-147		%Rec	1	3/28/2022 9:21:00 PM	R86800

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPIS-2
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022 10:00:00 AM
Lab ID: 2203B95-006D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	5.1	0.016	0.030	*	mg/L	10	4/6/2022 5:12:16 PM	66643
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 2:38:48 PM	66643
Cadmium	ND	0.0015	0.0020		mg/L	1	4/6/2022 2:38:48 PM	66643
Chromium	ND	0.0021	0.0060		mg/L	1	4/6/2022 2:38:48 PM	66643
Cobalt	0.0036	0.0024	0.0060	J	mg/L	1	4/6/2022 2:38:48 PM	66643
Nickel	0.053	0.0033	0.010		mg/L	1	4/6/2022 2:38:48 PM	66643
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 2:38:48 PM	66643
Vanadium	0.011	0.0024	0.050	J	mg/L	1	4/6/2022 2:38:48 PM	66643
Zinc	0.016	0.0064	0.010		mg/L	1	4/6/2022 2:38:48 PM	66643
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/29/2022 1:08:18 PM	66440
Arsenic	0.0050	0.00013	0.0010		mg/L	1	3/29/2022 1:08:18 PM	66440
Lead	0.0033	0.000061	0.00050		mg/L	1	3/29/2022 1:08:18 PM	66440
Selenium	0.00062	0.00037	0.0010	J	mg/L	1	3/29/2022 1:08:18 PM	66440
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/25/2022 3:14:45 PM	66396

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPIS-2
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022 10:00:00 AM
Lab ID: 2203B95-006E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	4.4	0.0056	0.010	*	mg/L	5	3/24/2022 11:01:28 AM	B86739
Beryllium	ND	0.00088	0.0020		mg/L	1	3/24/2022 11:00:01 AM	B86739
Cadmium	ND	0.00098	0.0020		mg/L	1	3/24/2022 11:00:01 AM	B86739
Chromium	ND	0.0020	0.0060		mg/L	1	3/24/2022 11:00:01 AM	B86739
Cobalt	ND	0.0024	0.0060		mg/L	1	3/24/2022 11:00:01 AM	B86739
Nickel	0.056	0.0033	0.010		mg/L	1	3/24/2022 11:00:01 AM	B86739
Silver	ND	0.0013	0.0050		mg/L	1	3/24/2022 11:00:01 AM	B86739
Vanadium	ND	0.0017	0.050		mg/L	1	3/24/2022 11:00:01 AM	B86739
Zinc	0.0080	0.0032	0.010	J	mg/L	1	3/24/2022 11:45:34 AM	B86739
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/24/2022 2:35:36 PM	B86714
Arsenic	0.0018	0.00012	0.0010		mg/L	1	3/24/2022 2:35:36 PM	B86714
Lead	0.00026	0.000057	0.00050	J	mg/L	1	3/24/2022 2:35:36 PM	B86714
Selenium	0.00046	0.00034	0.0010	J	mg/L	1	3/24/2022 2:35:36 PM	B86714
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/29/2022 2:01:02 PM	66455

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OAPIS-1
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022 9:35:00 AM
Lab ID: 2203B95-007A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	6.1	1.1	5.0		µg/L	5	3/24/2022 6:10:45 PM	R86734
Toluene	ND	1.0	5.0		µg/L	5	3/24/2022 6:10:45 PM	R86734
Ethylbenzene	ND	1.1	5.0		µg/L	5	3/24/2022 6:10:45 PM	R86734
Methyl tert-butyl ether (MTBE)	270	2.0	5.0		µg/L	5	3/24/2022 6:10:45 PM	R86734
1,2,4-Trimethylbenzene	ND	0.61	5.0		µg/L	5	3/24/2022 6:10:45 PM	R86734
1,3,5-Trimethylbenzene	ND	0.91	5.0		µg/L	5	3/24/2022 6:10:45 PM	R86734
1,2-Dichloroethane (EDC)	ND	1.3	5.0		µg/L	5	3/24/2022 6:10:45 PM	R86734
Acetone	ND	13	50		µg/L	5	3/24/2022 6:10:45 PM	R86734
Bromomethane	ND	4.3	15		µg/L	5	3/24/2022 6:10:45 PM	R86734
2-Butanone	ND	10	50		µg/L	5	3/24/2022 6:10:45 PM	R86734
Carbon disulfide	ND	3.0	50		µg/L	5	3/24/2022 6:10:45 PM	R86734
Chlorobenzene	ND	0.78	5.0		µg/L	5	3/24/2022 6:10:45 PM	R86734
Chloroform	ND	0.67	5.0		µg/L	5	3/24/2022 6:10:45 PM	R86734
Chloromethane	ND	2.1	15		µg/L	5	3/24/2022 6:10:45 PM	R86734
cis-1,2-DCE	ND	1.9	5.0		µg/L	5	3/24/2022 6:10:45 PM	R86734
1,1-Dichloroethane	2.8	1.4	5.0	J	µg/L	5	3/24/2022 6:10:45 PM	R86734
1,1-Dichloroethene	ND	1.0	5.0		µg/L	5	3/24/2022 6:10:45 PM	R86734
Isopropylbenzene	ND	0.91	5.0		µg/L	5	3/24/2022 6:10:45 PM	R86734
4-Isopropyltoluene	ND	1.0	5.0		µg/L	5	3/24/2022 6:10:45 PM	R86734
Methylene Chloride	ND	2.5	15		µg/L	5	3/24/2022 6:10:45 PM	R86734
n-Butylbenzene	ND	1.3	15		µg/L	5	3/24/2022 6:10:45 PM	R86734
n-Propylbenzene	ND	0.91	5.0		µg/L	5	3/24/2022 6:10:45 PM	R86734
sec-Butylbenzene	ND	0.72	5.0		µg/L	5	3/24/2022 6:10:45 PM	R86734
Styrene	ND	0.68	5.0		µg/L	5	3/24/2022 6:10:45 PM	R86734
Tetrachloroethene (PCE)	ND	1.8	5.0		µg/L	5	3/24/2022 6:10:45 PM	R86734
1,1,1-Trichloroethane	ND	1.5	5.0		µg/L	5	3/24/2022 6:10:45 PM	R86734
Trichloroethene (TCE)	ND	1.0	5.0		µg/L	5	3/24/2022 6:10:45 PM	R86734
Vinyl chloride	ND	1.6	5.0		µg/L	5	3/24/2022 6:10:45 PM	R86734
Xylenes, Total	ND	1.9	7.5		µg/L	5	3/24/2022 6:10:45 PM	R86734
Surr: 1,2-Dichloroethane-d4	86.8	0	70-130		%Rec	5	3/24/2022 6:10:45 PM	R86734
Surr: 4-Bromofluorobenzene	100	0	70-130		%Rec	5	3/24/2022 6:10:45 PM	R86734
Surr: Dibromofluoromethane	88.6	0	70-130		%Rec	5	3/24/2022 6:10:45 PM	R86734
Surr: Toluene-d8	99.3	0	70-130		%Rec	5	3/24/2022 6:10:45 PM	R86734
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.56	0.14	0.25		mg/L	5	3/24/2022 6:10:45 PM	G86734
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	5	3/24/2022 6:10:45 PM	G86734

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OAPIS-1
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022 9:35:00 AM
Lab ID: 2203B95-007B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0035	0.0095		µg/L	1	3/29/2022 2:24:07 PM	66393

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OAPIS-1
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022 9:35:00 AM
Lab ID: 2203B95-007C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	7.0	0.080	0.32		mg/L	5	3/29/2022 5:05:19 PM	66385
Motor Oil Range Organics (MRO)	0.96	0.26	0.40		mg/L	5	3/29/2022 5:05:19 PM	66385
Surr: DNOP	96.4	0	42.2-138		%Rec	5	3/29/2022 5:05:19 PM	66385
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	1.1	20		µg/L	1	4/2/2022 4:26:41 PM	66355
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	4/2/2022 4:26:41 PM	66355
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	4/2/2022 4:26:41 PM	66355
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	4/2/2022 4:26:41 PM	66355
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	4/2/2022 4:26:41 PM	66355
Diethyl phthalate	ND	3.9	10		µg/L	1	4/2/2022 4:26:41 PM	66355
Dimethyl phthalate	ND	2.0	10		µg/L	1	4/2/2022 4:26:41 PM	66355
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	4/2/2022 4:26:41 PM	66355
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	4/2/2022 4:26:41 PM	66355
2-Methylphenol	ND	0.51	5.0		µg/L	1	4/2/2022 4:26:41 PM	66355
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	4/2/2022 4:26:41 PM	66355
Phenol	ND	0.33	5.0		µg/L	1	4/2/2022 4:26:41 PM	66355
Pyridine	ND	10	10		µg/L	1	4/2/2022 4:26:41 PM	66355
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	4/2/2022 4:26:41 PM	66355
Surr: 2-Fluorophenol	54.4	0	29.4-87.7		%Rec	1	4/2/2022 4:26:41 PM	66355
Surr: Phenol-d5	43.6	0	28.5-64.7		%Rec	1	4/2/2022 4:26:41 PM	66355
Surr: 2,4,6-Tribromophenol	81.2	0	18.6-129		%Rec	1	4/2/2022 4:26:41 PM	66355
Surr: Nitrobenzene-d5	67.9	0	36.9-103		%Rec	1	4/2/2022 4:26:41 PM	66355
Surr: 2-Fluorobiphenyl	63.3	0	38.1-99.9		%Rec	1	4/2/2022 4:26:41 PM	66355
Surr: 4-Terphenyl-d14	82.8	0	48-155		%Rec	1	4/2/2022 4:26:41 PM	66355
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	1.9	0.048	1.0		µg/L	1	3/28/2022 10:10:00 PM	R86800
Naphthalene	ND	0.034	0.10		µg/L	1	3/28/2022 10:10:00 PM	R86800
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/28/2022 10:10:00 PM	R86800
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/28/2022 10:10:00 PM	R86800
Acenaphthene	ND	0.031	0.10		µg/L	1	3/28/2022 10:10:00 PM	R86800
Fluorene	ND	0.031	0.10		µg/L	1	3/28/2022 10:10:00 PM	R86800
Phenanthrene	ND	0.057	0.10		µg/L	1	3/28/2022 10:10:00 PM	R86800
Anthracene	ND	0.034	0.10		µg/L	1	3/28/2022 10:10:00 PM	R86800
Fluoranthene	ND	0.10	0.20		µg/L	1	3/28/2022 10:10:00 PM	R86800
Pyrene	0.22	0.16	0.20		µg/L	1	3/28/2022 10:10:00 PM	R86800
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/28/2022 10:10:00 PM	R86800
Chrysene	ND	0.024	0.10		µg/L	1	3/28/2022 10:10:00 PM	R86800
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/28/2022 10:10:00 PM	R86800
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/28/2022 10:10:00 PM	R86800

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OAPIS-1
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022 9:35:00 AM
Lab ID: 2203B95-007C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	63.1	0	31.6-100		%Rec	1	3/28/2022 10:10:00 PM	R86800
Surr: 2-Fluorobiphenyl	56.6	0	26.7-90.1		%Rec	1	3/28/2022 10:10:00 PM	R86800
Surr: 4-Terphenyl-d14	72.8	0	72.3-147		%Rec	1	3/28/2022 10:10:00 PM	R86800

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OAPIS-1
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022 9:35:00 AM
Lab ID: 2203B95-007D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.97	0.0016	0.0030		mg/L	1	4/6/2022 2:41:38 PM	66643
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 2:41:38 PM	66643
Cadmium	ND	0.0015	0.0020		mg/L	1	4/6/2022 2:41:38 PM	66643
Chromium	ND	0.0021	0.0060		mg/L	1	4/6/2022 2:41:38 PM	66643
Cobalt	0.010	0.0024	0.0060		mg/L	1	4/6/2022 2:41:38 PM	66643
Nickel	0.16	0.0033	0.010	*	mg/L	1	4/6/2022 2:41:38 PM	66643
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 2:41:38 PM	66643
Vanadium	0.029	0.0024	0.050	J	mg/L	1	4/6/2022 2:41:38 PM	66643
Zinc	0.019	0.0064	0.010		mg/L	1	4/6/2022 2:41:38 PM	66643
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	3/29/2022 1:10:44 PM	66440
Arsenic	0.0054	0.00063	0.0050		mg/L	5	3/29/2022 1:10:44 PM	66440
Lead	0.0055	0.00031	0.0025		mg/L	5	3/29/2022 1:10:44 PM	66440
Selenium	ND	0.0019	0.0050		mg/L	5	3/29/2022 1:10:44 PM	66440
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/25/2022 3:16:54 PM	66396

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OAPIS-1
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022 9:35:00 AM
Lab ID: 2203B95-007E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.94	0.0011	0.0020		mg/L	1	3/24/2022 11:47:16 AM	B86739
Beryllium	ND	0.00088	0.0020		mg/L	1	3/24/2022 11:47:16 AM	B86739
Cadmium	ND	0.00098	0.0020		mg/L	1	3/24/2022 11:47:16 AM	B86739
Chromium	ND	0.0020	0.0060		mg/L	1	3/24/2022 11:47:16 AM	B86739
Cobalt	0.011	0.0024	0.0060		mg/L	1	3/24/2022 11:47:16 AM	B86739
Nickel	0.16	0.0033	0.010	*	mg/L	1	3/24/2022 11:47:16 AM	B86739
Silver	ND	0.0013	0.0050		mg/L	1	3/24/2022 11:47:16 AM	B86739
Vanadium	0.024	0.0017	0.050	J	mg/L	1	3/24/2022 11:47:16 AM	B86739
Zinc	0.025	0.0032	0.010		mg/L	1	3/24/2022 11:47:16 AM	B86739
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	3/24/2022 2:38:18 PM	B86714
Arsenic	0.0050	0.00061	0.0050	J	mg/L	5	3/24/2022 2:38:18 PM	B86714
Lead	0.0059	0.00028	0.0025		mg/L	5	3/24/2022 2:38:18 PM	B86714
Selenium	ND	0.0017	0.0050		mg/L	5	3/24/2022 2:38:18 PM	B86714
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/29/2022 2:03:12 PM	66455

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-22-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022
Lab ID: 2203B95-008A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	5.0	0.23	1.0		µg/L	1	3/24/2022 6:39:23 PM	R86734
Toluene	0.21	0.20	1.0	J	µg/L	1	3/24/2022 6:39:23 PM	R86734
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/24/2022 6:39:23 PM	R86734
Methyl tert-butyl ether (MTBE)	51	0.39	1.0		µg/L	1	3/24/2022 6:39:23 PM	R86734
1,2,4-Trimethylbenzene	0.40	0.12	1.0	J	µg/L	1	3/24/2022 6:39:23 PM	R86734
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/24/2022 6:39:23 PM	R86734
1,2-Dichloroethane (EDC)	17	0.25	1.0		µg/L	1	3/24/2022 6:39:23 PM	R86734
Acetone	ND	2.5	10		µg/L	1	3/24/2022 6:39:23 PM	R86734
Bromomethane	ND	0.85	3.0		µg/L	1	3/24/2022 6:39:23 PM	R86734
2-Butanone	ND	2.0	10		µg/L	1	3/24/2022 6:39:23 PM	R86734
Carbon disulfide	ND	0.59	10		µg/L	1	3/24/2022 6:39:23 PM	R86734
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/24/2022 6:39:23 PM	R86734
Chloroform	ND	0.13	1.0		µg/L	1	3/24/2022 6:39:23 PM	R86734
Chloromethane	ND	0.41	3.0		µg/L	1	3/24/2022 6:39:23 PM	R86734
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/24/2022 6:39:23 PM	R86734
1,1-Dichloroethane	0.80	0.27	1.0	J	µg/L	1	3/24/2022 6:39:23 PM	R86734
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/24/2022 6:39:23 PM	R86734
Isopropylbenzene	20	0.18	1.0		µg/L	1	3/24/2022 6:39:23 PM	R86734
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/24/2022 6:39:23 PM	R86734
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/24/2022 6:39:23 PM	R86734
n-Butylbenzene	0.96	0.25	3.0	J	µg/L	1	3/24/2022 6:39:23 PM	R86734
n-Propylbenzene	0.92	0.18	1.0	J	µg/L	1	3/24/2022 6:39:23 PM	R86734
sec-Butylbenzene	4.2	0.14	1.0		µg/L	1	3/24/2022 6:39:23 PM	R86734
Styrene	ND	0.14	1.0		µg/L	1	3/24/2022 6:39:23 PM	R86734
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/24/2022 6:39:23 PM	R86734
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/24/2022 6:39:23 PM	R86734
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/24/2022 6:39:23 PM	R86734
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/24/2022 6:39:23 PM	R86734
Xylenes, Total	1.8	0.37	1.5		µg/L	1	3/24/2022 6:39:23 PM	R86734
Surr: 1,2-Dichloroethane-d4	88.9	0	70-130		%Rec	1	3/24/2022 6:39:23 PM	R86734
Surr: 4-Bromofluorobenzene	99.5	0	70-130		%Rec	1	3/24/2022 6:39:23 PM	R86734
Surr: Dibromofluoromethane	89.9	0	70-130		%Rec	1	3/24/2022 6:39:23 PM	R86734
Surr: Toluene-d8	101	0	70-130		%Rec	1	3/24/2022 6:39:23 PM	R86734
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.69	0.028	0.050		mg/L	1	3/24/2022 6:39:23 PM	G86734
Surr: 4-Bromofluorobenzene	108	0	70-130		%Rec	1	3/24/2022 6:39:23 PM	G86734

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-22-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022
Lab ID: 2203B95-008B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0035	0.0094		µg/L	1	3/29/2022 2:39:23 PM	66393

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-22-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022
Lab ID: 2203B95-008C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	1.1	0.016	0.064		mg/L	1	3/28/2022 5:38:35 PM	66385
Motor Oil Range Organics (MRO)	0.058	0.052	0.080	J	mg/L	1	3/28/2022 5:38:35 PM	66385
Surr: DNOP	110	0	42.2-138		%Rec	1	3/28/2022 5:38:35 PM	66385
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	1.1	20		µg/L	1	4/2/2022 5:09:38 PM	66355
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	4/2/2022 5:09:38 PM	66355
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	4/2/2022 5:09:38 PM	66355
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	4/2/2022 5:09:38 PM	66355
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	4/2/2022 5:09:38 PM	66355
Diethyl phthalate	ND	3.9	10		µg/L	1	4/2/2022 5:09:38 PM	66355
Dimethyl phthalate	ND	2.0	10		µg/L	1	4/2/2022 5:09:38 PM	66355
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	4/2/2022 5:09:38 PM	66355
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	4/2/2022 5:09:38 PM	66355
2-Methylphenol	ND	0.51	5.0		µg/L	1	4/2/2022 5:09:38 PM	66355
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	4/2/2022 5:09:38 PM	66355
Phenol	ND	0.33	5.0		µg/L	1	4/2/2022 5:09:38 PM	66355
Pyridine	ND	10	10		µg/L	1	4/2/2022 5:09:38 PM	66355
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	4/2/2022 5:09:38 PM	66355
Surr: 2-Fluorophenol	55.6	0	29.4-87.7		%Rec	1	4/2/2022 5:09:38 PM	66355
Surr: Phenol-d5	40.3	0	28.5-64.7		%Rec	1	4/2/2022 5:09:38 PM	66355
Surr: 2,4,6-Tribromophenol	102	0	18.6-129		%Rec	1	4/2/2022 5:09:38 PM	66355
Surr: Nitrobenzene-d5	75.9	0	36.9-103		%Rec	1	4/2/2022 5:09:38 PM	66355
Surr: 2-Fluorobiphenyl	71.3	0	38.1-99.9		%Rec	1	4/2/2022 5:09:38 PM	66355
Surr: 4-Terphenyl-d14	90.9	0	48-155		%Rec	1	4/2/2022 5:09:38 PM	66355
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.048	1.0		µg/L	1	3/28/2022 10:58:00 PM	R86800
Naphthalene	0.26	0.034	0.10		µg/L	1	3/28/2022 10:58:00 PM	R86800
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/28/2022 10:58:00 PM	R86800
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/28/2022 10:58:00 PM	R86800
Acenaphthene	0.22	0.031	0.10		µg/L	1	3/28/2022 10:58:00 PM	R86800
Fluorene	ND	0.031	0.10		µg/L	1	3/28/2022 10:58:00 PM	R86800
Phenanthrene	1.0	0.057	0.10		µg/L	1	3/28/2022 10:58:00 PM	R86800
Anthracene	0.26	0.034	0.10		µg/L	1	3/28/2022 10:58:00 PM	R86800
Fluoranthene	ND	0.10	0.20		µg/L	1	3/28/2022 10:58:00 PM	R86800
Pyrene	0.26	0.16	0.20		µg/L	1	3/28/2022 10:58:00 PM	R86800
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/28/2022 10:58:00 PM	R86800
Chrysene	ND	0.024	0.10		µg/L	1	3/28/2022 10:58:00 PM	R86800
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/28/2022 10:58:00 PM	R86800
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/28/2022 10:58:00 PM	R86800

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-22-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022
Lab ID: 2203B95-008C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	65.7	0	31.6-100		%Rec	1	3/28/2022 10:58:00 PM	R86800
Surr: 2-Fluorobiphenyl	58.2	0	26.7-90.1		%Rec	1	3/28/2022 10:58:00 PM	R86800
Surr: 4-Terphenyl-d14	75.5	0	72.3-147		%Rec	1	3/28/2022 10:58:00 PM	R86800

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-22-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022
Lab ID: 2203B95-008D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.83	0.0016	0.0030		mg/L	1	4/6/2022 2:44:30 PM	66644
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 2:44:30 PM	66644
Cadmium	ND	0.0015	0.0020		mg/L	1	4/6/2022 2:44:30 PM	66644
Chromium	0.0081	0.0021	0.0060		mg/L	1	4/6/2022 2:44:30 PM	66644
Cobalt	0.010	0.0024	0.0060		mg/L	1	4/6/2022 2:44:30 PM	66644
Nickel	0.046	0.0033	0.010		mg/L	1	4/6/2022 2:44:30 PM	66644
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 2:44:30 PM	66644
Vanadium	0.015	0.0024	0.050	J	mg/L	1	4/6/2022 2:44:30 PM	66644
Zinc	0.012	0.0064	0.010		mg/L	1	4/6/2022 2:44:30 PM	66644
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/29/2022 1:13:11 PM	66440
Arsenic	0.0034	0.00013	0.0010		mg/L	1	3/29/2022 1:13:11 PM	66440
Lead	0.0029	0.000061	0.00050		mg/L	1	3/29/2022 1:13:11 PM	66440
Selenium	0.00070	0.00037	0.0010	J	mg/L	1	3/29/2022 1:13:11 PM	66440
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/25/2022 3:19:03 PM	66396

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-22-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022
Lab ID: 2203B95-008E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.55	0.0011	0.0020		mg/L	1	3/24/2022 11:06:32 AM	B86739
Beryllium	ND	0.00088	0.0020		mg/L	1	3/24/2022 11:06:32 AM	B86739
Cadmium	ND	0.00098	0.0020		mg/L	1	3/24/2022 11:06:32 AM	B86739
Chromium	ND	0.0020	0.0060		mg/L	1	3/24/2022 11:06:32 AM	B86739
Cobalt	0.0078	0.0024	0.0060		mg/L	1	3/24/2022 11:06:32 AM	B86739
Nickel	0.048	0.0033	0.010		mg/L	1	3/24/2022 11:06:32 AM	B86739
Silver	ND	0.0013	0.0050		mg/L	1	3/24/2022 11:06:32 AM	B86739
Vanadium	0.0037	0.0017	0.050	J	mg/L	1	3/24/2022 11:06:32 AM	B86739
Zinc	0.010	0.0032	0.010		mg/L	1	3/24/2022 11:48:44 AM	B86739
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/24/2022 2:40:59 PM	B86714
Arsenic	0.0013	0.00012	0.0010		mg/L	1	3/24/2022 2:40:59 PM	B86714
Lead	0.00014	0.000057	0.00050	J	mg/L	1	3/24/2022 2:40:59 PM	B86714
Selenium	ND	0.00034	0.0010		mg/L	1	3/24/2022 2:40:59 PM	B86714
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/29/2022 2:05:20 PM	66455

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB-3-22-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/22/2022 11:00:00 AM
Lab ID: 2203B95-009A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	3/24/2022 7:07:50 PM	R86734
Toluene	ND	0.20	1.0		µg/L	1	3/24/2022 7:07:50 PM	R86734
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/24/2022 7:07:50 PM	R86734
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/24/2022 7:07:50 PM	R86734
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/24/2022 7:07:50 PM	R86734
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/24/2022 7:07:50 PM	R86734
1,2-Dichloroethane (EDC)	0.42	0.25	1.0	J	µg/L	1	3/24/2022 7:07:50 PM	R86734
Acetone	ND	2.5	10		µg/L	1	3/24/2022 7:07:50 PM	R86734
Bromomethane	ND	0.85	3.0		µg/L	1	3/24/2022 7:07:50 PM	R86734
2-Butanone	4.6	2.0	10	J	µg/L	1	3/24/2022 7:07:50 PM	R86734
Carbon disulfide	ND	0.59	10		µg/L	1	3/24/2022 7:07:50 PM	R86734
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/24/2022 7:07:50 PM	R86734
Chloroform	ND	0.13	1.0		µg/L	1	3/24/2022 7:07:50 PM	R86734
Chloromethane	0.76	0.41	3.0	J	µg/L	1	3/24/2022 7:07:50 PM	R86734
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/24/2022 7:07:50 PM	R86734
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/24/2022 7:07:50 PM	R86734
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/24/2022 7:07:50 PM	R86734
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/24/2022 7:07:50 PM	R86734
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/24/2022 7:07:50 PM	R86734
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/24/2022 7:07:50 PM	R86734
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/24/2022 7:07:50 PM	R86734
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/24/2022 7:07:50 PM	R86734
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/24/2022 7:07:50 PM	R86734
Styrene	ND	0.14	1.0		µg/L	1	3/24/2022 7:07:50 PM	R86734
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/24/2022 7:07:50 PM	R86734
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/24/2022 7:07:50 PM	R86734
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/24/2022 7:07:50 PM	R86734
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/24/2022 7:07:50 PM	R86734
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/24/2022 7:07:50 PM	R86734
Surr: 1,2-Dichloroethane-d4	85.0	0	70-130		%Rec	1	3/24/2022 7:07:50 PM	R86734
Surr: 4-Bromofluorobenzene	96.3	0	70-130		%Rec	1	3/24/2022 7:07:50 PM	R86734
Surr: Dibromofluoromethane	91.2	0	70-130		%Rec	1	3/24/2022 7:07:50 PM	R86734
Surr: Toluene-d8	103	0	70-130		%Rec	1	3/24/2022 7:07:50 PM	R86734

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 1st Qtr
Collection Date:
Lab ID: 2203B95-010A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	3/24/2022 7:36:15 PM	R86734
Toluene	ND	0.20	1.0		µg/L	1	3/24/2022 7:36:15 PM	R86734
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/24/2022 7:36:15 PM	R86734
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/24/2022 7:36:15 PM	R86734
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/24/2022 7:36:15 PM	R86734
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/24/2022 7:36:15 PM	R86734
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	3/24/2022 7:36:15 PM	R86734
Acetone	ND	2.5	10		µg/L	1	3/24/2022 7:36:15 PM	R86734
Bromomethane	ND	0.85	3.0		µg/L	1	3/24/2022 7:36:15 PM	R86734
2-Butanone	ND	2.0	10		µg/L	1	3/24/2022 7:36:15 PM	R86734
Carbon disulfide	ND	0.59	10		µg/L	1	3/24/2022 7:36:15 PM	R86734
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/24/2022 7:36:15 PM	R86734
Chloroform	ND	0.13	1.0		µg/L	1	3/24/2022 7:36:15 PM	R86734
Chloromethane	0.70	0.41	3.0	J	µg/L	1	3/24/2022 7:36:15 PM	R86734
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/24/2022 7:36:15 PM	R86734
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/24/2022 7:36:15 PM	R86734
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/24/2022 7:36:15 PM	R86734
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/24/2022 7:36:15 PM	R86734
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/24/2022 7:36:15 PM	R86734
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/24/2022 7:36:15 PM	R86734
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/24/2022 7:36:15 PM	R86734
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/24/2022 7:36:15 PM	R86734
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/24/2022 7:36:15 PM	R86734
Styrene	ND	0.14	1.0		µg/L	1	3/24/2022 7:36:15 PM	R86734
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/24/2022 7:36:15 PM	R86734
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/24/2022 7:36:15 PM	R86734
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/24/2022 7:36:15 PM	R86734
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/24/2022 7:36:15 PM	R86734
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/24/2022 7:36:15 PM	R86734
Surr: 1,2-Dichloroethane-d4	82.1	0	70-130		%Rec	1	3/24/2022 7:36:15 PM	R86734
Surr: 4-Bromofluorobenzene	100	0	70-130		%Rec	1	3/24/2022 7:36:15 PM	R86734
Surr: Dibromofluoromethane	89.7	0	70-130		%Rec	1	3/24/2022 7:36:15 PM	R86734
Surr: Toluene-d8	99.3	0	70-130		%Rec	1	3/24/2022 7:36:15 PM	R86734

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203B95**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 1st Qtr
Collection Date:
Lab ID: 2203B95-010B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0035	0.0095		µg/L	1	3/29/2022 2:54:36 PM	66393

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

ANALYTICAL REPORT

April 04, 2022

Hall Environmental Analysis Laboratory

Sample Delivery Group: L1474926

Samples Received: 03/24/2022

Project Number:

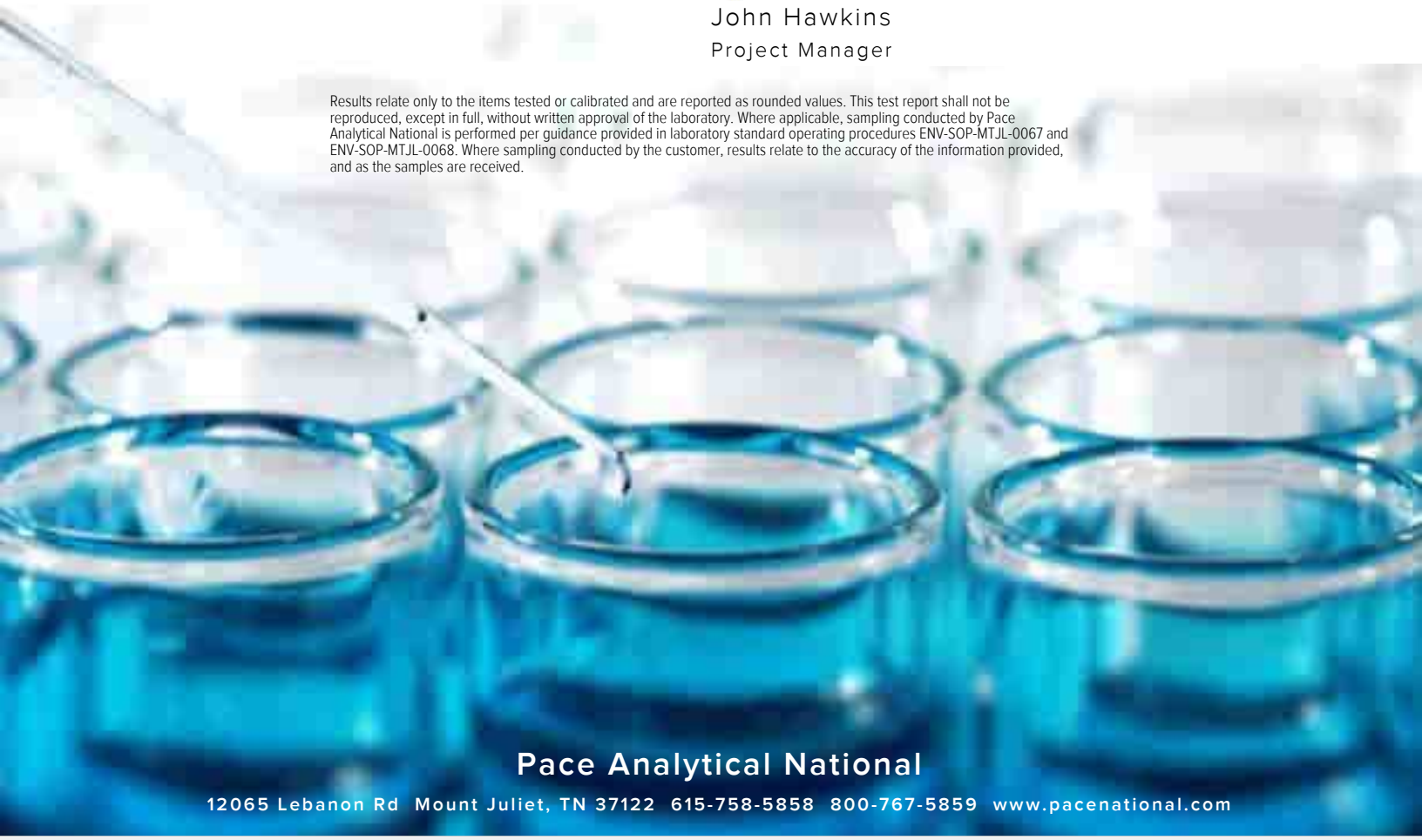
Description:

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By:

John Hawkins
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 4

Sr: Sample Results 5

2203B95-001F EB 3-22-22 L1474926-01 5

2203B95-002F OW-70 L1474926-02 6

2203B95-003F OW-12A L1474926-03 7

2203B95-004F KA-3 L1474926-04 8

2203B95-005F NAPIS-3 L1474926-05 9

2203B95-006F NAPIS-2 L1474926-06 10

2203B95-007F OAPIS-1 L1474926-07 11

2203B95-008B DUP-3-22-22 L1474926-08 12

Qc: Quality Control Summary 13

Wet Chemistry by Method 4500CN E-2016 13

Gl: Glossary of Terms 15

Al: Accreditations & Locations 16

Sc: Sample Chain of Custody 17

Collected by | Collected date/time | Received date/time

2203B95-001F EB 3-22-22 L1474926-01 GW

03/22/22 08:15 | 03/24/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1838531	1	03/28/22 08:13	03/29/22 17:23	CAT	Mt. Juliet, TN

Collected by | Collected date/time | Received date/time

2203B95-002F OW-70 L1474926-02 GW

03/22/22 08:20 | 03/24/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1838531	1	03/28/22 08:13	03/29/22 17:26	CAT	Mt. Juliet, TN

Collected by | Collected date/time | Received date/time

2203B95-003F OW-12A L1474926-03 GW

03/22/22 09:15 | 03/24/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1838531	1	03/28/22 08:13	03/29/22 17:27	CAT	Mt. Juliet, TN

Collected by | Collected date/time | Received date/time

2203B95-004F KA-3 L1474926-04 GW

03/22/22 11:00 | 03/24/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1838531	1	03/28/22 08:13	03/29/22 17:30	CAT	Mt. Juliet, TN

Collected by | Collected date/time | Received date/time

2203B95-005F NAPIS-3 L1474926-05 GW

03/22/22 10:30 | 03/24/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1838531	1	03/28/22 08:13	03/29/22 17:31	CAT	Mt. Juliet, TN

Collected by | Collected date/time | Received date/time

2203B95-006F NAPIS-2 L1474926-06 GW

03/22/22 10:00 | 03/24/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1838531	1	03/28/22 08:13	03/29/22 17:32	CAT	Mt. Juliet, TN

Collected by | Collected date/time | Received date/time

2203B95-007F OAPIS-1 L1474926-07 GW

03/22/22 09:35 | 03/24/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1838531	1	03/28/22 08:13	03/29/22 17:33	CAT	Mt. Juliet, TN

Collected by | Collected date/time | Received date/time

2203B95-008B DUP-3-22-22 L1474926-08 GW

03/22/22 00:00 | 03/24/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1839312	1	03/28/22 15:55	04/01/22 13:18	LDT	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	03/29/2022 17:23	WG1838531

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	03/29/2022 17:26	WG1838531

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	03/29/2022 17:27	WG1838531

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.0121		0.00500	1	03/29/2022 17:30	WG1838531

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.00935		0.00500	1	03/29/2022 17:31	WG1838531

Received by OCD: 4/21/2023 9:21:57 AM

2203B93-0001 NAPIS-2
Collected date/time: 03/22/22 10:00
L1474926

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.0123		0.00500	1	03/29/2022 17:32	WG1838531

Released to Imaging: 4/21/2023 9:40:26 AM

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.0679		0.00500	1	03/29/2022 17:33	WG1838531

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	04/01/2022 13:18	WG1839312

Method Blank (MB)

(MB) R3775338-1 03/29/22 16:59

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1474866-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1474866-01 03/29/22 17:06 • (DUP) R3775338-3 03/29/22 17:07

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	0.0336	0.0313	1	7.09		20

L1474926-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1474926-01 03/29/22 17:23 • (DUP) R3775338-6 03/29/22 17:25

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3775338-2 03/29/22 17:00

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.0971	97.1	87.1-120	

L1474866-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1474866-03 03/29/22 17:11 • (MS) R3775338-4 03/29/22 17:12 • (MSD) R3775338-5 03/29/22 17:13

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0933	0.0932	93.3	93.2	1	90.0-110			0.107	20

L1474926-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1474926-03 03/29/22 17:27 • (MS) R3775338-7 03/29/22 17:28 • (MSD) R3775338-8 03/29/22 17:29

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0984	0.0966	98.4	96.6	1	90.0-110			1.85	20

Received by OCD: 4/21/2023 9:21:57 AM

Method Blank (MB)

(MB) R3776612-1 04/01/22 13:14

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1474926-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1474926-08 04/01/22 13:18 • (DUP) R3776612-3 04/01/22 13:19

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

L1475080-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1475080-05 04/01/22 13:29 • (DUP) R3776612-6 04/01/22 13:30

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3776612-2 04/01/22 13:15

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.101	101	87.1-120	

L1475080-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1475080-01 04/01/22 13:21 • (MS) R3776612-4 04/01/22 13:22 • (MSD) R3776612-5 04/01/22 13:23

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0973	0.0284	97.3	28.4	1	90.0-110		J3 J6	110	20

L1475080-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1475080-06 04/01/22 13:32 • (MS) R3776612-7 04/01/22 13:33 • (MSD) R3776612-8 04/01/22 13:34

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.104	0.0773	99.8	73.1	1	90.0-110		J3 J6	29.5	20

Released to Imaging: 4/21/2023 9:40:26 AM

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Received by OCD: 4/21/2023 9:21:57 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

C113

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: clients.hallenvironmental.com

SUB CONTRATOR: Pace TN	COMPANY: PACE TN	PHONE: (800) 767-5859	FAX: (615) 758-5859		
ADDRESS: 12065 Lebanon Rd		ACCOUNT #	EMAIL:		
CITY, STATE, ZIP: Mt. Juliet, TN 37122				L1474926	

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	2203B95-001F	EB 3-22-22	500AMBHDP F-NAOH	Groundwater	3/22/2022 8:15:00 AM	1	Total Cyanide
2	2203B95-002F	OW-70	500AMBHDP F-NAOH	Groundwater	3/22/2022 8:20:00 AM	1	Total Cyanide
3	2203B95-003F	OW-12A	500AMBHDP F-NAOH	Groundwater	3/22/2022 9:15:00 AM	1	Total Cyanide
4	2203B95-004F	KA-3	500AMBHDP F-NAOH	Groundwater	3/22/2022 11:00:00 AM	1	Total Cyanide
5	2203B95-005F	NAPIS-3	500AMBHDP F-NAOH	Groundwater	3/22/2022 10:30:00 AM	1	Total Cyanide
6	2203B95-006F	NAPIS-2	500AMBHDP F-NAOH	Groundwater	3/22/2022 10:00:00 AM	1	Total Cyanide
7	2203B95-007F	OAPIS-1	500AMBHDP F-NAOH	Groundwater	3/22/2022 9:35:00 AM	1	Total Cyanide
8	2203B95-008F	DUP-3-22-22	500AMBHDP F-NAOH	Groundwater	3/22/2022	1	Total Cyanide

RCV >12 — 01 — 02 — 03 — 04 — 05 — 06 — 07 — 08

Sample Receipt Checklist

COC Seal Present/Intact:	Y N	If Applicable	
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	Y N	Pres.Correct/Check:	Y N
Correct bottles used:	Y N		
Sufficient volume sent:	Y N		
RAD Screen <0.5 mR/hr:	Y N		

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By:	Date: 3/23/2022	Time: 11:25 AM	Received By:	Date: 03/24/22	Time: 0900
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard X RUSH Next BD 2nd BD 3rd BD

REPORT TRANSMITTAL DESIRED:
HARDCOPY (extra cost) FAX EMAIL ONLINE

FOR LAB USE ONLY
Temp of samples 1.9 °C DRAFT Attempt to Cool ?
Comments:

Released to Imaging: 4/21/2023 9:40:26 AM

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203B95**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **B86739**	RunNo: **86739**
Prep Date:	Analysis Date: **3/24/2022**	SeqNo: **3062602** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **B86739**	RunNo: **86739**
Prep Date:	Analysis Date: **3/24/2022**	SeqNo: **3062604** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0020	0.0030	0.002000	0	99.9	50	150			J
Beryllium	0.0022	0.0020	0.002000	0	110	50	150			
Cadmium	0.0026	0.0020	0.002000	0	132	50	150			
Chromium	0.0061	0.0060	0.006000	0	102	50	150			
Cobalt	0.0068	0.0060	0.006000	0	113	50	150			
Nickel	0.0060	0.010	0.005000	0	119	50	150			J
Silver	0.0053	0.0050	0.005000	0	107	50	150			
Vanadium	0.010	0.050	0.01000	0	102	50	150			J
Zinc	0.010	0.010	0.01000	0	103	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **B86739**	RunNo: **86739**
Prep Date:	Analysis Date: **3/24/2022**	SeqNo: **3062606** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0030	0.5000	0	101	85	115			
Beryllium	0.52	0.0020	0.5000	0	103	85	115			
Cadmium	0.50	0.0020	0.5000	0	101	85	115			
Chromium	0.51	0.0060	0.5000	0	102	85	115			
Cobalt	0.50	0.0060	0.5000	0	100	85	115			
Nickel	0.49	0.010	0.5000	0	98.4	85	115			
Silver	0.10	0.0050	0.1000	0	102	85	115			
Vanadium	0.52	0.050	0.5000	0	104	85	115			
Zinc	0.50	0.010	0.5000	0	101	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203B95**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB-66643** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**

Client ID: **PBW** Batch ID: **66643** RunNo: **87030**

Prep Date: **4/5/2022** Analysis Date: **4/6/2022** SeqNo: **3075587** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS-66643** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**

Client ID: **BatchQC** Batch ID: **66643** RunNo: **87030**

Prep Date: **4/5/2022** Analysis Date: **4/6/2022** SeqNo: **3075588** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0021	0.0030	0.002000	0	105	50	150			J
Beryllium	0.0020	0.0020	0.002000	0	102	50	150			
Cadmium	0.0017	0.0020	0.002000	0	86.8	50	150			J
Chromium	0.0056	0.0060	0.006000	0	92.5	50	150			J
Cobalt	0.0068	0.0060	0.006000	0	114	50	150			
Nickel	0.0034	0.010	0.005000	0	69.0	50	150			J
Silver	0.0043	0.0050	0.005000	0	86.5	50	150			J
Vanadium	0.010	0.050	0.01000	0	101	50	150			J
Zinc	0.010	0.010	0.01000	0	99.8	50	150			J

Sample ID: **LCS-66643** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**

Client ID: **LCSW** Batch ID: **66643** RunNo: **87030**

Prep Date: **4/5/2022** Analysis Date: **4/6/2022** SeqNo: **3075589** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0030	0.5000	0	95.8	85	115			
Beryllium	0.52	0.0020	0.5000	0	103	85	115			
Cadmium	0.47	0.0020	0.5000	0	94.4	85	115			
Chromium	0.48	0.0060	0.5000	0	96.1	85	115			
Cobalt	0.46	0.0060	0.5000	0	92.4	85	115			
Nickel	0.46	0.010	0.5000	0	92.5	85	115			
Silver	0.099	0.0050	0.1000	0	98.6	85	115			
Vanadium	0.50	0.050	0.5000	0	99.5	85	115			
Zinc	0.47	0.010	0.5000	0	94.4	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203B95**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB-66644** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**

Client ID: **PBW** Batch ID: **66644** RunNo: **87030**

Prep Date: **4/5/2022** Analysis Date: **4/6/2022** SeqNo: **3075590** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS-66644** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**

Client ID: **BatchQC** Batch ID: **66644** RunNo: **87030**

Prep Date: **4/5/2022** Analysis Date: **4/6/2022** SeqNo: **3075594** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0019	0.0030	0.002000	0	95.8	50	150			J
Beryllium	0.0020	0.0020	0.002000	0	101	50	150			
Cadmium	0.0019	0.0020	0.002000	0	94.6	50	150			J
Chromium	0.0059	0.0060	0.006000	0	99.1	50	150			J
Cobalt	0.0066	0.0060	0.006000	0	110	50	150			
Nickel	0.0034	0.010	0.005000	0	67.0	50	150			J
Silver	0.0043	0.0050	0.005000	0	86.3	50	150			J
Vanadium	0.010	0.050	0.01000	0	104	50	150			J
Zinc	0.011	0.010	0.01000	0	105	50	150			

Sample ID: **LCS-66644** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**

Client ID: **LCSW** Batch ID: **66644** RunNo: **87030**

Prep Date: **4/5/2022** Analysis Date: **4/6/2022** SeqNo: **3075595** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0030	0.5000	0	96.8	85	115			
Beryllium	0.53	0.0020	0.5000	0	105	85	115			
Cadmium	0.48	0.0020	0.5000	0	95.3	85	115			
Chromium	0.49	0.0060	0.5000	0	98.1	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.5	85	115			
Nickel	0.47	0.010	0.5000	0	94.5	85	115			
Silver	0.097	0.0050	0.1000	0	96.7	85	115			
Vanadium	0.50	0.050	0.5000	0	99.3	85	115			
Zinc	0.49	0.010	0.5000	0	97.5	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203B95**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B86739**	RunNo: **86739**
Prep Date:	Analysis Date: **3/24/2022**	SeqNo: **3062603** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B86739**	RunNo: **86739**
Prep Date:	Analysis Date: **3/24/2022**	SeqNo: **3062605** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0020	0.0020	0.002000	0	99.9	50	150			J
Beryllium	0.0022	0.0020	0.002000	0	110	50	150			
Cadmium	0.0026	0.0020	0.002000	0	132	50	150			
Chromium	0.0061	0.0060	0.006000	0	102	50	150			
Cobalt	0.0068	0.0060	0.006000	0	113	50	150			
Nickel	0.0060	0.010	0.005000	0	119	50	150			J
Silver	0.0053	0.0050	0.005000	0	107	50	150			
Vanadium	0.010	0.050	0.01000	0	102	50	150			J
Zinc	0.010	0.010	0.01000	0	103	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B86739**	RunNo: **86739**
Prep Date:	Analysis Date: **3/24/2022**	SeqNo: **3062607** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0020	0.5000	0	101	85	115			
Beryllium	0.52	0.0020	0.5000	0	103	85	115			
Cadmium	0.50	0.0020	0.5000	0	101	85	115			
Chromium	0.51	0.0060	0.5000	0	102	85	115			
Cobalt	0.50	0.0060	0.5000	0	100	85	115			
Nickel	0.49	0.010	0.5000	0	98.4	85	115			
Silver	0.10	0.0050	0.1000	0	102	85	115			
Vanadium	0.52	0.050	0.5000	0	104	85	115			
Zinc	0.50	0.010	0.5000	0	101	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203B95**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB-66440** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **66440** RunNo: **86813**
Prep Date: **3/28/2022** Analysis Date: **3/29/2022** SeqNo: **3066571** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **MSLLLCS-66440** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **66440** RunNo: **86813**
Prep Date: **3/28/2022** Analysis Date: **3/29/2022** SeqNo: **3066572** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0010	0.0010	0.001000	0	101	50	150			
Arsenic	0.00098	0.0010	0.001000	0	97.8	50	150			J
Lead	0.00053	0.00050	0.0005000	0	106	50	150			
Selenium	0.00094	0.0010	0.001000	0	93.7	50	150			J

Sample ID: **MSLCS-66440** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **66440** RunNo: **86813**
Prep Date: **3/28/2022** Analysis Date: **3/29/2022** SeqNo: **3066573** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	104	85	115			
Arsenic	0.026	0.0010	0.02500	0	103	85	115			
Lead	0.013	0.00050	0.01250	0	104	85	115			
Selenium	0.024	0.0010	0.02500	0	96.6	85	115			

Sample ID: **2203B95-001DMSLL** SampType: **MS** TestCode: **EPA 200.8: Metals**
Client ID: **EB 3-22-22** Batch ID: **66440** RunNo: **86813**
Prep Date: **3/28/2022** Analysis Date: **3/29/2022** SeqNo: **3066580** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	104	70	130			
Arsenic	0.026	0.0010	0.02500	0	103	70	130			
Lead	0.013	0.00050	0.01250	0.0002684	102	70	130			
Selenium	0.024	0.0010	0.02500	0	95.1	70	130			

Sample ID: **2203B95-001DMSDL** SampType: **MSD** TestCode: **EPA 200.8: Metals**
Client ID: **EB 3-22-22** Batch ID: **66440** RunNo: **86813**
Prep Date: **3/28/2022** Analysis Date: **3/29/2022** SeqNo: **3066581** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203B95**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **2203B95-001DMSDL** SampType: **MSD** TestCode: **EPA 200.8: Metals**
Client ID: **EB 3-22-22** Batch ID: **66440** RunNo: **86813**
Prep Date: **3/28/2022** Analysis Date: **3/29/2022** SeqNo: **3066581** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	105	70	130	1.22	20	
Arsenic	0.025	0.0010	0.02500	0	102	70	130	0.813	20	
Lead	0.013	0.00050	0.01250	0.0002684	102	70	130	0.490	20	
Selenium	0.025	0.0010	0.02500	0	100	70	130	5.14	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203B95**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B86714**	RunNo: **86714**
Prep Date:	Analysis Date: **3/24/2022**	SeqNo: **3062323** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B86714**	RunNo: **86714**
Prep Date:	Analysis Date: **3/24/2022**	SeqNo: **3062324** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0010	0.0010	0.001000	0	102	50	150			
Arsenic	0.0011	0.0010	0.001000	0	107	50	150			
Lead	0.00052	0.00050	0.0005000	0	103	50	150			
Selenium	0.00080	0.0010	0.001000	0	80.5	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B86714**	RunNo: **86714**
Prep Date:	Analysis Date: **3/24/2022**	SeqNo: **3062325** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	103	85	115			
Arsenic	0.026	0.0010	0.02500	0	102	85	115			
Lead	0.013	0.00050	0.01250	0	102	85	115			
Selenium	0.026	0.0010	0.02500	0	103	85	115			

Sample ID: **2203B95-001EMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **EB 3-22-22**	Batch ID: **B86714**	RunNo: **86714**
Prep Date:	Analysis Date: **3/24/2022**	SeqNo: **3062327** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	102	70	130			
Arsenic	0.025	0.0010	0.02500	0	100	70	130			
Lead	0.012	0.00050	0.01250	0	96.9	70	130			
Selenium	0.025	0.0010	0.02500	0	98.0	70	130			

Sample ID: **2203B95-001EMSDL**	SampType: **MSD**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **EB 3-22-22**	Batch ID: **B86714**	RunNo: **86714**
Prep Date:	Analysis Date: **3/24/2022**	SeqNo: **3062328** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203B95**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **2203B95-001EMSDL** SampType: **MSD** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **EB 3-22-22** Batch ID: **B86714** RunNo: **86714**
Prep Date: Analysis Date: **3/24/2022** SeqNo: **3062328** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	104	70	130	1.66	20	
Arsenic	0.025	0.0010	0.02500	0	101	70	130	1.14	20	
Lead	0.012	0.00050	0.01250	0	96.5	70	130	0.451	20	
Selenium	0.026	0.0010	0.02500	0	103	70	130	4.45	20	

Sample ID: **2203B95-002EMSLL** SampType: **MS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **OW-70** Batch ID: **B86714** RunNo: **86714**
Prep Date: Analysis Date: **3/24/2022** SeqNo: **3062330** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.027	0.0010	0.02500	0.0004915	104	70	130			
Arsenic	0.030	0.0010	0.02500	0.001473	114	70	130			
Lead	0.011	0.00050	0.01250	0.0001869	90.0	70	130			
Selenium	0.027	0.0010	0.02500	0	107	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203B95**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB-66396**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **PBW**	Batch ID: **66396**	RunNo: **86753**							
Prep Date: **3/25/2022**	Analysis Date: **3/25/2022**	SeqNo: **3063465**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00014	0.00020								J

Sample ID: **LCS-66396**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **LCSW**	Batch ID: **66396**	RunNo: **86753**							
Prep Date: **3/25/2022**	Analysis Date: **3/25/2022**	SeqNo: **3063467**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	103	85	115			

Sample ID: **2203B95-008DMS**	SampType: **MS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **DUP-3-22-22**	Batch ID: **66396**	RunNo: **86753**							
Prep Date: **3/25/2022**	Analysis Date: **3/25/2022**	SeqNo: **3063509**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0043	0.00020	0.005000	0	86.2	75	125			

Sample ID: **2203B95-008DMSD**	SampType: **MSD**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **DUP-3-22-22**	Batch ID: **66396**	RunNo: **86753**							
Prep Date: **3/25/2022**	Analysis Date: **3/25/2022**	SeqNo: **3063512**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0045	0.00020	0.005000	0	89.3	75	125	3.55	20	

Sample ID: **LCSLL-66396**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **BatchQC**	Batch ID: **66396**	RunNo: **86753**							
Prep Date: **3/25/2022**	Analysis Date: **3/25/2022**	SeqNo: **3063514**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00018	0.00020	0.0001500	0	122	50	150			J

Sample ID: **MB-66455**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **PBW**	Batch ID: **66455**	RunNo: **86816**							
Prep Date: **3/29/2022**	Analysis Date: **3/29/2022**	SeqNo: **3065974**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203B95**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **LCSLL-66455**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC**	Batch ID: **66455**	RunNo: **86816**
Prep Date: **3/29/2022**	Analysis Date: **3/29/2022**	SeqNo: **3065975** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00015	0.00020	0.0001500	0	98.5	50	150			J

Sample ID: **LCS-66455**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW**	Batch ID: **66455**	RunNo: **86816**
Prep Date: **3/29/2022**	Analysis Date: **3/29/2022**	SeqNo: **3065976** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0048	0.00020	0.005000	0	96.8	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203B95**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB-66393**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **66393**	RunNo: **86828**							
Prep Date: **3/29/2022**	Analysis Date: **3/29/2022**	SeqNo: **3066617**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **MB-66393**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **66393**	RunNo: **86828**							
Prep Date: **3/29/2022**	Analysis Date: **3/29/2022**	SeqNo: **3066620**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-66393**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **LCSW**	Batch ID: **66393**	RunNo: **86828**							
Prep Date: **3/29/2022**	Analysis Date: **3/29/2022**	SeqNo: **3066625**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	112	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203B95**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB-66372**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **PBW**	Batch ID: **66372**	RunNo: **86806**							
Prep Date: **3/24/2022**	Analysis Date: **3/28/2022**	SeqNo: **3065857**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.064								
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.041		0.03750		108	42.2	138			

Sample ID: **LCS-66372**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSW**	Batch ID: **66372**	RunNo: **86806**							
Prep Date: **3/24/2022**	Analysis Date: **3/28/2022**	SeqNo: **3065858**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.12	0.064	0.1875	0	65.1	31.7	75.4			
Surr: DNOP	0.021		0.01875		114	42.2	138			

Sample ID: **LCSD-66372**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSS02**	Batch ID: **66372**	RunNo: **86806**							
Prep Date: **3/24/2022**	Analysis Date: **3/28/2022**	SeqNo: **3065859**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.10	0.064	0.1875	0	55.2	31.7	75.4	16.4	20	
Surr: DNOP	0.019		0.01875		101	42.2	138	0	0	

Sample ID: **MB-66385**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **PBW**	Batch ID: **66385**	RunNo: **86806**							
Prep Date: **3/24/2022**	Analysis Date: **3/28/2022**	SeqNo: **3065860**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.044	0.064								J
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.041		0.03750		110	42.2	138			

Sample ID: **LCS-66385**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSW**	Batch ID: **66385**	RunNo: **86806**							
Prep Date: **3/24/2022**	Analysis Date: **3/28/2022**	SeqNo: **3065861**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.20	0.064	0.1875	0	107	31.7	75.4			S
Surr: DNOP	0.028		0.01875		148	42.2	138			S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203B95**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **LCSD-66385**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02**	Batch ID: **66385**	RunNo: **86806**
Prep Date: **3/24/2022**	Analysis Date: **3/28/2022**	SeqNo: **3065862** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.11	0.064	0.1875	0	59.4	31.7	75.4	56.8	20	R
Surr: DNOP	0.019		0.01875		104	42.2	138	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203B95**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**							
Client ID: **LCSW**	Batch ID: **R86734**	RunNo: **86734**							
Prep Date:	Analysis Date: **3/24/2022**	SeqNo: **3062248**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	99.5	70	130			
Toluene	22	1.0	20.00	0	110	70	130			
Chlorobenzene	23	1.0	20.00	0	113	70	130			
1,1-Dichloroethene	19	1.0	20.00	0	97.0	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	88.5	70	130			
Surr: 1,2-Dichloroethane-d4	9.2		10.00		92.3	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.4	70	130			
Surr: Dibromofluoromethane	9.3		10.00		93.4	70	130			
Surr: Toluene-d8	9.9		10.00		98.8	70	130			

Sample ID: **2203b95-002ams**	SampType: **MS**	TestCode: **EPA Method 8260B: VOLATILES**							
Client ID: **OW-70**	Batch ID: **R86734**	RunNo: **86734**							
Prep Date:	Analysis Date: **3/24/2022**	SeqNo: **3062253**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	4.823	74.7	70	130			
Toluene	20	1.0	20.00	0	98.8	70	130			
Chlorobenzene	20	1.0	20.00	0	100	70	130			
1,1-Dichloroethene	17	1.0	20.00	0	84.6	70	130			
Trichloroethene (TCE)	17	1.0	20.00	0	82.5	70	130			
Surr: 1,2-Dichloroethane-d4	9.4		10.00		94.0	70	130			
Surr: 4-Bromofluorobenzene	9.7		10.00		96.7	70	130			
Surr: Dibromofluoromethane	9.6		10.00		96.4	70	130			
Surr: Toluene-d8	9.9		10.00		98.5	70	130			

Sample ID: **2203b95-002amsd**	SampType: **MSD**	TestCode: **EPA Method 8260B: VOLATILES**							
Client ID: **OW-70**	Batch ID: **R86734**	RunNo: **86734**							
Prep Date:	Analysis Date: **3/24/2022**	SeqNo: **3062254**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	4.823	70.3	70	130	4.51	20	
Toluene	19	1.0	20.00	0	96.9	70	130	1.99	20	
Chlorobenzene	20	1.0	20.00	0	102	70	130	1.68	20	
1,1-Dichloroethene	17	1.0	20.00	0	83.8	70	130	0.954	20	
Trichloroethene (TCE)	16	1.0	20.00	0	80.8	70	130	2.14	20	
Surr: 1,2-Dichloroethane-d4	9.3		10.00		93.4	70	130	0	0	
Surr: 4-Bromofluorobenzene	9.9		10.00		99.2	70	130	0	0	
Surr: Dibromofluoromethane	9.3		10.00		92.8	70	130	0	0	
Surr: Toluene-d8	10		10.00		102	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203B95**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R86734**	RunNo: **86734**
Prep Date:	Analysis Date: **3/24/2022**	SeqNo: **3062277** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	0.66	3.0								J
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	8.7		10.00		87.3	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		97.5	70	130			
Surr: Dibromofluoromethane	9.7		10.00		96.8	70	130			
Surr: Toluene-d8	10		10.00		105	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203B95**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R86760**	RunNo: **86760**
Prep Date:	Analysis Date: **3/25/2022**	SeqNo: **3063673** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	17	1.0	20.00	0	85.1	70	130			
Surr: 1,2-Dichloroethane-d4	8.3		10.00		83.4	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		97.8	70	130			
Surr: Dibromofluoromethane	8.9		10.00		89.4	70	130			
Surr: Toluene-d8	10		10.00		99.9	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R86760**	RunNo: **86760**
Prep Date:	Analysis Date: **3/25/2022**	SeqNo: **3063681** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	8.7		10.00		86.7	70	130			
Surr: 4-Bromofluorobenzene	9.5		10.00		95.1	70	130			
Surr: Dibromofluoromethane	9.8		10.00		98.4	70	130			
Surr: Toluene-d8	11		10.00		107	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203B95**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **lcs-66355**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **66355**	RunNo: **86930**
Prep Date: **3/23/2022**	Analysis Date: **4/1/2022**	SeqNo: **3071399** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	53	5.0	100.0	0	52.9	15	87.6			
Phenol	82	5.0	200.0	0	41.1	16.8	70.5			
Surr: 2-Fluorophenol	110		200.0		52.9	29.4	87.7			
Surr: Phenol-d5	82		200.0		41.1	28.5	64.7			
Surr: 2,4,6-Tribromophenol	110		200.0		57.4	18.6	129			
Surr: Nitrobenzene-d5	65		100.0		65.2	36.9	103			
Surr: 2-Fluorobiphenyl	61		100.0		60.7	38.1	99.9			
Surr: 4-Terphenyl-d14	88		100.0		88.5	48	155			

Sample ID: **lcsd-66355**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **66355**	RunNo: **86930**
Prep Date: **3/23/2022**	Analysis Date: **4/1/2022**	SeqNo: **3071400** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	47	5.0	100.0	0	47.5	15	87.6	10.8	30.4	
Phenol	66	5.0	200.0	0	33.1	16.8	70.5	21.7	37.2	
Surr: 2-Fluorophenol	81		200.0		40.3	29.4	87.7	0	0	
Surr: Phenol-d5	67		200.0		33.7	28.5	64.7	0	0	
Surr: 2,4,6-Tribromophenol	120		200.0		59.1	18.6	129	0	0	
Surr: Nitrobenzene-d5	55		100.0		55.4	36.9	103	0	0	
Surr: 2-Fluorobiphenyl	50		100.0		50.0	38.1	99.9	0	0	
Surr: 4-Terphenyl-d14	90		100.0		89.7	48	155	0	0	

Sample ID: **mb-66355**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **66355**	RunNo: **87124**
Prep Date: **3/23/2022**	Analysis Date: **4/7/2022**	SeqNo: **3080303** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	5.0								
2,4-Dinitrophenol	ND	20								
1-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	5.0								
3+4-Methylphenol	ND	5.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203B95**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **mb-66355**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **66355**	RunNo: **87124**
Prep Date: **3/23/2022**	Analysis Date: **4/7/2022**	SeqNo: **3080303** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenol	ND	5.0								
Pyridine	ND	10								
2,4,6-Trichlorophenol	ND	5.0								
Surr: 2-Fluorophenol	71		200.0		35.6	29.4	87.7			
Surr: Phenol-d5	100		200.0		50.4	28.5	64.7			
Surr: 2,4,6-Tribromophenol	46		200.0		23.0	18.6	129			
Surr: Nitrobenzene-d5	65		100.0		65.4	36.9	103			
Surr: 2-Fluorobiphenyl	62		100.0		62.0	38.1	99.9			
Surr: 4-Terphenyl-d14	89		100.0		89.2	48	155			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203B95**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **mb-66355**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**							
Client ID: **PBW**	Batch ID: **R86800**	RunNo: **86800**							
Prep Date:	Analysis Date: **3/28/2022**	SeqNo: **3065215**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.10								
2-Methylnaphthalene	ND	0.10								
Acenaphthene	ND	0.10								
Fluorene	ND	0.10								
Phenanthrene	ND	0.10								
Anthracene	ND	0.10								
Fluoranthene	ND	0.20								
Pyrene	ND	0.20								
Benz(a)anthracene	ND	0.10								
Chrysene	ND	0.10								
Benzo(b)fluoranthene	ND	0.10								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	54		100.0		54.2	31.6	100			
Surr: 2,4,6-Tribromophenol	27		200.0		13.7	22	101			S
Surr: 2-Fluorobiphenyl	53		100.0		52.9	26.7	90.1			
Surr: 4-Terphenyl-d14	100		100.0		101	72.3	147			E

Sample ID: **lcs-66355-lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**							
Client ID: **LCSW**	Batch ID: **R86800**	RunNo: **86800**							
Prep Date:	Analysis Date: **3/28/2022**	SeqNo: **3065216**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.62	0.10	2.000	0	31.0	20.2	48.4			
Naphthalene	0.98	0.10	2.000	0	49.0	21.3	79.9			
1-Methylnaphthalene	0.96	0.10	2.000	0	48.0	22.2	80.3			
2-Methylnaphthalene	0.94	0.10	2.000	0	47.0	20.6	80.1			
Acenaphthene	1.1	0.10	2.000	0	57.0	29.8	82.7			
Fluorene	1.2	0.10	2.000	0	60.0	33.3	86			
Phenanthrene	1.3	0.10	2.000	0	67.0	38.2	93.9			
Anthracene	1.4	0.10	2.000	0	71.0	41.1	95.6			
Fluoranthene	1.7	0.20	2.000	0	83.0	52.9	123			
Pyrene	1.6	0.20	2.000	0	81.0	51	113			
Benz(a)anthracene	1.8	0.10	2.000	0	92.0	51	147			
Chrysene	1.7	0.10	2.000	0	86.0	55.3	115			
Benzo(b)fluoranthene	1.8	0.10	2.000	0	90.0	44.4	136			
Indeno(1,2,3-cd)pyrene	1.9	0.30	2.000	0	95.0	31.4	165			
Surr: Nitrobenzene-d5	61		100.0		60.8	31.6	100			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203B95**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **lcs-66355-lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **R86800**	RunNo: **86800**
Prep Date:	Analysis Date: **3/28/2022**	SeqNo: **3065216** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	84		200.0		42.2	22	101			
Surr: 2-Fluorobiphenyl	60		100.0		59.6	26.7	90.1			
Surr: 4-Terphenyl-d14	92		100.0		91.8	72.3	147			

Sample ID: **lcsd-66355-lf**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02**	Batch ID: **R86800**	RunNo: **86800**
Prep Date:	Analysis Date: **3/28/2022**	SeqNo: **3065217** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.70	0.10	2.000	0	35.0	20.2	48.4	12.1	30.1	
Naphthalene	1.1	0.10	2.000	0	57.0	21.3	79.9	15.1	25.6	
1-Methylnaphthalene	1.1	0.10	2.000	0	56.0	22.2	80.3	15.4	25	
2-Methylnaphthalene	1.1	0.10	2.000	0	55.0	20.6	80.1	15.7	25	
Acenaphthene	1.3	0.10	2.000	0	63.0	29.8	82.7	10.0	27.8	
Fluorene	1.3	0.10	2.000	0	65.0	33.3	86	8.00	26.4	
Phenanthrene	1.4	0.10	2.000	0	69.0	38.2	93.9	2.94	27.9	
Anthracene	1.4	0.10	2.000	0	72.0	41.1	95.6	1.40	25.6	
Fluoranthene	1.6	0.20	2.000	0	79.0	52.9	123	4.94	22.8	
Pyrene	1.6	0.20	2.000	0	82.0	51	113	1.23	20	
Benz(a)anthracene	1.8	0.10	2.000	0	90.0	51	147	2.20	24.1	
Chrysene	1.7	0.10	2.000	0	87.0	55.3	115	1.16	20	
Benzo(b)fluoranthene	1.7	0.10	2.000	0	87.0	44.4	136	3.39	24.5	
Indeno(1,2,3-cd)pyrene	2.0	0.30	2.000	0	100	31.4	165	5.13	21.1	
Surr: Nitrobenzene-d5	67		100.0		66.8	31.6	100	0	0	
Surr: 2,4,6-Tribromophenol	84		200.0		42.0	22	101	0	0	
Surr: 2-Fluorobiphenyl	61		100.0		61.2	26.7	90.1	0	0	
Surr: 4-Terphenyl-d14	95		100.0		95.0	72.3	147	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203B95**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **2.5ug lcs gro**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **G86734**	RunNo: **86734**
Prep Date:	Analysis Date: **3/24/2022**	SeqNo: **3062281** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.49	0.050	0.5000	0	97.9	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.2	70	130			

Sample ID: **2203b95-003ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **OW-12A**	Batch ID: **G86734**	RunNo: **86734**
Prep Date:	Analysis Date: **3/24/2022**	SeqNo: **3062285** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	5.8	0.050	0.5000	5.231	108	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.4	70	130			

Sample ID: **2203b95-003amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **OW-12A**	Batch ID: **G86734**	RunNo: **86734**
Prep Date:	Analysis Date: **3/24/2022**	SeqNo: **3062286** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	5.6	0.050	0.5000	5.231	64.3	70	130	3.87	20	S
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130	0	0	

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **G86734**	RunNo: **86734**
Prep Date:	Analysis Date: **3/24/2022**	SeqNo: **3062303** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.041	0.050								J
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: **Marathon** Work Order Number: **2203B95** RcptNo: **1**

Received By: **Kasandra Payan** **3/23/2022 9:10:00 AM**

Completed By: **Cheyenne Cason** **3/23/2022 9:26:43 AM**

Reviewed By: DAD 3/23/22

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☑	No ☐	NA ☐
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: 16 8 (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted? yes
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by: KPG 3/23/22

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: Date:

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks: Added 0.5ml of HNO3 to sample 007D for proper pH <2- KPG 3/23/22

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.8	Good	Yes			
2	0.1	Good	Yes			
3	0.6	Good	Yes			
4	0.9	Good	Yes			

Released to Imaging: 4/21/2023 9:40:20 AM
Received by OCD: 4/21/2023 9:21:57 AM

Chain-of-Custody Record

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Client:	Marathon Gallup Refinery
Mailing Address:	92 Giant Crossing Road Jamestown, NM,87347
Phone #:	808-640-1823
email or Fax#:	
QA/QC Package:	
Standard	☐ Level 4 (Full Validation)
Accreditation:	☐ Az Compliance
NELAC	☐ Other
EDD (Type)	

Turn-Around Time: X Standard Rush

Project Name: **2022 GW Sampling 1st Quarter**

Project #: **697-080-001**

Project Manager: Lesli Alexander/Mackensie Swift

Sampler: Hilario Trejo

On Ice: ☑ Yes ☐ No

# of Coolers: 4

Cooler Temp(including CF): See Remarks

	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2203B95
3/22	8:15		EB-3-22-22	13		001
3/22	8:20		OW-70	13		002
3/22	9:15		OW-12A	13		003
3/22	11:00		KA-3	13		004
3/22	10:30		NAPIS-3	13		005
3/22	10:00		NAPIS-2	13		006
3/22	9:35		OAPIS-1	13		007
3/23	—		Dup-3-22-22	13		008
3/22	11:00		FB-3-22-22	2		009
			Trip Blank			010

Analysis Request

See Analyte List	8260B: VOC	8270C: SVOC	8270C SIM: PAH, 1,4 Dioxane	8015: TPH GRO/DRO/MRO	E200.7: Metals	E200.7: Dissolved Metals	E245.1 Mercury	E504.1: EDB	E335.4: Cyanide Subbed		537.1: PFAS	SM 5201B: BOD	410.4: COD	SM9223B E Coli
X	X	X	X	X	X	X	X	X	X					
X	X	X	X	X	X	X	X	X	X					
X	X	X	X	X	X	X	X	X	X					
X	X	X	X	X	X	X	X	X	X					
X	X	X	X	X	X	X	X	X	X					
X	X	X	X	X	X	X	X	X	X					
X	X	X	X	X	X	X	X	X	X					
X	X	X	X	X	X	X	X	X	X					
X	X	X	X	X	X	X	X	X	X					
	X													

	Time	Relinquished by	Received by	Via	Date	Time
3/22	1:00	Hilario Trejo				
				courier	3/23/22	9:10

0.8-0=0.8
0.1-0=0.1
0.6-0=0.6
0.9-0=0.9

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

April 22, 2022

Lesli Alexander

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX (505) 632-3911

RE: 2022 GW Sampling 1st Qtr OrderNo.: 2203C69

Dear Lesli Alexander:

Hall Environmental Analysis Laboratory received 12 sample(s) on 3/24/2022 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued April 13, 2022.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **2203C69**
Date: **4/22/2022**

CLIENT: Marathon
Project: 2022 GW Sampling 1st Qtr

"S" flagged denote that the surrogate recoveries are outstide of the standard limits due to matrix interferences/sample dilution.

Naphthalene was reported by EPA Method 8270 instead of EPA Method 8270SIMs becuase of its elevated concentration for sample OW-55.
Naphthalene, 1-methylnaphthalene, 2-methylnaphthalene were reported by EPA Method 8270 instead of EPA Method 8270SIMs becuase of their elevated concentrations for the following sample: OW-66

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-3-23-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 8:20:00 AM
Lab ID: 2203C69-001A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	3/24/2022 8:04:52 PM	R86734
Toluene	ND	0.20	1.0		µg/L	1	3/24/2022 8:04:52 PM	R86734
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/24/2022 8:04:52 PM	R86734
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/24/2022 8:04:52 PM	R86734
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/24/2022 8:04:52 PM	R86734
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/24/2022 8:04:52 PM	R86734
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	3/24/2022 8:04:52 PM	R86734
Acetone	ND	2.5	10		µg/L	1	3/24/2022 8:04:52 PM	R86734
Bromomethane	ND	0.85	3.0		µg/L	1	3/24/2022 8:04:52 PM	R86734
2-Butanone	5.0	2.0	10	J	µg/L	1	3/24/2022 8:04:52 PM	R86734
Carbon disulfide	ND	0.59	10		µg/L	1	3/24/2022 8:04:52 PM	R86734
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/24/2022 8:04:52 PM	R86734
Chloroform	ND	0.13	1.0		µg/L	1	3/24/2022 8:04:52 PM	R86734
Chloromethane	0.70	0.41	3.0	J	µg/L	1	3/24/2022 8:04:52 PM	R86734
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/24/2022 8:04:52 PM	R86734
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/24/2022 8:04:52 PM	R86734
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/24/2022 8:04:52 PM	R86734
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/24/2022 8:04:52 PM	R86734
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/24/2022 8:04:52 PM	R86734
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/24/2022 8:04:52 PM	R86734
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/24/2022 8:04:52 PM	R86734
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/24/2022 8:04:52 PM	R86734
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/24/2022 8:04:52 PM	R86734
Styrene	ND	0.14	1.0		µg/L	1	3/24/2022 8:04:52 PM	R86734
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/24/2022 8:04:52 PM	R86734
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/24/2022 8:04:52 PM	R86734
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/24/2022 8:04:52 PM	R86734
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/24/2022 8:04:52 PM	R86734
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/24/2022 8:04:52 PM	R86734
Surr: 1,2-Dichloroethane-d4	90.4	0	70-130		%Rec	1	3/24/2022 8:04:52 PM	R86734
Surr: 4-Bromofluorobenzene	99.0	0	70-130		%Rec	1	3/24/2022 8:04:52 PM	R86734
Surr: Dibromofluoromethane	96.2	0	70-130		%Rec	1	3/24/2022 8:04:52 PM	R86734
Surr: Toluene-d8	98.8	0	70-130		%Rec	1	3/24/2022 8:04:52 PM	R86734
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.034	0.028	0.050	J	mg/L	1	3/24/2022 8:04:52 PM	G86734
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	3/24/2022 8:04:52 PM	G86734

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-3-23-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 8:20:00 AM
Lab ID: 2203C69-001B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0035	0.0095		µg/L	1	3/29/2022 3:55:21 PM	66393

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-3-23-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 8:20:00 AM
Lab ID: 2203C69-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.033	0.016	0.064	J	mg/L	1	3/28/2022 6:02:24 PM	66385
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/28/2022 6:02:24 PM	66385
Surr: DNOP	110	0	42.2-138		%Rec	1	3/28/2022 6:02:24 PM	66385
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	1.1	20		µg/L	1	4/2/2022 8:01:54 PM	66392
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	4/2/2022 8:01:54 PM	66392
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	4/2/2022 8:01:54 PM	66392
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	4/2/2022 8:01:54 PM	66392
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	4/2/2022 8:01:54 PM	66392
Diethyl phthalate	ND	3.9	10		µg/L	1	4/2/2022 8:01:54 PM	66392
Dimethyl phthalate	ND	2.0	10		µg/L	1	4/2/2022 8:01:54 PM	66392
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	4/2/2022 8:01:54 PM	66392
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	4/2/2022 8:01:54 PM	66392
2-Methylphenol	ND	0.51	5.0		µg/L	1	4/2/2022 8:01:54 PM	66392
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	4/2/2022 8:01:54 PM	66392
Phenol	ND	0.33	5.0		µg/L	1	4/2/2022 8:01:54 PM	66392
Pyridine	ND	10	10		µg/L	1	4/2/2022 8:01:54 PM	66392
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	4/2/2022 8:01:54 PM	66392
Surr: 2-Fluorophenol	52.2	0	29.4-87.7		%Rec	1	4/2/2022 8:01:54 PM	66392
Surr: Phenol-d5	38.6	0	28.5-64.7		%Rec	1	4/2/2022 8:01:54 PM	66392
Surr: 2,4,6-Tribromophenol	73.0	0	18.6-129		%Rec	1	4/2/2022 8:01:54 PM	66392
Surr: Nitrobenzene-d5	61.1	0	36.9-103		%Rec	1	4/2/2022 8:01:54 PM	66392
Surr: 2-Fluorobiphenyl	56.7	0	38.1-99.9		%Rec	1	4/2/2022 8:01:54 PM	66392
Surr: 4-Terphenyl-d14	82.1	0	48-155		%Rec	1	4/2/2022 8:01:54 PM	66392
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.048	1.0		µg/L	1	3/30/2022 12:45:00 PM	R86913
Naphthalene	ND	0.034	0.10		µg/L	1	3/30/2022 12:45:00 PM	R86913
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/30/2022 12:45:00 PM	R86913
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/30/2022 12:45:00 PM	R86913
Acenaphthene	ND	0.031	0.10		µg/L	1	3/30/2022 12:45:00 PM	R86913
Fluorene	ND	0.031	0.10		µg/L	1	3/30/2022 12:45:00 PM	R86913
Phenanthrene	ND	0.057	0.10		µg/L	1	3/30/2022 12:45:00 PM	R86913
Anthracene	ND	0.034	0.10		µg/L	1	3/30/2022 12:45:00 PM	R86913
Fluoranthene	ND	0.10	0.20		µg/L	1	3/30/2022 12:45:00 PM	R86913
Pyrene	ND	0.16	0.20		µg/L	1	3/30/2022 12:45:00 PM	R86913
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/30/2022 12:45:00 PM	R86913
Chrysene	ND	0.024	0.10		µg/L	1	3/30/2022 12:45:00 PM	R86913
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/30/2022 12:45:00 PM	R86913
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/30/2022 12:45:00 PM	R86913

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Estimated value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-3-23-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 8:20:00 AM
Lab ID: 2203C69-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	61.0	0	31.6-100		%Rec	1	3/30/2022 12:45:00 PM	R86913
Surr: 2-Fluorobiphenyl	58.1	0	26.7-90.1		%Rec	1	3/30/2022 12:45:00 PM	R86913
Surr: 4-Terphenyl-d14	95.8	0	72.3-147		%Rec	1	3/30/2022 12:45:00 PM	R86913

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-3-23-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 8:20:00 AM
Lab ID: 2203C69-001D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	ND	0.0016	0.0030		mg/L	1	4/6/2022 2:47:18 PM	66644
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 2:47:18 PM	66644
Cadmium	ND	0.0015	0.0020		mg/L	1	4/6/2022 2:47:18 PM	66644
Chromium	ND	0.0021	0.0060		mg/L	1	4/6/2022 2:47:18 PM	66644
Cobalt	ND	0.0024	0.0060		mg/L	1	4/6/2022 2:47:18 PM	66644
Nickel	ND	0.0033	0.010		mg/L	1	4/6/2022 2:47:18 PM	66644
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 2:47:18 PM	66644
Vanadium	ND	0.0024	0.050		mg/L	1	4/6/2022 2:47:18 PM	66644
Zinc	ND	0.0064	0.010		mg/L	1	4/6/2022 2:47:18 PM	66644
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/31/2022 1:15:24 PM	66472
Arsenic	ND	0.00013	0.0010		mg/L	1	3/31/2022 1:15:24 PM	66472
Lead	ND	0.000061	0.00050		mg/L	1	3/31/2022 1:15:24 PM	66472
Selenium	ND	0.00037	0.0010		mg/L	1	3/31/2022 1:15:24 PM	66472
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/28/2022 3:22:46 PM	66425

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-3-23-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 8:20:00 AM
Lab ID: 2203C69-001E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	ND	0.0011	0.0020		mg/L	1	3/29/2022 1:56:06 PM	B86825
Beryllium	ND	0.00088	0.0020		mg/L	1	3/29/2022 1:56:06 PM	B86825
Cadmium	ND	0.00098	0.0020		mg/L	1	3/29/2022 1:56:06 PM	B86825
Chromium	ND	0.0020	0.0060		mg/L	1	3/29/2022 1:56:06 PM	B86825
Cobalt	ND	0.0024	0.0060		mg/L	1	3/29/2022 1:56:06 PM	B86825
Nickel	0.0035	0.0033	0.010	J	mg/L	1	3/29/2022 1:56:06 PM	B86825
Silver	ND	0.0013	0.0050		mg/L	1	3/29/2022 1:56:06 PM	B86825
Vanadium	ND	0.0017	0.050		mg/L	1	3/29/2022 1:56:06 PM	B86825
Zinc	0.0063	0.0032	0.010	J	mg/L	1	3/29/2022 1:56:06 PM	B86825
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/24/2022 2:43:40 PM	B86714
Arsenic	ND	0.00012	0.0010		mg/L	1	3/24/2022 2:43:40 PM	B86714
Lead	ND	0.000057	0.00050		mg/L	1	3/24/2022 2:43:40 PM	B86714
Selenium	ND	0.00034	0.0010		mg/L	1	3/24/2022 2:43:40 PM	B86714
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/29/2022 2:07:27 PM	66456

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-54
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 8:20:00 AM
Lab ID: 2203C69-002A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	12	1.1	5.0		µg/L	5	3/24/2022 9:01:40 PM	R86734
Toluene	ND	1.0	5.0		µg/L	5	3/24/2022 9:01:40 PM	R86734
Ethylbenzene	13	1.1	5.0		µg/L	5	3/24/2022 9:01:40 PM	R86734
Methyl tert-butyl ether (MTBE)	1300	20	50		µg/L	50	3/24/2022 8:33:17 PM	R86734
1,2,4-Trimethylbenzene	4.2	0.61	5.0	J	µg/L	5	3/24/2022 9:01:40 PM	R86734
1,3,5-Trimethylbenzene	ND	0.91	5.0		µg/L	5	3/24/2022 9:01:40 PM	R86734
1,2-Dichloroethane (EDC)	2.3	1.3	5.0	J	µg/L	5	3/24/2022 9:01:40 PM	R86734
Acetone	ND	13	50		µg/L	5	3/24/2022 9:01:40 PM	R86734
Bromomethane	ND	4.3	15		µg/L	5	3/24/2022 9:01:40 PM	R86734
2-Butanone	ND	10	50		µg/L	5	3/24/2022 9:01:40 PM	R86734
Carbon disulfide	ND	3.0	50		µg/L	5	3/24/2022 9:01:40 PM	R86734
Chlorobenzene	ND	0.78	5.0		µg/L	5	3/24/2022 9:01:40 PM	R86734
Chloroform	1.6	0.67	5.0	J	µg/L	5	3/24/2022 9:01:40 PM	R86734
Chloromethane	3.9	2.1	15	J	µg/L	5	3/24/2022 9:01:40 PM	R86734
cis-1,2-DCE	ND	1.9	5.0		µg/L	5	3/24/2022 9:01:40 PM	R86734
1,1-Dichloroethane	ND	1.4	5.0		µg/L	5	3/24/2022 9:01:40 PM	R86734
1,1-Dichloroethene	ND	1.0	5.0		µg/L	5	3/24/2022 9:01:40 PM	R86734
Isopropylbenzene	ND	0.91	5.0		µg/L	5	3/24/2022 9:01:40 PM	R86734
4-Isopropyltoluene	ND	1.0	5.0		µg/L	5	3/24/2022 9:01:40 PM	R86734
Methylene Chloride	ND	2.5	15		µg/L	5	3/24/2022 9:01:40 PM	R86734
n-Butylbenzene	ND	1.3	15		µg/L	5	3/24/2022 9:01:40 PM	R86734
n-Propylbenzene	1.2	0.91	5.0	J	µg/L	5	3/24/2022 9:01:40 PM	R86734
sec-Butylbenzene	ND	0.72	5.0		µg/L	5	3/24/2022 9:01:40 PM	R86734
Styrene	ND	0.68	5.0		µg/L	5	3/24/2022 9:01:40 PM	R86734
Tetrachloroethene (PCE)	ND	1.8	5.0		µg/L	5	3/24/2022 9:01:40 PM	R86734
1,1,1-Trichloroethane	ND	1.5	5.0		µg/L	5	3/24/2022 9:01:40 PM	R86734
Trichloroethene (TCE)	ND	1.0	5.0		µg/L	5	3/24/2022 9:01:40 PM	R86734
Vinyl chloride	ND	1.6	5.0		µg/L	5	3/24/2022 9:01:40 PM	R86734
Xylenes, Total	2.0	1.9	7.5	J	µg/L	5	3/24/2022 9:01:40 PM	R86734
Surr: 1,2-Dichloroethane-d4	87.5	0	70-130		%Rec	5	3/24/2022 9:01:40 PM	R86734
Surr: 4-Bromofluorobenzene	93.4	0	70-130		%Rec	5	3/24/2022 9:01:40 PM	R86734
Surr: Dibromofluoromethane	94.2	0	70-130		%Rec	5	3/24/2022 9:01:40 PM	R86734
Surr: Toluene-d8	102	0	70-130		%Rec	5	3/24/2022 9:01:40 PM	R86734
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	2.0	0.14	0.25		mg/L	5	3/24/2022 9:01:40 PM	G86734
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	5	3/24/2022 9:01:40 PM	G86734

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-54
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 8:20:00 AM
Lab ID: 2203C69-002B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0035	0.0095		µg/L	1	3/29/2022 4:10:32 PM	66393

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-54
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 8:20:00 AM
Lab ID: 2203C69-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	2.2	0.016	0.064		mg/L	1	3/28/2022 6:26:12 PM	66385
Motor Oil Range Organics (MRO)	0.13	0.052	0.080		mg/L	1	3/28/2022 6:26:12 PM	66385
Surr: DNOP	113	0	42.2-138		%Rec	1	3/28/2022 6:26:12 PM	66385
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	1.1	20		µg/L	1	4/2/2022 8:44:39 PM	66392
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	4/2/2022 8:44:39 PM	66392
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	4/2/2022 8:44:39 PM	66392
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	4/2/2022 8:44:39 PM	66392
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	4/2/2022 8:44:39 PM	66392
Diethyl phthalate	ND	3.9	10		µg/L	1	4/2/2022 8:44:39 PM	66392
Dimethyl phthalate	ND	2.0	10		µg/L	1	4/2/2022 8:44:39 PM	66392
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	4/2/2022 8:44:39 PM	66392
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	4/2/2022 8:44:39 PM	66392
2-Methylphenol	ND	0.51	5.0		µg/L	1	4/2/2022 8:44:39 PM	66392
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	4/2/2022 8:44:39 PM	66392
Phenol	ND	0.33	5.0		µg/L	1	4/2/2022 8:44:39 PM	66392
Pyridine	ND	10	10		µg/L	1	4/2/2022 8:44:39 PM	66392
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	4/2/2022 8:44:39 PM	66392
Surr: 2-Fluorophenol	46.9	0	29.4-87.7		%Rec	1	4/2/2022 8:44:39 PM	66392
Surr: Phenol-d5	38.2	0	28.5-64.7		%Rec	1	4/2/2022 8:44:39 PM	66392
Surr: 2,4,6-Tribromophenol	85.9	0	18.6-129		%Rec	1	4/2/2022 8:44:39 PM	66392
Surr: Nitrobenzene-d5	61.7	0	36.9-103		%Rec	1	4/2/2022 8:44:39 PM	66392
Surr: 2-Fluorobiphenyl	57.4	0	38.1-99.9		%Rec	1	4/2/2022 8:44:39 PM	66392
Surr: 4-Terphenyl-d14	84.4	0	48-155		%Rec	1	4/2/2022 8:44:39 PM	66392
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.048	1.0		µg/L	1	3/30/2022 1:30:00 PM	R86913
Naphthalene	ND	0.034	0.10		µg/L	1	3/30/2022 1:30:00 PM	R86913
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/30/2022 1:30:00 PM	R86913
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/30/2022 1:30:00 PM	R86913
Acenaphthene	ND	0.031	0.10		µg/L	1	3/30/2022 1:30:00 PM	R86913
Fluorene	ND	0.031	0.10		µg/L	1	3/30/2022 1:30:00 PM	R86913
Phenanthrene	ND	0.057	0.10		µg/L	1	3/30/2022 1:30:00 PM	R86913
Anthracene	ND	0.034	0.10		µg/L	1	3/30/2022 1:30:00 PM	R86913
Fluoranthene	ND	0.10	0.20		µg/L	1	3/30/2022 1:30:00 PM	R86913
Pyrene	ND	0.16	0.20		µg/L	1	3/30/2022 1:30:00 PM	R86913
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/30/2022 1:30:00 PM	R86913
Chrysene	ND	0.024	0.10		µg/L	1	3/30/2022 1:30:00 PM	R86913
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/30/2022 1:30:00 PM	R86913
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/30/2022 1:30:00 PM	R86913

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-54
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 8:20:00 AM
Lab ID: 2203C69-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	59.1	0	31.6-100		%Rec	1	3/30/2022 1:30:00 PM	R86913
Surr: 2-Fluorobiphenyl	52.8	0	26.7-90.1		%Rec	1	3/30/2022 1:30:00 PM	R86913
Surr: 4-Terphenyl-d14	73.7	0	72.3-147		%Rec	1	3/30/2022 1:30:00 PM	R86913

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-54
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 8:20:00 AM
Lab ID: 2203C69-002D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.39	0.0016	0.0030		mg/L	1	4/6/2022 2:55:26 PM	66644
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 2:55:26 PM	66644
Cadmium	ND	0.0015	0.0020		mg/L	1	4/6/2022 2:55:26 PM	66644
Chromium	0.0064	0.0021	0.0060		mg/L	1	4/6/2022 2:55:26 PM	66644
Cobalt	0.078	0.0024	0.0060		mg/L	1	4/6/2022 2:55:26 PM	66644
Nickel	0.24	0.0033	0.010	*	mg/L	1	4/6/2022 2:55:26 PM	66644
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 2:55:26 PM	66644
Vanadium	0.015	0.0024	0.050	J	mg/L	1	4/6/2022 2:55:26 PM	66644
Zinc	0.031	0.0064	0.010		mg/L	1	4/6/2022 2:55:26 PM	66644
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/31/2022 1:20:16 PM	66472
Arsenic	0.0098	0.00013	0.0010		mg/L	1	3/31/2022 1:20:16 PM	66472
Lead	0.023	0.000061	0.00050	*	mg/L	1	3/31/2022 1:20:16 PM	66472
Selenium	0.0012	0.00037	0.0010		mg/L	1	3/31/2022 1:20:16 PM	66472
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00014	0.000091	0.00020	J	mg/L	1	3/28/2022 3:33:24 PM	66425

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-54
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 8:20:00 AM
Lab ID: 2203C69-002E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.20	0.0011	0.0020		mg/L	1	3/29/2022 2:03:04 PM	B86825
Beryllium	ND	0.00088	0.0020		mg/L	1	3/29/2022 2:03:04 PM	B86825
Cadmium	ND	0.00098	0.0020		mg/L	1	3/29/2022 2:03:04 PM	B86825
Chromium	ND	0.0020	0.0060		mg/L	1	3/29/2022 2:03:04 PM	B86825
Cobalt	0.086	0.0024	0.0060		mg/L	1	3/29/2022 2:03:04 PM	B86825
Nickel	0.27	0.0033	0.010	*	mg/L	1	3/29/2022 2:03:04 PM	B86825
Silver	ND	0.0013	0.0050		mg/L	1	3/29/2022 2:03:04 PM	B86825
Vanadium	ND	0.0017	0.050		mg/L	1	3/29/2022 2:03:04 PM	B86825
Zinc	0.017	0.0032	0.010		mg/L	1	3/29/2022 2:03:04 PM	B86825
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	0.00047	0.00044	0.0010	J	mg/L	1	3/24/2022 3:42:54 PM	B86714
Arsenic	0.0081	0.00012	0.0010		mg/L	1	3/24/2022 3:42:54 PM	B86714
Lead	0.0064	0.000057	0.00050		mg/L	1	3/24/2022 3:42:54 PM	B86714
Selenium	ND	0.00034	0.0010		mg/L	1	3/24/2022 3:42:54 PM	B86714
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/29/2022 2:09:34 PM	66456

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-66
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 8:50:00 AM
Lab ID: 2203C69-003A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	21000	110	500		µg/L	500	3/24/2022 9:30:11 PM	R86734
Toluene	24000	100	500		µg/L	500	3/24/2022 9:30:11 PM	R86734
Ethylbenzene	1000	11	50		µg/L	50	3/24/2022 9:58:47 PM	R86734
Methyl tert-butyl ether (MTBE)	660	20	50		µg/L	50	3/24/2022 9:58:47 PM	R86734
1,2,4-Trimethylbenzene	1400	6.1	50		µg/L	50	3/24/2022 9:58:47 PM	R86734
1,3,5-Trimethylbenzene	410	9.1	50		µg/L	50	3/24/2022 9:58:47 PM	R86734
1,2-Dichloroethane (EDC)	21	13	50	J	µg/L	50	3/24/2022 9:58:47 PM	R86734
Acetone	ND	130	500		µg/L	50	3/24/2022 9:58:47 PM	R86734
Bromomethane	ND	43	150		µg/L	50	3/24/2022 9:58:47 PM	R86734
2-Butanone	ND	100	500		µg/L	50	3/24/2022 9:58:47 PM	R86734
Carbon disulfide	ND	30	500		µg/L	50	3/24/2022 9:58:47 PM	R86734
Chlorobenzene	ND	7.8	50		µg/L	50	3/24/2022 9:58:47 PM	R86734
Chloroform	ND	6.7	50		µg/L	50	3/24/2022 9:58:47 PM	R86734
Chloromethane	54	21	150	J	µg/L	50	3/24/2022 9:58:47 PM	R86734
cis-1,2-DCE	ND	19	50		µg/L	50	3/24/2022 9:58:47 PM	R86734
1,1-Dichloroethane	27	14	50	J	µg/L	50	3/24/2022 9:58:47 PM	R86734
1,1-Dichloroethene	ND	10	50		µg/L	50	3/24/2022 9:58:47 PM	R86734
Isopropylbenzene	17	9.1	50	J	µg/L	50	3/24/2022 9:58:47 PM	R86734
4-Isopropyltoluene	ND	10	50		µg/L	50	3/24/2022 9:58:47 PM	R86734
Methylene Chloride	ND	25	150		µg/L	50	3/24/2022 9:58:47 PM	R86734
n-Butylbenzene	13	13	150	J	µg/L	50	3/24/2022 9:58:47 PM	R86734
n-Propylbenzene	71	9.1	50		µg/L	50	3/24/2022 9:58:47 PM	R86734
sec-Butylbenzene	ND	7.2	50		µg/L	50	3/24/2022 9:58:47 PM	R86734
Styrene	ND	6.8	50		µg/L	50	3/24/2022 9:58:47 PM	R86734
Tetrachloroethene (PCE)	ND	18	50		µg/L	50	3/24/2022 9:58:47 PM	R86734
1,1,1-Trichloroethane	ND	15	50		µg/L	50	3/24/2022 9:58:47 PM	R86734
Trichloroethene (TCE)	ND	10	50		µg/L	50	3/24/2022 9:58:47 PM	R86734
Vinyl chloride	ND	16	50		µg/L	50	3/24/2022 9:58:47 PM	R86734
Xylenes, Total	11000	19	75		µg/L	50	3/24/2022 9:58:47 PM	R86734
Surr: 1,2-Dichloroethane-d4	87.0	0	70-130		%Rec	50	3/24/2022 9:58:47 PM	R86734
Surr: 4-Bromofluorobenzene	93.5	0	70-130		%Rec	50	3/24/2022 9:58:47 PM	R86734
Surr: Dibromofluoromethane	90.6	0	70-130		%Rec	50	3/24/2022 9:58:47 PM	R86734
Surr: Toluene-d8	101	0	70-130		%Rec	50	3/24/2022 9:58:47 PM	R86734
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	130	1.4	2.5		mg/L	50	3/24/2022 9:58:47 PM	G86734
Surr: 4-Bromofluorobenzene	97.4	0	70-130		%Rec	50	3/24/2022 9:58:47 PM	G86734

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-66
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 8:50:00 AM
Lab ID: 2203C69-003B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	3/29/2022 4:25:42 PM	66393

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-66
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 8:50:00 AM
Lab ID: 2203C69-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	6.6	0.16	0.64		mg/L	10	3/29/2022 4:17:03 PM	66385
Motor Oil Range Organics (MRO)	ND	0.52	0.80	D	mg/L	10	3/29/2022 4:17:03 PM	66385
Surr: DNOP	0	0	42.2-138	S	%Rec	10	3/29/2022 4:17:03 PM	66385
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	11	200	D	µg/L	10	4/2/2022 9:27:06 PM	66392
Bis(2-ethylhexyl)phthalate	ND	45	100	D	µg/L	10	4/2/2022 9:27:06 PM	66392
Di-n-butyl phthalate	ND	65	100	D	µg/L	10	4/2/2022 9:27:06 PM	66392
Di-n-octyl phthalate	ND	31	200	D	µg/L	10	4/2/2022 9:27:06 PM	66392
1,4-Dichlorobenzene	ND	7.0	50	D	µg/L	10	4/2/2022 9:27:06 PM	66392
Diethyl phthalate	ND	39	100	D	µg/L	10	4/2/2022 9:27:06 PM	66392
Dimethyl phthalate	ND	20	100	D	µg/L	10	4/2/2022 9:27:06 PM	66392
2,4-Dimethylphenol	22	9.7	50	JD	µg/L	10	4/2/2022 9:27:06 PM	66392
2,4-Dinitrophenol	ND	5.0	50	D	µg/L	10	4/2/2022 9:27:06 PM	66392
1-Methylnaphthalene	25	6.0	50	JD	µg/L	10	4/2/2022 9:27:06 PM	66392
2-Methylnaphthalene	46	4.1	50	JD	µg/L	10	4/2/2022 9:27:06 PM	66392
2-Methylphenol	25	5.1	50	JD	µg/L	10	4/2/2022 9:27:06 PM	66392
3+4-Methylphenol	40	4.5	50	JD	µg/L	10	4/2/2022 9:27:06 PM	66392
Naphthalene	150	22	50	D	µg/L	10	4/2/2022 9:27:06 PM	66392
Phenol	46	3.3	50	JD	µg/L	10	4/2/2022 9:27:06 PM	66392
Pyridine	ND	100	100	D	µg/L	10	4/2/2022 9:27:06 PM	66392
2,4,6-Trichlorophenol	ND	4.3	50	D	µg/L	10	4/2/2022 9:27:06 PM	66392
Surr: 2-Fluorophenol	0	0	29.4-87.7	SD	%Rec	10	4/2/2022 9:27:06 PM	66392
Surr: Phenol-d5	0	0	28.5-64.7	SD	%Rec	10	4/2/2022 9:27:06 PM	66392
Surr: 2,4,6-Tribromophenol	0	0	18.6-129	SD	%Rec	10	4/2/2022 9:27:06 PM	66392
Surr: Nitrobenzene-d5	0	0	36.9-103	SD	%Rec	10	4/2/2022 9:27:06 PM	66392
Surr: 2-Fluorobiphenyl	0	0	38.1-99.9	SD	%Rec	10	4/2/2022 9:27:06 PM	66392
Surr: 4-Terphenyl-d14	0	0	48-155	SD	%Rec	10	4/2/2022 9:27:06 PM	66392
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.048	1.0		µg/L	1	3/30/2022 2:14:00 PM	R86913
Acenaphthene	0.28	0.031	0.10		µg/L	1	3/30/2022 2:14:00 PM	R86913
Fluorene	0.84	0.031	0.10		µg/L	1	3/30/2022 2:14:00 PM	R86913
Phenanthrene	1.2	0.057	0.10		µg/L	1	3/30/2022 2:14:00 PM	R86913
Anthracene	ND	0.034	0.10		µg/L	1	3/30/2022 2:14:00 PM	R86913
Fluoranthene	ND	0.10	0.20		µg/L	1	3/30/2022 2:14:00 PM	R86913
Pyrene	0.24	0.16	0.20		µg/L	1	3/30/2022 2:14:00 PM	R86913
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/30/2022 2:14:00 PM	R86913
Chrysene	ND	0.024	0.10		µg/L	1	3/30/2022 2:14:00 PM	R86913
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/30/2022 2:14:00 PM	R86913
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/30/2022 2:14:00 PM	R86913

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-66
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 8:50:00 AM
Lab ID: 2203C69-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	59.3	0	31.6-100		%Rec	1	3/30/2022 2:14:00 PM	R86913
Surr: 2-Fluorobiphenyl	50.0	0	26.7-90.1		%Rec	1	3/30/2022 2:14:00 PM	R86913
Surr: 4-Terphenyl-d14	66.9	0	72.3-147	S	%Rec	1	3/30/2022 2:14:00 PM	R86913

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-66
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 8:50:00 AM
Lab ID: 2203C69-003D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	2.3	0.0082	0.015	*	mg/L	5	4/6/2022 3:08:07 PM	66644
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 3:03:53 PM	66644
Cadmium	ND	0.0015	0.0020		mg/L	1	4/6/2022 3:03:53 PM	66644
Chromium	0.017	0.0021	0.0060		mg/L	1	4/6/2022 3:03:53 PM	66644
Cobalt	0.0095	0.0024	0.0060		mg/L	1	4/6/2022 3:03:53 PM	66644
Nickel	0.33	0.0033	0.010	*	mg/L	1	4/6/2022 3:03:53 PM	66644
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 3:03:53 PM	66644
Vanadium	0.034	0.0024	0.050	J	mg/L	1	4/6/2022 3:03:53 PM	66644
Zinc	0.023	0.0064	0.010		mg/L	1	4/6/2022 3:03:53 PM	66644
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/31/2022 1:22:43 PM	66472
Arsenic	0.0098	0.00013	0.0010		mg/L	1	3/31/2022 1:22:43 PM	66472
Lead	0.038	0.00061	0.0050	*	mg/L	10	3/31/2022 3:37:49 PM	66472
Selenium	0.0024	0.00037	0.0010		mg/L	1	3/31/2022 1:22:43 PM	66472
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/28/2022 3:35:32 PM	66425

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-66
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 8:50:00 AM
Lab ID: 2203C69-003E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	1.8	0.0056	0.010		mg/L	5	3/29/2022 2:07:48 PM	B86825
Beryllium	ND	0.00088	0.0020		mg/L	1	3/29/2022 2:06:24 PM	B86825
Cadmium	ND	0.00098	0.0020		mg/L	1	3/29/2022 2:06:24 PM	B86825
Chromium	ND	0.0020	0.0060		mg/L	1	3/29/2022 2:06:24 PM	B86825
Cobalt	0.0053	0.0024	0.0060	J	mg/L	1	3/29/2022 2:06:24 PM	B86825
Nickel	0.37	0.0033	0.010	*	mg/L	1	3/29/2022 2:06:24 PM	B86825
Silver	ND	0.0013	0.0050		mg/L	1	3/29/2022 2:06:24 PM	B86825
Vanadium	0.0029	0.0017	0.050	J	mg/L	1	3/29/2022 2:06:24 PM	B86825
Zinc	0.0081	0.0032	0.010	J	mg/L	1	3/29/2022 2:06:24 PM	B86825
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	3/24/2022 3:48:17 PM	B86714
Arsenic	0.0063	0.00012	0.0010		mg/L	1	3/24/2022 4:12:30 PM	B86714
Lead	0.00069	0.000057	0.00050		mg/L	1	3/24/2022 4:12:30 PM	B86714
Selenium	ND	0.00034	0.0010		mg/L	1	3/24/2022 4:12:30 PM	B86714
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/29/2022 2:15:57 PM	66456

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-55
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 9:10:00 AM
Lab ID: 2203C69-004A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	7300	110	500		µg/L	500	3/25/2022 12:21:17 AM	R86734
Toluene	270	10	50		µg/L	50	3/25/2022 12:49:40 AM	R86734
Ethylbenzene	550	11	50		µg/L	50	3/25/2022 12:49:40 AM	R86734
Methyl tert-butyl ether (MTBE)	970	20	50		µg/L	50	3/25/2022 12:49:40 AM	R86734
1,2,4-Trimethylbenzene	250	6.1	50		µg/L	50	3/25/2022 12:49:40 AM	R86734
1,3,5-Trimethylbenzene	57	9.1	50		µg/L	50	3/25/2022 12:49:40 AM	R86734
1,2-Dichloroethane (EDC)	ND	13	50		µg/L	50	3/25/2022 12:49:40 AM	R86734
Acetone	ND	130	500		µg/L	50	3/25/2022 12:49:40 AM	R86734
Bromomethane	ND	43	150		µg/L	50	3/25/2022 12:49:40 AM	R86734
2-Butanone	ND	100	500		µg/L	50	3/25/2022 12:49:40 AM	R86734
Carbon disulfide	ND	30	500		µg/L	50	3/25/2022 12:49:40 AM	R86734
Chlorobenzene	ND	7.8	50		µg/L	50	3/25/2022 12:49:40 AM	R86734
Chloroform	11	6.7	50	J	µg/L	50	3/25/2022 12:49:40 AM	R86734
Chloromethane	40	21	150	J	µg/L	50	3/25/2022 12:49:40 AM	R86734
cis-1,2-DCE	ND	19	50		µg/L	50	3/25/2022 12:49:40 AM	R86734
1,1-Dichloroethane	ND	14	50		µg/L	50	3/25/2022 12:49:40 AM	R86734
1,1-Dichloroethene	ND	10	50		µg/L	50	3/25/2022 12:49:40 AM	R86734
Isopropylbenzene	23	9.1	50	J	µg/L	50	3/25/2022 12:49:40 AM	R86734
4-Isopropyltoluene	ND	10	50		µg/L	50	3/25/2022 12:49:40 AM	R86734
Methylene Chloride	ND	25	150		µg/L	50	3/25/2022 12:49:40 AM	R86734
n-Butylbenzene	ND	13	150		µg/L	50	3/25/2022 12:49:40 AM	R86734
n-Propylbenzene	60	9.1	50		µg/L	50	3/25/2022 12:49:40 AM	R86734
sec-Butylbenzene	ND	7.2	50		µg/L	50	3/25/2022 12:49:40 AM	R86734
Styrene	ND	6.8	50		µg/L	50	3/25/2022 12:49:40 AM	R86734
Tetrachloroethene (PCE)	ND	18	50		µg/L	50	3/25/2022 12:49:40 AM	R86734
1,1,1-Trichloroethane	ND	15	50		µg/L	50	3/25/2022 12:49:40 AM	R86734
Trichloroethene (TCE)	ND	10	50		µg/L	50	3/25/2022 12:49:40 AM	R86734
Vinyl chloride	ND	16	50		µg/L	50	3/25/2022 12:49:40 AM	R86734
Xylenes, Total	650	19	75		µg/L	50	3/25/2022 12:49:40 AM	R86734
Surr: 1,2-Dichloroethane-d4	85.8	0	70-130		%Rec	50	3/25/2022 12:49:40 AM	R86734
Surr: 4-Bromofluorobenzene	94.3	0	70-130		%Rec	50	3/25/2022 12:49:40 AM	R86734
Surr: Dibromofluoromethane	88.2	0	70-130		%Rec	50	3/25/2022 12:49:40 AM	R86734
Surr: Toluene-d8	103	0	70-130		%Rec	50	3/25/2022 12:49:40 AM	R86734
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	25	1.4	2.5		mg/L	50	3/25/2022 12:49:40 AM	G86734
Surr: 4-Bromofluorobenzene	99.4	0	70-130		%Rec	50	3/25/2022 12:49:40 AM	G86734

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-55
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 9:10:00 AM
Lab ID: 2203C69-004B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	3/29/2022 4:56:01 PM	66393

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-55
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 9:10:00 AM
Lab ID: 2203C69-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	3.6	0.016	0.064		mg/L	1	3/28/2022 7:14:28 PM	66385
Motor Oil Range Organics (MRO)	0.084	0.052	0.080		mg/L	1	3/28/2022 7:14:28 PM	66385
Surr: DNOP	82.4	0	42.2-138		%Rec	1	3/28/2022 7:14:28 PM	66385
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	1.1	20		µg/L	1	4/2/2022 11:01:05 PM	66392
Bis(2-ethylhexyl)phthalate	4.6	4.5	10	J	µg/L	1	4/2/2022 11:01:05 PM	66392
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	4/2/2022 11:01:05 PM	66392
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	4/2/2022 11:01:05 PM	66392
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	4/2/2022 11:01:05 PM	66392
Diethyl phthalate	ND	3.9	10		µg/L	1	4/2/2022 11:01:05 PM	66392
Dimethyl phthalate	ND	2.0	10		µg/L	1	4/2/2022 11:01:05 PM	66392
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	4/2/2022 11:01:05 PM	66392
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	4/2/2022 11:01:05 PM	66392
2-Methylphenol	ND	0.51	5.0		µg/L	1	4/2/2022 11:01:05 PM	66392
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	4/2/2022 11:01:05 PM	66392
Naphthalene	29	2.2	5.0		µg/L	1	4/2/2022 11:01:05 PM	66392
Phenol	44	0.33	5.0		µg/L	1	4/2/2022 11:01:05 PM	66392
Pyridine	ND	10	10		µg/L	1	4/2/2022 11:01:05 PM	66392
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	4/2/2022 11:01:05 PM	66392
Surr: 2-Fluorophenol	58.9	0	29.4-87.7		%Rec	1	4/2/2022 11:01:05 PM	66392
Surr: Phenol-d5	47.3	0	28.5-64.7		%Rec	1	4/2/2022 11:01:05 PM	66392
Surr: 2,4,6-Tribromophenol	91.0	0	18.6-129		%Rec	1	4/2/2022 11:01:05 PM	66392
Surr: Nitrobenzene-d5	76.2	0	36.9-103		%Rec	1	4/2/2022 11:01:05 PM	66392
Surr: 2-Fluorobiphenyl	64.4	0	38.1-99.9		%Rec	1	4/2/2022 11:01:05 PM	66392
Surr: 4-Terphenyl-d14	88.9	0	48-155		%Rec	1	4/2/2022 11:01:05 PM	66392
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.048	1.0		µg/L	1	3/30/2022 2:58:00 PM	R86913
1-Methylnaphthalene	20	0.024	0.10		µg/L	1	3/30/2022 2:58:00 PM	R86913
2-Methylnaphthalene	13	0.034	0.10		µg/L	1	3/30/2022 2:58:00 PM	R86913
Acenaphthene	0.38	0.031	0.10		µg/L	1	3/30/2022 2:58:00 PM	R86913
Fluorene	1.1	0.031	0.10		µg/L	1	3/30/2022 2:58:00 PM	R86913
Phenanthrene	0.84	0.057	0.10		µg/L	1	3/30/2022 2:58:00 PM	R86913
Anthracene	ND	0.034	0.10		µg/L	1	3/30/2022 2:58:00 PM	R86913
Fluoranthene	ND	0.10	0.20		µg/L	1	3/30/2022 2:58:00 PM	R86913
Pyrene	ND	0.16	0.20		µg/L	1	3/30/2022 2:58:00 PM	R86913
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/30/2022 2:58:00 PM	R86913
Chrysene	ND	0.024	0.10		µg/L	1	3/30/2022 2:58:00 PM	R86913
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/30/2022 2:58:00 PM	R86913
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/30/2022 2:58:00 PM	R86913

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-55
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 9:10:00 AM
Lab ID: 2203C69-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	67.8	0	31.6-100		%Rec	1	3/30/2022 2:58:00 PM	R86913
Surr: 2-Fluorobiphenyl	52.9	0	26.7-90.1		%Rec	1	3/30/2022 2:58:00 PM	R86913
Surr: 4-Terphenyl-d14	68.6	0	72.3-147	S	%Rec	1	3/30/2022 2:58:00 PM	R86913

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-55
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 9:10:00 AM
Lab ID: 2203C69-004D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.70	0.0016	0.0030		mg/L	1	4/6/2022 3:17:19 PM	66644
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 3:17:19 PM	66644
Cadmium	ND	0.0015	0.0020		mg/L	1	4/6/2022 3:17:19 PM	66644
Chromium	0.0080	0.0021	0.0060		mg/L	1	4/6/2022 3:17:19 PM	66644
Cobalt	0.041	0.0024	0.0060		mg/L	1	4/6/2022 3:17:19 PM	66644
Nickel	0.24	0.0033	0.010	*	mg/L	1	4/6/2022 3:17:19 PM	66644
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 3:17:19 PM	66644
Vanadium	0.023	0.0024	0.050	J	mg/L	1	4/6/2022 3:17:19 PM	66644
Zinc	0.039	0.0064	0.010		mg/L	1	4/6/2022 3:17:19 PM	66644
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/31/2022 1:45:25 PM	66472
Arsenic	0.011	0.0013	0.010	*	mg/L	10	3/31/2022 3:42:42 PM	66472
Lead	0.0082	0.00061	0.0050		mg/L	10	3/31/2022 3:42:42 PM	66472
Selenium	ND	0.0037	0.010		mg/L	10	3/31/2022 3:42:42 PM	66472
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/28/2022 3:37:41 PM	66425

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-55
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 9:10:00 AM
Lab ID: 2203C69-004E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.64	0.0011	0.0020		mg/L	1	3/29/2022 2:09:14 PM	B86825
Beryllium	ND	0.00088	0.0020		mg/L	1	3/29/2022 2:09:14 PM	B86825
Cadmium	ND	0.00098	0.0020		mg/L	1	3/29/2022 2:09:14 PM	B86825
Chromium	ND	0.0020	0.0060		mg/L	1	3/29/2022 2:09:14 PM	B86825
Cobalt	0.012	0.0024	0.0060		mg/L	1	3/29/2022 2:09:14 PM	B86825
Nickel	0.26	0.0033	0.010	*	mg/L	1	3/29/2022 2:09:14 PM	B86825
Silver	ND	0.0013	0.0050		mg/L	1	3/29/2022 2:09:14 PM	B86825
Vanadium	0.0039	0.0017	0.050	J	mg/L	1	3/29/2022 2:09:14 PM	B86825
Zinc	0.011	0.0032	0.010		mg/L	1	3/29/2022 2:09:14 PM	B86825
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	3/24/2022 3:53:40 PM	B86714
Arsenic	0.0051	0.00012	0.0010		mg/L	1	3/24/2022 4:15:12 PM	B86714
Lead	ND	0.000057	0.00050		mg/L	1	3/24/2022 4:15:12 PM	B86714
Selenium	ND	0.00034	0.0010		mg/L	1	3/24/2022 4:15:12 PM	B86714
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/29/2022 2:18:03 PM	66456

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-13
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 9:30:00 AM
Lab ID: 2203C69-005A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	0.29	0.23	1.0	J	µg/L	1	3/25/2022 1:18:12 AM	R86734
Toluene	ND	0.20	1.0		µg/L	1	3/25/2022 1:18:12 AM	R86734
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/25/2022 1:18:12 AM	R86734
Methyl tert-butyl ether (MTBE)	110	0.39	1.0		µg/L	1	3/25/2022 1:18:12 AM	R86734
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/25/2022 1:18:12 AM	R86734
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/25/2022 1:18:12 AM	R86734
1,2-Dichloroethane (EDC)	0.76	0.25	1.0	J	µg/L	1	3/25/2022 1:18:12 AM	R86734
Acetone	ND	2.5	10		µg/L	1	3/25/2022 1:18:12 AM	R86734
Bromomethane	ND	0.85	3.0		µg/L	1	3/25/2022 1:18:12 AM	R86734
2-Butanone	ND	2.0	10		µg/L	1	3/25/2022 1:18:12 AM	R86734
Carbon disulfide	ND	0.59	10		µg/L	1	3/25/2022 1:18:12 AM	R86734
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/25/2022 1:18:12 AM	R86734
Chloroform	ND	0.13	1.0		µg/L	1	3/25/2022 1:18:12 AM	R86734
Chloromethane	ND	0.41	3.0		µg/L	1	3/25/2022 1:18:12 AM	R86734
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/25/2022 1:18:12 AM	R86734
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/25/2022 1:18:12 AM	R86734
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/25/2022 1:18:12 AM	R86734
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/25/2022 1:18:12 AM	R86734
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/25/2022 1:18:12 AM	R86734
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/25/2022 1:18:12 AM	R86734
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/25/2022 1:18:12 AM	R86734
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/25/2022 1:18:12 AM	R86734
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/25/2022 1:18:12 AM	R86734
Styrene	ND	0.14	1.0		µg/L	1	3/25/2022 1:18:12 AM	R86734
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/25/2022 1:18:12 AM	R86734
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/25/2022 1:18:12 AM	R86734
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/25/2022 1:18:12 AM	R86734
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/25/2022 1:18:12 AM	R86734
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/25/2022 1:18:12 AM	R86734
Surr: 1,2-Dichloroethane-d4	88.5	0	70-130		%Rec	1	3/25/2022 1:18:12 AM	R86734
Surr: 4-Bromofluorobenzene	95.0	0	70-130		%Rec	1	3/25/2022 1:18:12 AM	R86734
Surr: Dibromofluoromethane	92.2	0	70-130		%Rec	1	3/25/2022 1:18:12 AM	R86734
Surr: Toluene-d8	102	0	70-130		%Rec	1	3/25/2022 1:18:12 AM	R86734
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.15	0.028	0.050		mg/L	1	3/25/2022 1:18:12 AM	G86734
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	3/25/2022 1:18:12 AM	G86734

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-13
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 9:30:00 AM
Lab ID: 2203C69-005B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	3/29/2022 5:11:10 PM	66393

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-13
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 9:30:00 AM
Lab ID: 2203C69-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.036	0.016	0.064	J	mg/L	1	3/28/2022 7:38:44 PM	66385
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/28/2022 7:38:44 PM	66385
Surr: DNOP	110	0	42.2-138		%Rec	1	3/28/2022 7:38:44 PM	66385
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	1.1	20		µg/L	1	4/2/2022 11:42:55 PM	66392
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	4/2/2022 11:42:55 PM	66392
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	4/2/2022 11:42:55 PM	66392
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	4/2/2022 11:42:55 PM	66392
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	4/2/2022 11:42:55 PM	66392
Diethyl phthalate	ND	3.9	10		µg/L	1	4/2/2022 11:42:55 PM	66392
Dimethyl phthalate	ND	2.0	10		µg/L	1	4/2/2022 11:42:55 PM	66392
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	4/2/2022 11:42:55 PM	66392
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	4/2/2022 11:42:55 PM	66392
2-Methylphenol	ND	0.51	5.0		µg/L	1	4/2/2022 11:42:55 PM	66392
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	4/2/2022 11:42:55 PM	66392
Phenol	ND	0.33	5.0		µg/L	1	4/2/2022 11:42:55 PM	66392
Pyridine	ND	10	10		µg/L	1	4/2/2022 11:42:55 PM	66392
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	4/2/2022 11:42:55 PM	66392
Surr: 2-Fluorophenol	30.6	0	29.4-87.7		%Rec	1	4/2/2022 11:42:55 PM	66392
Surr: Phenol-d5	24.0	0	28.5-64.7	S	%Rec	1	4/2/2022 11:42:55 PM	66392
Surr: 2,4,6-Tribromophenol	39.3	0	18.6-129		%Rec	1	4/2/2022 11:42:55 PM	66392
Surr: Nitrobenzene-d5	42.7	0	36.9-103		%Rec	1	4/2/2022 11:42:55 PM	66392
Surr: 2-Fluorobiphenyl	34.9	0	38.1-99.9	S	%Rec	1	4/2/2022 11:42:55 PM	66392
Surr: 4-Terphenyl-d14	71.1	0	48-155		%Rec	1	4/2/2022 11:42:55 PM	66392
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.048	1.0		µg/L	1	3/30/2022 3:42:00 PM	R86913
Naphthalene	ND	0.034	0.10		µg/L	1	3/30/2022 3:42:00 PM	R86913
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/30/2022 3:42:00 PM	R86913
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/30/2022 3:42:00 PM	R86913
Acenaphthene	ND	0.031	0.10		µg/L	1	3/30/2022 3:42:00 PM	R86913
Fluorene	ND	0.031	0.10		µg/L	1	3/30/2022 3:42:00 PM	R86913
Phenanthrene	ND	0.057	0.10		µg/L	1	3/30/2022 3:42:00 PM	R86913
Anthracene	ND	0.034	0.10		µg/L	1	3/30/2022 3:42:00 PM	R86913
Fluoranthene	ND	0.10	0.20		µg/L	1	3/30/2022 3:42:00 PM	R86913
Pyrene	ND	0.16	0.20		µg/L	1	3/30/2022 3:42:00 PM	R86913
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/30/2022 3:42:00 PM	R86913
Chrysene	ND	0.024	0.10		µg/L	1	3/30/2022 3:42:00 PM	R86913
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/30/2022 3:42:00 PM	R86913
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/30/2022 3:42:00 PM	R86913

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-13
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 9:30:00 AM
Lab ID: 2203C69-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	46.8	0	31.6-100		%Rec	1	3/30/2022 3:42:00 PM	R86913
Surr: 2-Fluorobiphenyl	41.7	0	26.7-90.1		%Rec	1	3/30/2022 3:42:00 PM	R86913
Surr: 4-Terphenyl-d14	82.5	0	72.3-147		%Rec	1	3/30/2022 3:42:00 PM	R86913

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-13
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 9:30:00 AM
Lab ID: 2203C69-005D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.020	0.0016	0.0030		mg/L	1	4/6/2022 3:20:08 PM	66644
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 3:20:08 PM	66644
Cadmium	ND	0.0015	0.0020		mg/L	1	4/6/2022 3:20:08 PM	66644
Chromium	ND	0.0021	0.0060		mg/L	1	4/6/2022 3:20:08 PM	66644
Cobalt	ND	0.0024	0.0060		mg/L	1	4/6/2022 3:20:08 PM	66644
Nickel	ND	0.0033	0.010		mg/L	1	4/6/2022 3:20:08 PM	66644
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 3:20:08 PM	66644
Vanadium	0.0025	0.0024	0.050	J	mg/L	1	4/6/2022 3:20:08 PM	66644
Zinc	ND	0.0064	0.010		mg/L	1	4/6/2022 3:20:08 PM	66644
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/31/2022 1:47:52 PM	66472
Arsenic	0.00075	0.00013	0.0010	J	mg/L	1	3/31/2022 1:47:52 PM	66472
Lead	0.000067	0.000061	0.00050	J	mg/L	1	3/31/2022 1:47:52 PM	66472
Selenium	ND	0.00037	0.0010		mg/L	1	3/31/2022 1:47:52 PM	66472
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/28/2022 3:39:50 PM	66425

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-13
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 9:30:00 AM
Lab ID: 2203C69-005E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.025	0.0011	0.0020		mg/L	1	3/29/2022 2:12:02 PM	B86825
Beryllium	ND	0.00088	0.0020		mg/L	1	3/29/2022 2:12:02 PM	B86825
Cadmium	ND	0.00098	0.0020		mg/L	1	3/29/2022 2:12:02 PM	B86825
Chromium	ND	0.0020	0.0060		mg/L	1	3/29/2022 2:12:02 PM	B86825
Cobalt	ND	0.0024	0.0060		mg/L	1	3/29/2022 2:12:02 PM	B86825
Nickel	0.0033	0.0033	0.010	J	mg/L	1	3/29/2022 2:12:02 PM	B86825
Silver	ND	0.0013	0.0050		mg/L	1	3/29/2022 2:12:02 PM	B86825
Vanadium	ND	0.0017	0.050		mg/L	1	3/29/2022 2:12:02 PM	B86825
Zinc	0.0084	0.0032	0.010	J	mg/L	1	3/29/2022 2:12:02 PM	B86825
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/24/2022 2:59:47 PM	B86714
Arsenic	0.00074	0.00012	0.0010	J	mg/L	1	3/24/2022 2:59:47 PM	B86714
Lead	ND	0.000057	0.00050		mg/L	1	3/24/2022 2:59:47 PM	B86714
Selenium	ND	0.00034	0.0010		mg/L	1	3/24/2022 2:59:47 PM	B86714
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/29/2022 2:20:09 PM	66456

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-56
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 9:50:00 AM
Lab ID: 2203C69-006A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	0.91	0.23	1.0	J	µg/L	1	3/25/2022 1:46:41 AM	R86734
Toluene	ND	0.20	1.0		µg/L	1	3/25/2022 1:46:41 AM	R86734
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/25/2022 1:46:41 AM	R86734
Methyl tert-butyl ether (MTBE)	23	0.39	1.0		µg/L	1	3/25/2022 1:46:41 AM	R86734
1,2,4-Trimethylbenzene	0.22	0.12	1.0	J	µg/L	1	3/25/2022 1:46:41 AM	R86734
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/25/2022 1:46:41 AM	R86734
1,2-Dichloroethane (EDC)	6.6	0.25	1.0		µg/L	1	3/25/2022 1:46:41 AM	R86734
Acetone	17	2.5	10		µg/L	1	3/25/2022 1:46:41 AM	R86734
Bromomethane	ND	0.85	3.0		µg/L	1	3/25/2022 1:46:41 AM	R86734
2-Butanone	ND	2.0	10		µg/L	1	3/25/2022 1:46:41 AM	R86734
Carbon disulfide	ND	0.59	10		µg/L	1	3/25/2022 1:46:41 AM	R86734
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/25/2022 1:46:41 AM	R86734
Chloroform	ND	0.13	1.0		µg/L	1	3/25/2022 1:46:41 AM	R86734
Chloromethane	1.6	0.41	3.0	J	µg/L	1	3/25/2022 1:46:41 AM	R86734
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/25/2022 1:46:41 AM	R86734
1,1-Dichloroethane	0.58	0.27	1.0	J	µg/L	1	3/25/2022 1:46:41 AM	R86734
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/25/2022 1:46:41 AM	R86734
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/25/2022 1:46:41 AM	R86734
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/25/2022 1:46:41 AM	R86734
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/25/2022 1:46:41 AM	R86734
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/25/2022 1:46:41 AM	R86734
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/25/2022 1:46:41 AM	R86734
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/25/2022 1:46:41 AM	R86734
Styrene	ND	0.14	1.0		µg/L	1	3/25/2022 1:46:41 AM	R86734
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/25/2022 1:46:41 AM	R86734
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/25/2022 1:46:41 AM	R86734
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/25/2022 1:46:41 AM	R86734
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/25/2022 1:46:41 AM	R86734
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/25/2022 1:46:41 AM	R86734
Surr: 1,2-Dichloroethane-d4	89.5	0	70-130		%Rec	1	3/25/2022 1:46:41 AM	R86734
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	3/25/2022 1:46:41 AM	R86734
Surr: Dibromofluoromethane	94.6	0	70-130		%Rec	1	3/25/2022 1:46:41 AM	R86734
Surr: Toluene-d8	102	0	70-130		%Rec	1	3/25/2022 1:46:41 AM	R86734
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.50	0.028	0.050		mg/L	1	3/25/2022 1:46:41 AM	G86734
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	1	3/25/2022 1:46:41 AM	G86734

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-56
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 9:50:00 AM
Lab ID: 2203C69-006B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	3/29/2022 5:26:24 PM	66393

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-56
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 9:50:00 AM
Lab ID: 2203C69-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	1.1	0.016	0.064		mg/L	1	3/28/2022 8:03:03 PM	66385
Motor Oil Range Organics (MRO)	0.24	0.052	0.080		mg/L	1	3/28/2022 8:03:03 PM	66385
Surr: DNOP	147	0	42.2-138	S	%Rec	1	3/28/2022 8:03:03 PM	66385
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	1.1	20		µg/L	1	4/3/2022 12:24:45 AM	66392
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	4/3/2022 12:24:45 AM	66392
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	4/3/2022 12:24:45 AM	66392
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	4/3/2022 12:24:45 AM	66392
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	4/3/2022 12:24:45 AM	66392
Diethyl phthalate	ND	3.9	10		µg/L	1	4/3/2022 12:24:45 AM	66392
Dimethyl phthalate	ND	2.0	10		µg/L	1	4/3/2022 12:24:45 AM	66392
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	4/3/2022 12:24:45 AM	66392
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	4/3/2022 12:24:45 AM	66392
2-Methylphenol	ND	0.51	5.0		µg/L	1	4/3/2022 12:24:45 AM	66392
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	4/3/2022 12:24:45 AM	66392
Phenol	ND	0.33	5.0		µg/L	1	4/3/2022 12:24:45 AM	66392
Pyridine	ND	10	10		µg/L	1	4/3/2022 12:24:45 AM	66392
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	4/3/2022 12:24:45 AM	66392
Surr: 2-Fluorophenol	61.4	0	29.4-87.7		%Rec	1	4/3/2022 12:24:45 AM	66392
Surr: Phenol-d5	44.6	0	28.5-64.7		%Rec	1	4/3/2022 12:24:45 AM	66392
Surr: 2,4,6-Tribromophenol	79.5	0	18.6-129		%Rec	1	4/3/2022 12:24:45 AM	66392
Surr: Nitrobenzene-d5	75.7	0	36.9-103		%Rec	1	4/3/2022 12:24:45 AM	66392
Surr: 2-Fluorobiphenyl	64.4	0	38.1-99.9		%Rec	1	4/3/2022 12:24:45 AM	66392
Surr: 4-Terphenyl-d14	87.0	0	48-155		%Rec	1	4/3/2022 12:24:45 AM	66392
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.048	1.0		µg/L	1	3/30/2022 4:26:00 PM	R86913
Naphthalene	ND	0.034	0.10		µg/L	1	3/30/2022 4:26:00 PM	R86913
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/30/2022 4:26:00 PM	R86913
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/30/2022 4:26:00 PM	R86913
Acenaphthene	ND	0.031	0.10		µg/L	1	3/30/2022 4:26:00 PM	R86913
Fluorene	ND	0.031	0.10		µg/L	1	3/30/2022 4:26:00 PM	R86913
Phenanthrene	ND	0.057	0.10		µg/L	1	3/30/2022 4:26:00 PM	R86913
Anthracene	ND	0.034	0.10		µg/L	1	3/30/2022 4:26:00 PM	R86913
Fluoranthene	ND	0.10	0.20		µg/L	1	3/30/2022 4:26:00 PM	R86913
Pyrene	ND	0.16	0.20		µg/L	1	3/30/2022 4:26:00 PM	R86913
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/30/2022 4:26:00 PM	R86913
Chrysene	ND	0.024	0.10		µg/L	1	3/30/2022 4:26:00 PM	R86913
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/30/2022 4:26:00 PM	R86913
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/30/2022 4:26:00 PM	R86913

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-56
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 9:50:00 AM
Lab ID: 2203C69-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	67.7	0	31.6-100		%Rec	1	3/30/2022 4:26:00 PM	R86913
Surr: 2-Fluorobiphenyl	58.1	0	26.7-90.1		%Rec	1	3/30/2022 4:26:00 PM	R86913
Surr: 4-Terphenyl-d14	74.5	0	72.3-147		%Rec	1	3/30/2022 4:26:00 PM	R86913

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-56
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 9:50:00 AM
Lab ID: 2203C69-006D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.45	0.0016	0.0030		mg/L	1	4/6/2022 3:23:23 PM	66644
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 3:23:23 PM	66644
Cadmium	ND	0.0015	0.0020		mg/L	1	4/6/2022 3:23:23 PM	66644
Chromium	ND	0.0021	0.0060		mg/L	1	4/6/2022 3:23:23 PM	66644
Cobalt	0.0069	0.0024	0.0060		mg/L	1	4/6/2022 3:23:23 PM	66644
Nickel	0.072	0.0033	0.010		mg/L	1	4/6/2022 3:23:23 PM	66644
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 3:23:23 PM	66644
Vanadium	0.0083	0.0024	0.050	J	mg/L	1	4/6/2022 3:23:23 PM	66644
Zinc	0.010	0.0064	0.010		mg/L	1	4/6/2022 3:23:23 PM	66644
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/31/2022 1:50:18 PM	66472
Arsenic	0.0055	0.00013	0.0010		mg/L	1	3/31/2022 1:50:18 PM	66472
Lead	0.0015	0.000061	0.00050		mg/L	1	3/31/2022 1:50:18 PM	66472
Selenium	0.00082	0.00037	0.0010	J	mg/L	1	3/31/2022 1:50:18 PM	66472
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/28/2022 3:41:59 PM	66425

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-56
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 9:50:00 AM
Lab ID: 2203C69-006E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.43	0.0011	0.0020		mg/L	1	3/29/2022 2:15:17 PM	B86825
Beryllium	ND	0.00088	0.0020		mg/L	1	3/29/2022 2:15:17 PM	B86825
Cadmium	ND	0.00098	0.0020		mg/L	1	3/29/2022 2:15:17 PM	B86825
Chromium	ND	0.0020	0.0060		mg/L	1	3/29/2022 2:15:17 PM	B86825
Cobalt	0.0074	0.0024	0.0060		mg/L	1	3/29/2022 2:15:17 PM	B86825
Nickel	0.083	0.0033	0.010		mg/L	1	3/29/2022 2:15:17 PM	B86825
Silver	ND	0.0013	0.0050		mg/L	1	3/29/2022 2:15:17 PM	B86825
Vanadium	0.0033	0.0017	0.050	J	mg/L	1	3/29/2022 2:15:17 PM	B86825
Zinc	0.012	0.0032	0.010		mg/L	1	3/29/2022 2:15:17 PM	B86825
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0089	0.020		mg/L	20	3/24/2022 3:02:29 PM	B86714
Arsenic	0.0037	0.00012	0.0010		mg/L	1	3/24/2022 4:01:45 PM	B86714
Lead	0.00015	0.000057	0.00050	J	mg/L	1	3/24/2022 4:01:45 PM	B86714
Selenium	ND	0.00034	0.0010		mg/L	1	3/24/2022 4:01:45 PM	B86714
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/29/2022 2:22:17 PM	66456

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-59
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 10:10:00 AM
Lab ID: 2203C69-007A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	3/25/2022 2:15:15 AM	R86734
Toluene	ND	0.20	1.0		µg/L	1	3/25/2022 2:15:15 AM	R86734
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/25/2022 2:15:15 AM	R86734
Methyl tert-butyl ether (MTBE)	11	0.39	1.0		µg/L	1	3/25/2022 2:15:15 AM	R86734
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/25/2022 2:15:15 AM	R86734
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/25/2022 2:15:15 AM	R86734
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	3/25/2022 2:15:15 AM	R86734
Acetone	ND	2.5	10		µg/L	1	3/25/2022 2:15:15 AM	R86734
Bromomethane	ND	0.85	3.0		µg/L	1	3/25/2022 2:15:15 AM	R86734
2-Butanone	ND	2.0	10		µg/L	1	3/25/2022 2:15:15 AM	R86734
Carbon disulfide	ND	0.59	10		µg/L	1	3/25/2022 2:15:15 AM	R86734
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/25/2022 2:15:15 AM	R86734
Chloroform	ND	0.13	1.0		µg/L	1	3/25/2022 2:15:15 AM	R86734
Chloromethane	0.66	0.41	3.0	J	µg/L	1	3/25/2022 2:15:15 AM	R86734
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/25/2022 2:15:15 AM	R86734
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/25/2022 2:15:15 AM	R86734
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/25/2022 2:15:15 AM	R86734
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/25/2022 2:15:15 AM	R86734
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/25/2022 2:15:15 AM	R86734
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/25/2022 2:15:15 AM	R86734
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/25/2022 2:15:15 AM	R86734
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/25/2022 2:15:15 AM	R86734
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/25/2022 2:15:15 AM	R86734
Styrene	ND	0.14	1.0		µg/L	1	3/25/2022 2:15:15 AM	R86734
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/25/2022 2:15:15 AM	R86734
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/25/2022 2:15:15 AM	R86734
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/25/2022 2:15:15 AM	R86734
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/25/2022 2:15:15 AM	R86734
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/25/2022 2:15:15 AM	R86734
Surr: 1,2-Dichloroethane-d4	87.9	0	70-130		%Rec	1	3/25/2022 2:15:15 AM	R86734
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	3/25/2022 2:15:15 AM	R86734
Surr: Dibromofluoromethane	91.4	0	70-130		%Rec	1	3/25/2022 2:15:15 AM	R86734
Surr: Toluene-d8	96.9	0	70-130		%Rec	1	3/25/2022 2:15:15 AM	R86734
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	2.3	0.028	0.050		mg/L	1	3/25/2022 2:15:15 AM	G86734
Surr: 4-Bromofluorobenzene	98.9	0	70-130		%Rec	1	3/25/2022 2:15:15 AM	G86734

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-59
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 10:10:00 AM
Lab ID: 2203C69-007B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0093		µg/L	1	3/29/2022 5:41:41 PM	66393

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-59
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 10:10:00 AM
Lab ID: 2203C69-007C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.49	0.016	0.064		mg/L	1	3/28/2022 8:27:10 PM	66385
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/28/2022 8:27:10 PM	66385
Surr: DNOP	99.5	0	42.2-138		%Rec	1	3/28/2022 8:27:10 PM	66385
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	1.1	20		µg/L	1	4/3/2022 1:06:16 AM	66392
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	4/3/2022 1:06:16 AM	66392
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	4/3/2022 1:06:16 AM	66392
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	4/3/2022 1:06:16 AM	66392
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	4/3/2022 1:06:16 AM	66392
Diethyl phthalate	ND	3.9	10		µg/L	1	4/3/2022 1:06:16 AM	66392
Dimethyl phthalate	ND	2.0	10		µg/L	1	4/3/2022 1:06:16 AM	66392
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	4/3/2022 1:06:16 AM	66392
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	4/3/2022 1:06:16 AM	66392
2-Methylphenol	ND	0.51	5.0		µg/L	1	4/3/2022 1:06:16 AM	66392
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	4/3/2022 1:06:16 AM	66392
Phenol	ND	0.33	5.0		µg/L	1	4/3/2022 1:06:16 AM	66392
Pyridine	ND	10	10		µg/L	1	4/3/2022 1:06:16 AM	66392
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	4/3/2022 1:06:16 AM	66392
Surr: 2-Fluorophenol	19.4	0	29.4-87.7	S	%Rec	1	4/3/2022 1:06:16 AM	66392
Surr: Phenol-d5	34.9	0	28.5-64.7		%Rec	1	4/3/2022 1:06:16 AM	66392
Surr: 2,4,6-Tribromophenol	6.62	0	18.6-129	S	%Rec	1	4/3/2022 1:06:16 AM	66392
Surr: Nitrobenzene-d5	61.1	0	36.9-103		%Rec	1	4/3/2022 1:06:16 AM	66392
Surr: 2-Fluorobiphenyl	54.1	0	38.1-99.9		%Rec	1	4/3/2022 1:06:16 AM	66392
Surr: 4-Terphenyl-d14	85.7	0	48-155		%Rec	1	4/3/2022 1:06:16 AM	66392
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	4.8	0.048	1.0		µg/L	1	3/30/2022 5:11:00 PM	R86913
Naphthalene	ND	0.034	0.10		µg/L	1	3/30/2022 5:11:00 PM	R86913
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/30/2022 5:11:00 PM	R86913
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/30/2022 5:11:00 PM	R86913
Acenaphthene	ND	0.031	0.10		µg/L	1	3/30/2022 5:11:00 PM	R86913
Fluorene	ND	0.031	0.10		µg/L	1	3/30/2022 5:11:00 PM	R86913
Phenanthrene	ND	0.057	0.10		µg/L	1	3/30/2022 5:11:00 PM	R86913
Anthracene	ND	0.034	0.10		µg/L	1	3/30/2022 5:11:00 PM	R86913
Fluoranthene	ND	0.10	0.20		µg/L	1	3/30/2022 5:11:00 PM	R86913
Pyrene	ND	0.16	0.20		µg/L	1	3/30/2022 5:11:00 PM	R86913
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/30/2022 5:11:00 PM	R86913
Chrysene	ND	0.024	0.10		µg/L	1	3/30/2022 5:11:00 PM	R86913
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/30/2022 5:11:00 PM	R86913
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/30/2022 5:11:00 PM	R86913

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-59
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 10:10:00 AM
Lab ID: 2203C69-007C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	59.0	0	31.6-100		%Rec	1	3/30/2022 5:11:00 PM	R86913
Surr: 2-Fluorobiphenyl	51.9	0	26.7-90.1		%Rec	1	3/30/2022 5:11:00 PM	R86913
Surr: 4-Terphenyl-d14	84.5	0	72.3-147		%Rec	1	3/30/2022 5:11:00 PM	R86913

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-59
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 10:10:00 AM
Lab ID: 2203C69-007D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.099	0.0016	0.0030		mg/L	1	4/6/2022 3:26:15 PM	66644
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 3:26:15 PM	66644
Cadmium	ND	0.0015	0.0020		mg/L	1	4/6/2022 3:26:15 PM	66644
Chromium	0.0028	0.0021	0.0060	J	mg/L	1	4/6/2022 3:26:15 PM	66644
Cobalt	0.0043	0.0024	0.0060	J	mg/L	1	4/6/2022 3:26:15 PM	66644
Nickel	0.037	0.0033	0.010		mg/L	1	4/6/2022 3:26:15 PM	66644
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 3:26:15 PM	66644
Vanadium	0.012	0.0024	0.050	J	mg/L	1	4/6/2022 3:26:15 PM	66644
Zinc	0.0064	0.0064	0.010	J	mg/L	1	4/6/2022 3:26:15 PM	66644
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	3/31/2022 3:50:02 PM	66472
Arsenic	0.0051	0.00063	0.0050		mg/L	5	3/31/2022 3:50:02 PM	66472
Lead	0.0020	0.00031	0.0025	J	mg/L	5	3/31/2022 3:50:02 PM	66472
Selenium	0.0020	0.0019	0.0050	J	mg/L	5	3/31/2022 3:50:02 PM	66472
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00013	0.000091	0.00020	J	mg/L	1	3/28/2022 3:44:07 PM	66425

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-59
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 10:10:00 AM
Lab ID: 2203C69-007E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.014	0.0011	0.0020		mg/L	1	3/29/2022 2:23:08 PM	B86825
Beryllium	ND	0.00088	0.0020		mg/L	1	3/29/2022 2:23:08 PM	B86825
Cadmium	ND	0.00098	0.0020		mg/L	1	3/29/2022 2:23:08 PM	B86825
Chromium	ND	0.0020	0.0060		mg/L	1	3/29/2022 2:23:08 PM	B86825
Cobalt	0.0050	0.0024	0.0060	J	mg/L	1	3/29/2022 2:23:08 PM	B86825
Nickel	0.042	0.0033	0.010		mg/L	1	3/29/2022 2:23:08 PM	B86825
Silver	ND	0.0013	0.0050		mg/L	1	3/29/2022 2:23:08 PM	B86825
Vanadium	0.0034	0.0017	0.050	J	mg/L	1	3/29/2022 2:23:08 PM	B86825
Zinc	0.0091	0.0032	0.010	J	mg/L	1	3/29/2022 2:23:08 PM	B86825
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0044	0.010		mg/L	10	3/24/2022 3:05:10 PM	B86714
Arsenic	0.0047	0.0012	0.010	J	mg/L	10	3/24/2022 3:05:10 PM	B86714
Lead	0.00061	0.00057	0.0050	J	mg/L	10	3/24/2022 3:05:10 PM	B86714
Selenium	ND	0.0034	0.010		mg/L	10	3/24/2022 3:05:10 PM	B86714
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/29/2022 2:24:26 PM	66456

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-60
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 10:30:00 AM
Lab ID: 2203C69-008A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	3/25/2022 2:43:47 AM	R86734
Toluene	ND	0.20	1.0		µg/L	1	3/25/2022 2:43:47 AM	R86734
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/25/2022 2:43:47 AM	R86734
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/25/2022 2:43:47 AM	R86734
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/25/2022 2:43:47 AM	R86734
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/25/2022 2:43:47 AM	R86734
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	3/25/2022 2:43:47 AM	R86734
Acetone	ND	2.5	10		µg/L	1	3/25/2022 2:43:47 AM	R86734
Bromomethane	ND	0.85	3.0		µg/L	1	3/25/2022 2:43:47 AM	R86734
2-Butanone	ND	2.0	10		µg/L	1	3/25/2022 2:43:47 AM	R86734
Carbon disulfide	ND	0.59	10		µg/L	1	3/25/2022 2:43:47 AM	R86734
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/25/2022 2:43:47 AM	R86734
Chloroform	ND	0.13	1.0		µg/L	1	3/25/2022 2:43:47 AM	R86734
Chloromethane	0.70	0.41	3.0	J	µg/L	1	3/25/2022 2:43:47 AM	R86734
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/25/2022 2:43:47 AM	R86734
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/25/2022 2:43:47 AM	R86734
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/25/2022 2:43:47 AM	R86734
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/25/2022 2:43:47 AM	R86734
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/25/2022 2:43:47 AM	R86734
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/25/2022 2:43:47 AM	R86734
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/25/2022 2:43:47 AM	R86734
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/25/2022 2:43:47 AM	R86734
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/25/2022 2:43:47 AM	R86734
Styrene	ND	0.14	1.0		µg/L	1	3/25/2022 2:43:47 AM	R86734
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/25/2022 2:43:47 AM	R86734
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/25/2022 2:43:47 AM	R86734
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/25/2022 2:43:47 AM	R86734
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/25/2022 2:43:47 AM	R86734
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/25/2022 2:43:47 AM	R86734
Surr: 1,2-Dichloroethane-d4	88.1	0	70-130		%Rec	1	3/25/2022 2:43:47 AM	R86734
Surr: 4-Bromofluorobenzene	100	0	70-130		%Rec	1	3/25/2022 2:43:47 AM	R86734
Surr: Dibromofluoromethane	89.7	0	70-130		%Rec	1	3/25/2022 2:43:47 AM	R86734
Surr: Toluene-d8	100	0	70-130		%Rec	1	3/25/2022 2:43:47 AM	R86734
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.066	0.028	0.050		mg/L	1	3/25/2022 2:43:47 AM	G86734
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	3/25/2022 2:43:47 AM	G86734

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-60
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 10:30:00 AM
Lab ID: 2203C69-008B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	3/29/2022 5:56:56 PM	66393

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-60
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 10:30:00 AM
Lab ID: 2203C69-008C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.092	0.016	0.064		mg/L	1	3/28/2022 9:15:44 PM	66385
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/28/2022 9:15:44 PM	66385
Surr: DNOP	98.4	0	42.2-138		%Rec	1	3/28/2022 9:15:44 PM	66385
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	1.1	20		µg/L	1	4/3/2022 1:47:48 AM	66392
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	4/3/2022 1:47:48 AM	66392
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	4/3/2022 1:47:48 AM	66392
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	4/3/2022 1:47:48 AM	66392
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	4/3/2022 1:47:48 AM	66392
Diethyl phthalate	ND	3.9	10		µg/L	1	4/3/2022 1:47:48 AM	66392
Dimethyl phthalate	ND	2.0	10		µg/L	1	4/3/2022 1:47:48 AM	66392
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	4/3/2022 1:47:48 AM	66392
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	4/3/2022 1:47:48 AM	66392
2-Methylphenol	ND	0.51	5.0		µg/L	1	4/3/2022 1:47:48 AM	66392
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	4/3/2022 1:47:48 AM	66392
Phenol	ND	0.33	5.0		µg/L	1	4/3/2022 1:47:48 AM	66392
Pyridine	ND	10	10		µg/L	1	4/3/2022 1:47:48 AM	66392
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	4/3/2022 1:47:48 AM	66392
Surr: 2-Fluorophenol	49.5	0	29.4-87.7		%Rec	1	4/3/2022 1:47:48 AM	66392
Surr: Phenol-d5	39.0	0	28.5-64.7		%Rec	1	4/3/2022 1:47:48 AM	66392
Surr: 2,4,6-Tribromophenol	54.6	0	18.6-129		%Rec	1	4/3/2022 1:47:48 AM	66392
Surr: Nitrobenzene-d5	64.7	0	36.9-103		%Rec	1	4/3/2022 1:47:48 AM	66392
Surr: 2-Fluorobiphenyl	58.0	0	38.1-99.9		%Rec	1	4/3/2022 1:47:48 AM	66392
Surr: 4-Terphenyl-d14	75.6	0	48-155		%Rec	1	4/3/2022 1:47:48 AM	66392
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	0.24	0.048	1.0	J	µg/L	1	3/30/2022 5:56:00 PM	R86913
Naphthalene	ND	0.034	0.10		µg/L	1	3/30/2022 5:56:00 PM	R86913
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/30/2022 5:56:00 PM	R86913
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/30/2022 5:56:00 PM	R86913
Acenaphthene	ND	0.031	0.10		µg/L	1	3/30/2022 5:56:00 PM	R86913
Fluorene	ND	0.031	0.10		µg/L	1	3/30/2022 5:56:00 PM	R86913
Phenanthrene	ND	0.057	0.10		µg/L	1	3/30/2022 5:56:00 PM	R86913
Anthracene	ND	0.034	0.10		µg/L	1	3/30/2022 5:56:00 PM	R86913
Fluoranthene	ND	0.10	0.20		µg/L	1	3/30/2022 5:56:00 PM	R86913
Pyrene	ND	0.16	0.20		µg/L	1	3/30/2022 5:56:00 PM	R86913
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/30/2022 5:56:00 PM	R86913
Chrysene	ND	0.024	0.10		µg/L	1	3/30/2022 5:56:00 PM	R86913
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/30/2022 5:56:00 PM	R86913
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/30/2022 5:56:00 PM	R86913

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-60
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 10:30:00 AM
Lab ID: 2203C69-008C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	65.8	0	31.6-100		%Rec	1	3/30/2022 5:56:00 PM	R86913
Surr: 2-Fluorobiphenyl	58.3	0	26.7-90.1		%Rec	1	3/30/2022 5:56:00 PM	R86913
Surr: 4-Terphenyl-d14	82.5	0	72.3-147		%Rec	1	3/30/2022 5:56:00 PM	R86913

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-60
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 10:30:00 AM
Lab ID: 2203C69-008D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	1.3	0.0082	0.015		mg/L	5	4/6/2022 3:35:31 PM	66644
Beryllium	0.0026	0.00088	0.0020		mg/L	1	4/6/2022 3:34:06 PM	66644
Cadmium	ND	0.0015	0.0020		mg/L	1	4/6/2022 3:34:06 PM	66644
Chromium	0.080	0.0021	0.0060		mg/L	1	4/6/2022 3:34:06 PM	66644
Cobalt	0.019	0.0024	0.0060		mg/L	1	4/6/2022 3:34:06 PM	66644
Nickel	0.084	0.0033	0.010		mg/L	1	4/6/2022 3:34:06 PM	66644
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 3:34:06 PM	66644
Vanadium	0.084	0.0024	0.050		mg/L	1	4/6/2022 3:34:06 PM	66644
Zinc	0.064	0.0064	0.010		mg/L	1	4/6/2022 3:34:06 PM	66644
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/31/2022 1:55:11 PM	66472
Arsenic	0.0061	0.00013	0.0010		mg/L	1	3/31/2022 1:55:11 PM	66472
Lead	0.022	0.00031	0.0025	*	mg/L	5	3/31/2022 3:52:28 PM	66472
Selenium	0.023	0.00037	0.0010		mg/L	1	3/31/2022 1:55:11 PM	66472
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/28/2022 3:46:17 PM	66425

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-60
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 10:30:00 AM
Lab ID: 2203C69-008E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.035	0.0011	0.0020		mg/L	1	3/29/2022 2:28:01 PM	B86825
Beryllium	ND	0.00088	0.0020		mg/L	1	3/29/2022 2:28:01 PM	B86825
Cadmium	ND	0.00098	0.0020		mg/L	1	3/29/2022 2:28:01 PM	B86825
Chromium	0.0044	0.0020	0.0060	J	mg/L	1	3/29/2022 2:28:01 PM	B86825
Cobalt	0.0027	0.0024	0.0060	J	mg/L	1	3/29/2022 2:28:01 PM	B86825
Nickel	0.012	0.0033	0.010		mg/L	1	3/29/2022 2:28:01 PM	B86825
Silver	ND	0.0013	0.0050		mg/L	1	3/29/2022 2:28:01 PM	B86825
Vanadium	0.011	0.0017	0.050	J	mg/L	1	3/29/2022 2:28:01 PM	B86825
Zinc	0.011	0.0032	0.010		mg/L	1	3/29/2022 2:28:01 PM	B86825
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/24/2022 3:07:51 PM	B86714
Arsenic	0.0013	0.00061	0.0050	J	mg/L	5	3/24/2022 4:07:08 PM	B86714
Lead	ND	0.000057	0.00050		mg/L	1	3/24/2022 3:07:51 PM	B86714
Selenium	0.021	0.0017	0.0050		mg/L	5	3/24/2022 4:07:08 PM	B86714
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/29/2022 2:26:34 PM	66456

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-16
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 11:00:00 AM
Lab ID: 2203C69-009A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	160	2.3	10		µg/L	10	3/25/2022 11:59:44 AM	R86760
Toluene	1.3	0.20	1.0		µg/L	1	3/25/2022 3:12:15 AM	R86734
Ethylbenzene	31	0.21	1.0		µg/L	1	3/25/2022 3:12:15 AM	R86734
Methyl tert-butyl ether (MTBE)	3.3	0.39	1.0		µg/L	1	3/25/2022 3:12:15 AM	R86734
1,2,4-Trimethylbenzene	22	0.12	1.0		µg/L	1	3/25/2022 3:12:15 AM	R86734
1,3,5-Trimethylbenzene	0.61	0.18	1.0	J	µg/L	1	3/25/2022 3:12:15 AM	R86734
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	3/25/2022 3:12:15 AM	R86734
Acetone	ND	2.5	10		µg/L	1	3/25/2022 3:12:15 AM	R86734
Bromomethane	ND	0.85	3.0		µg/L	1	3/25/2022 3:12:15 AM	R86734
2-Butanone	ND	2.0	10		µg/L	1	3/25/2022 3:12:15 AM	R86734
Carbon disulfide	ND	0.59	10		µg/L	1	3/25/2022 3:12:15 AM	R86734
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/25/2022 3:12:15 AM	R86734
Chloroform	ND	0.13	1.0		µg/L	1	3/25/2022 3:12:15 AM	R86734
Chloromethane	0.78	0.41	3.0	J	µg/L	1	3/25/2022 3:12:15 AM	R86734
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/25/2022 3:12:15 AM	R86734
1,1-Dichloroethane	4.4	0.27	1.0		µg/L	1	3/25/2022 3:12:15 AM	R86734
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/25/2022 3:12:15 AM	R86734
Isopropylbenzene	1.6	0.18	1.0		µg/L	1	3/25/2022 3:12:15 AM	R86734
4-Isopropyltoluene	0.21	0.20	1.0	J	µg/L	1	3/25/2022 3:12:15 AM	R86734
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/25/2022 3:12:15 AM	R86734
n-Butylbenzene	0.29	0.25	3.0	J	µg/L	1	3/25/2022 3:12:15 AM	R86734
n-Propylbenzene	3.0	0.18	1.0		µg/L	1	3/25/2022 3:12:15 AM	R86734
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/25/2022 3:12:15 AM	R86734
Styrene	ND	0.14	1.0		µg/L	1	3/25/2022 3:12:15 AM	R86734
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/25/2022 3:12:15 AM	R86734
1,1,1-Trichloroethane	0.61	0.30	1.0	J	µg/L	1	3/25/2022 3:12:15 AM	R86734
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/25/2022 3:12:15 AM	R86734
Vinyl chloride	0.65	0.32	1.0	J	µg/L	1	3/25/2022 3:12:15 AM	R86734
Xylenes, Total	6.7	0.37	1.5		µg/L	1	3/25/2022 3:12:15 AM	R86734
Surr: 1,2-Dichloroethane-d4	86.3	0	70-130		%Rec	1	3/25/2022 3:12:15 AM	R86734
Surr: 4-Bromofluorobenzene	90.1	0	70-130		%Rec	1	3/25/2022 3:12:15 AM	R86734
Surr: Dibromofluoromethane	87.2	0	70-130		%Rec	1	3/25/2022 3:12:15 AM	R86734
Surr: Toluene-d8	100	0	70-130		%Rec	1	3/25/2022 3:12:15 AM	R86734
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.80	0.028	0.050		mg/L	1	3/25/2022 3:12:15 AM	G86734
Surr: 4-Bromofluorobenzene	93.5	0	70-130		%Rec	1	3/25/2022 3:12:15 AM	G86734

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-16
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 11:00:00 AM
Lab ID: 2203C69-009B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0035	0.0095		µg/L	1	3/29/2022 6:12:09 PM	66393

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-16
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 11:00:00 AM
Lab ID: 2203C69-009C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	4.8	91		µg/L	1	4/7/2022 12:18:52 PM	66392
Bis(2-ethylhexyl)phthalate	ND	20	45		µg/L	1	4/7/2022 12:18:52 PM	66392
Di-n-butyl phthalate	ND	29	45		µg/L	1	4/7/2022 12:18:52 PM	66392
Di-n-octyl phthalate	ND	14	91		µg/L	1	4/7/2022 12:18:52 PM	66392
1,4-Dichlorobenzene	ND	3.2	23		µg/L	1	4/7/2022 12:18:52 PM	66392
Diethyl phthalate	ND	18	45		µg/L	1	4/7/2022 12:18:52 PM	66392
Dimethyl phthalate	ND	9.1	45		µg/L	1	4/7/2022 12:18:52 PM	66392
2,4-Dimethylphenol	ND	4.4	23		µg/L	1	4/7/2022 12:18:52 PM	66392
2,4-Dinitrophenol	ND	2.3	23		µg/L	1	4/7/2022 12:18:52 PM	66392
2-Methylphenol	ND	2.3	23		µg/L	1	4/7/2022 12:18:52 PM	66392
3+4-Methylphenol	ND	2.1	23		µg/L	1	4/7/2022 12:18:52 PM	66392
Phenol	ND	1.5	23		µg/L	1	4/7/2022 12:18:52 PM	66392
Pyridine	ND	45	45		µg/L	1	4/7/2022 12:18:52 PM	66392
2,4,6-Trichlorophenol	ND	2.0	23		µg/L	1	4/7/2022 12:18:52 PM	66392
Surr: 2-Fluorophenol	40.3	0	29.4-87.7		%Rec	1	4/7/2022 12:18:52 PM	66392
Surr: Phenol-d5	30.8	0	28.5-64.7		%Rec	1	4/7/2022 12:18:52 PM	66392
Surr: 2,4,6-Tribromophenol	63.3	0	18.6-129		%Rec	1	4/7/2022 12:18:52 PM	66392
Surr: Nitrobenzene-d5	48.6	0	36.9-103		%Rec	1	4/7/2022 12:18:52 PM	66392
Surr: 2-Fluorobiphenyl	48.0	0	38.1-99.9		%Rec	1	4/7/2022 12:18:52 PM	66392
Surr: 4-Terphenyl-d14	86.4	0	48-155		%Rec	1	4/7/2022 12:18:52 PM	66392
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.048	1.0		µg/L	1	4/6/2022 11:52:00 AM	R87058
Naphthalene	0.080	0.034	0.10	J	µg/L	1	4/6/2022 11:52:00 AM	R87058
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	4/6/2022 11:52:00 AM	R87058
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	4/6/2022 11:52:00 AM	R87058
Acenaphthene	ND	0.031	0.10		µg/L	1	4/6/2022 11:52:00 AM	R87058
Fluorene	ND	0.031	0.10		µg/L	1	4/6/2022 11:52:00 AM	R87058
Phenanthrene	ND	0.057	0.10		µg/L	1	4/6/2022 11:52:00 AM	R87058
Anthracene	ND	0.034	0.10		µg/L	1	4/6/2022 11:52:00 AM	R87058
Fluoranthene	ND	0.10	0.20		µg/L	1	4/6/2022 11:52:00 AM	R87058
Pyrene	ND	0.16	0.20		µg/L	1	4/6/2022 11:52:00 AM	R87058
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	4/6/2022 11:52:00 AM	R87058
Chrysene	ND	0.024	0.10		µg/L	1	4/6/2022 11:52:00 AM	R87058
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	4/6/2022 11:52:00 AM	R87058
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	4/6/2022 11:52:00 AM	R87058
Surr: Nitrobenzene-d5	51.1	0	31.6-100		%Rec	1	4/6/2022 11:52:00 AM	R87058
Surr: 2-Fluorobiphenyl	51.1	0	26.7-90.1		%Rec	1	4/6/2022 11:52:00 AM	R87058
Surr: 4-Terphenyl-d14	93.3	0	72.3-147		%Rec	1	4/6/2022 11:52:00 AM	R87058

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-23-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022
Lab ID: 2203C69-010A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	12	0.23	1.0		µg/L	1	3/25/2022 3:40:42 AM	R86734
Toluene	0.36	0.20	1.0	J	µg/L	1	3/25/2022 3:40:42 AM	R86734
Ethylbenzene	13	0.21	1.0		µg/L	1	3/25/2022 3:40:42 AM	R86734
Methyl tert-butyl ether (MTBE)	1200	3.9	10		µg/L	10	3/25/2022 12:28:47 PM	R86760
1,2,4-Trimethylbenzene	4.5	0.12	1.0		µg/L	1	3/25/2022 3:40:42 AM	R86734
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/25/2022 3:40:42 AM	R86734
1,2-Dichloroethane (EDC)	0.68	0.25	1.0	J	µg/L	1	3/25/2022 3:40:42 AM	R86734
Acetone	ND	2.5	10		µg/L	1	3/25/2022 3:40:42 AM	R86734
Bromomethane	ND	0.85	3.0		µg/L	1	3/25/2022 3:40:42 AM	R86734
2-Butanone	ND	2.0	10		µg/L	1	3/25/2022 3:40:42 AM	R86734
Carbon disulfide	ND	0.59	10		µg/L	1	3/25/2022 3:40:42 AM	R86734
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/25/2022 3:40:42 AM	R86734
Chloroform	ND	0.13	1.0		µg/L	1	3/25/2022 3:40:42 AM	R86734
Chloromethane	1.8	0.41	3.0	J	µg/L	1	3/25/2022 3:40:42 AM	R86734
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/25/2022 3:40:42 AM	R86734
1,1-Dichloroethane	0.63	0.27	1.0	J	µg/L	1	3/25/2022 3:40:42 AM	R86734
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/25/2022 3:40:42 AM	R86734
Isopropylbenzene	0.46	0.18	1.0	J	µg/L	1	3/25/2022 3:40:42 AM	R86734
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/25/2022 3:40:42 AM	R86734
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/25/2022 3:40:42 AM	R86734
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/25/2022 3:40:42 AM	R86734
n-Propylbenzene	1.2	0.18	1.0		µg/L	1	3/25/2022 3:40:42 AM	R86734
sec-Butylbenzene	0.58	0.14	1.0	J	µg/L	1	3/25/2022 3:40:42 AM	R86734
Styrene	ND	0.14	1.0		µg/L	1	3/25/2022 3:40:42 AM	R86734
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/25/2022 3:40:42 AM	R86734
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/25/2022 3:40:42 AM	R86734
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/25/2022 3:40:42 AM	R86734
Vinyl chloride	0.46	0.32	1.0	J	µg/L	1	3/25/2022 3:40:42 AM	R86734
Xylenes, Total	2.4	0.37	1.5		µg/L	1	3/25/2022 3:40:42 AM	R86734
Surr: 1,2-Dichloroethane-d4	87.2	0	70-130		%Rec	1	3/25/2022 3:40:42 AM	R86734
Surr: 4-Bromofluorobenzene	107	0	70-130		%Rec	1	3/25/2022 3:40:42 AM	R86734
Surr: Dibromofluoromethane	87.7	0	70-130		%Rec	1	3/25/2022 3:40:42 AM	R86734
Surr: Toluene-d8	102	0	70-130		%Rec	1	3/25/2022 3:40:42 AM	R86734
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	1.9	0.028	0.050		mg/L	1	3/25/2022 3:40:42 AM	G86734
Surr: 4-Bromofluorobenzene	109	0	70-130		%Rec	1	3/25/2022 3:40:42 AM	G86734

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-23-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022
Lab ID: 2203C69-010B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0035	0.0095		µg/L	1	3/29/2022 6:27:22 PM	66393

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-23-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022
Lab ID: 2203C69-010C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	2.3	0.016	0.064		mg/L	1	3/29/2022 12:05:25 AM	66409
Motor Oil Range Organics (MRO)	0.16	0.052	0.080	B	mg/L	1	3/29/2022 12:05:25 AM	66409
Surr: DNOP	96.6	0	42.2-138		%Rec	1	3/29/2022 12:05:25 AM	66409
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	1.1	20		µg/L	1	4/7/2022 1:00:17 PM	66392
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	4/7/2022 1:00:17 PM	66392
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	4/7/2022 1:00:17 PM	66392
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	4/7/2022 1:00:17 PM	66392
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	4/7/2022 1:00:17 PM	66392
Diethyl phthalate	ND	3.9	10		µg/L	1	4/7/2022 1:00:17 PM	66392
Dimethyl phthalate	ND	2.0	10		µg/L	1	4/7/2022 1:00:17 PM	66392
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	4/7/2022 1:00:17 PM	66392
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	4/7/2022 1:00:17 PM	66392
2-Methylphenol	ND	0.51	5.0		µg/L	1	4/7/2022 1:00:17 PM	66392
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	4/7/2022 1:00:17 PM	66392
Phenol	ND	0.33	5.0		µg/L	1	4/7/2022 1:00:17 PM	66392
Pyridine	ND	10	10		µg/L	1	4/7/2022 1:00:17 PM	66392
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	4/7/2022 1:00:17 PM	66392
Surr: 2-Fluorophenol	42.4	0	29.4-87.7		%Rec	1	4/7/2022 1:00:17 PM	66392
Surr: Phenol-d5	32.1	0	28.5-64.7		%Rec	1	4/7/2022 1:00:17 PM	66392
Surr: 2,4,6-Tribromophenol	65.6	0	18.6-129		%Rec	1	4/7/2022 1:00:17 PM	66392
Surr: Nitrobenzene-d5	53.7	0	36.9-103		%Rec	1	4/7/2022 1:00:17 PM	66392
Surr: 2-Fluorobiphenyl	52.0	0	38.1-99.9		%Rec	1	4/7/2022 1:00:17 PM	66392
Surr: 4-Terphenyl-d14	83.7	0	48-155		%Rec	1	4/7/2022 1:00:17 PM	66392
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.048	1.0		µg/L	1	4/6/2022 12:35:00 PM	R87058
Naphthalene	ND	0.034	0.10		µg/L	1	4/6/2022 12:35:00 PM	R87058
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	4/6/2022 12:35:00 PM	R87058
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	4/6/2022 12:35:00 PM	R87058
Acenaphthene	ND	0.031	0.10		µg/L	1	4/6/2022 12:35:00 PM	R87058
Fluorene	ND	0.031	0.10		µg/L	1	4/6/2022 12:35:00 PM	R87058
Phenanthrene	ND	0.057	0.10		µg/L	1	4/6/2022 12:35:00 PM	R87058
Anthracene	ND	0.034	0.10		µg/L	1	4/6/2022 12:35:00 PM	R87058
Fluoranthene	ND	0.10	0.20		µg/L	1	4/6/2022 12:35:00 PM	R87058
Pyrene	ND	0.16	0.20		µg/L	1	4/6/2022 12:35:00 PM	R87058
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	4/6/2022 12:35:00 PM	R87058
Chrysene	ND	0.024	0.10		µg/L	1	4/6/2022 12:35:00 PM	R87058
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	4/6/2022 12:35:00 PM	R87058
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	4/6/2022 12:35:00 PM	R87058

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Estimated value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-23-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022
Lab ID: 2203C69-010C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	57.3	0	31.6-100		%Rec	1	4/6/2022 12:35:00 PM	R87058
Surr: 2-Fluorobiphenyl	56.7	0	26.7-90.1		%Rec	1	4/6/2022 12:35:00 PM	R87058
Surr: 4-Terphenyl-d14	107	0	72.3-147	E	%Rec	1	4/6/2022 12:35:00 PM	R87058

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-23-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022
Lab ID: 2203C69-010D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.41	0.0016	0.0030		mg/L	1	4/6/2022 4:57:56 PM	66644
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 4:57:56 PM	66644
Cadmium	ND	0.0015	0.0020		mg/L	1	4/6/2022 4:57:56 PM	66644
Chromium	0.0053	0.0021	0.0060	J	mg/L	1	4/6/2022 4:57:56 PM	66644
Cobalt	0.081	0.0024	0.0060		mg/L	1	4/6/2022 4:57:56 PM	66644
Nickel	0.26	0.0033	0.010	*	mg/L	1	4/6/2022 4:57:56 PM	66644
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 4:57:56 PM	66644
Vanadium	0.015	0.0024	0.050	J	mg/L	1	4/6/2022 4:57:56 PM	66644
Zinc	0.026	0.0064	0.010		mg/L	1	4/6/2022 4:57:56 PM	66644
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/31/2022 1:57:38 PM	66472
Arsenic	0.0091	0.00013	0.0010		mg/L	1	3/31/2022 1:57:38 PM	66472
Lead	0.020	0.000061	0.00050	*	mg/L	1	3/31/2022 1:57:38 PM	66472
Selenium	0.00086	0.00037	0.0010	J	mg/L	1	3/31/2022 1:57:38 PM	66472
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/28/2022 3:48:25 PM	66425

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-23-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022
Lab ID: 2203C69-010E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.20	0.0011	0.0020		mg/L	1	3/29/2022 2:34:33 PM	B86825
Beryllium	ND	0.00088	0.0020		mg/L	1	3/29/2022 2:34:33 PM	B86825
Cadmium	ND	0.00098	0.0020		mg/L	1	3/29/2022 2:34:33 PM	B86825
Chromium	ND	0.0020	0.0060		mg/L	1	3/29/2022 2:34:33 PM	B86825
Cobalt	0.085	0.0024	0.0060		mg/L	1	3/29/2022 2:34:33 PM	B86825
Nickel	0.27	0.0033	0.010	*	mg/L	1	3/29/2022 2:34:33 PM	B86825
Silver	ND	0.0013	0.0050		mg/L	1	3/29/2022 2:34:33 PM	B86825
Vanadium	ND	0.0017	0.050		mg/L	1	3/29/2022 2:34:33 PM	B86825
Zinc	0.018	0.0032	0.010		mg/L	1	3/29/2022 2:34:33 PM	B86825
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	0.00051	0.00044	0.0010	J	mg/L	1	3/24/2022 3:10:32 PM	B86714
Arsenic	0.0091	0.00012	0.0010		mg/L	1	3/24/2022 3:10:32 PM	B86714
Lead	0.0076	0.000057	0.00050		mg/L	1	3/24/2022 3:10:32 PM	B86714
Selenium	ND	0.00034	0.0010		mg/L	1	3/24/2022 3:10:32 PM	B86714
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/29/2022 2:28:43 PM	66456

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB-3-23-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/23/2022 11:00:00 AM
Lab ID: 2203C69-011A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	3/25/2022 12:57:16 PM	R86760
Toluene	ND	0.20	1.0		µg/L	1	3/25/2022 12:57:16 PM	R86760
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/25/2022 12:57:16 PM	R86760
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/25/2022 12:57:16 PM	R86760
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/25/2022 12:57:16 PM	R86760
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/25/2022 12:57:16 PM	R86760
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	3/25/2022 12:57:16 PM	R86760
Acetone	ND	2.5	10		µg/L	1	3/25/2022 12:57:16 PM	R86760
Bromomethane	ND	0.85	3.0		µg/L	1	3/25/2022 12:57:16 PM	R86760
2-Butanone	5.2	2.0	10	J	µg/L	1	3/25/2022 12:57:16 PM	R86760
Carbon disulfide	ND	0.59	10		µg/L	1	3/25/2022 12:57:16 PM	R86760
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/25/2022 12:57:16 PM	R86760
Chloroform	ND	0.13	1.0		µg/L	1	3/25/2022 12:57:16 PM	R86760
Chloromethane	0.80	0.41	3.0	J	µg/L	1	3/25/2022 12:57:16 PM	R86760
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/25/2022 12:57:16 PM	R86760
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/25/2022 12:57:16 PM	R86760
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/25/2022 12:57:16 PM	R86760
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/25/2022 12:57:16 PM	R86760
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/25/2022 12:57:16 PM	R86760
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/25/2022 12:57:16 PM	R86760
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/25/2022 12:57:16 PM	R86760
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/25/2022 12:57:16 PM	R86760
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/25/2022 12:57:16 PM	R86760
Styrene	ND	0.14	1.0		µg/L	1	3/25/2022 12:57:16 PM	R86760
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/25/2022 12:57:16 PM	R86760
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/25/2022 12:57:16 PM	R86760
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/25/2022 12:57:16 PM	R86760
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/25/2022 12:57:16 PM	R86760
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/25/2022 12:57:16 PM	R86760
Surr: 1,2-Dichloroethane-d4	90.7	0	70-130		%Rec	1	3/25/2022 12:57:16 PM	R86760
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	3/25/2022 12:57:16 PM	R86760
Surr: Dibromofluoromethane	97.1	0	70-130		%Rec	1	3/25/2022 12:57:16 PM	R86760
Surr: Toluene-d8	106	0	70-130		%Rec	1	3/25/2022 12:57:16 PM	R86760

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 1st Qtr
Collection Date:
Lab ID: 2203C69-012A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	3/25/2022 1:25:53 PM	R86760
Toluene	ND	0.20	1.0		µg/L	1	3/25/2022 1:25:53 PM	R86760
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/25/2022 1:25:53 PM	R86760
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/25/2022 1:25:53 PM	R86760
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/25/2022 1:25:53 PM	R86760
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/25/2022 1:25:53 PM	R86760
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	3/25/2022 1:25:53 PM	R86760
Acetone	ND	2.5	10		µg/L	1	3/25/2022 1:25:53 PM	R86760
Bromomethane	ND	0.85	3.0		µg/L	1	3/25/2022 1:25:53 PM	R86760
2-Butanone	ND	2.0	10		µg/L	1	3/25/2022 1:25:53 PM	R86760
Carbon disulfide	ND	0.59	10		µg/L	1	3/25/2022 1:25:53 PM	R86760
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/25/2022 1:25:53 PM	R86760
Chloroform	ND	0.13	1.0		µg/L	1	3/25/2022 1:25:53 PM	R86760
Chloromethane	0.69	0.41	3.0	J	µg/L	1	3/25/2022 1:25:53 PM	R86760
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/25/2022 1:25:53 PM	R86760
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/25/2022 1:25:53 PM	R86760
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/25/2022 1:25:53 PM	R86760
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/25/2022 1:25:53 PM	R86760
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/25/2022 1:25:53 PM	R86760
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/25/2022 1:25:53 PM	R86760
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/25/2022 1:25:53 PM	R86760
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/25/2022 1:25:53 PM	R86760
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/25/2022 1:25:53 PM	R86760
Styrene	ND	0.14	1.0		µg/L	1	3/25/2022 1:25:53 PM	R86760
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/25/2022 1:25:53 PM	R86760
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/25/2022 1:25:53 PM	R86760
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/25/2022 1:25:53 PM	R86760
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/25/2022 1:25:53 PM	R86760
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/25/2022 1:25:53 PM	R86760
Surr: 1,2-Dichloroethane-d4	83.4	0	70-130		%Rec	1	3/25/2022 1:25:53 PM	R86760
Surr: 4-Bromofluorobenzene	97.2	0	70-130		%Rec	1	3/25/2022 1:25:53 PM	R86760
Surr: Dibromofluoromethane	92.2	0	70-130		%Rec	1	3/25/2022 1:25:53 PM	R86760
Surr: Toluene-d8	102	0	70-130		%Rec	1	3/25/2022 1:25:53 PM	R86760

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203C69**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 1st Qtr
Collection Date:
Lab ID: 2203C69-012B
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	3/29/2022 6:42:39 PM	66394

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

ANALYTICAL REPORT

April 04, 2022

Hall Environmental Analysis Laboratory

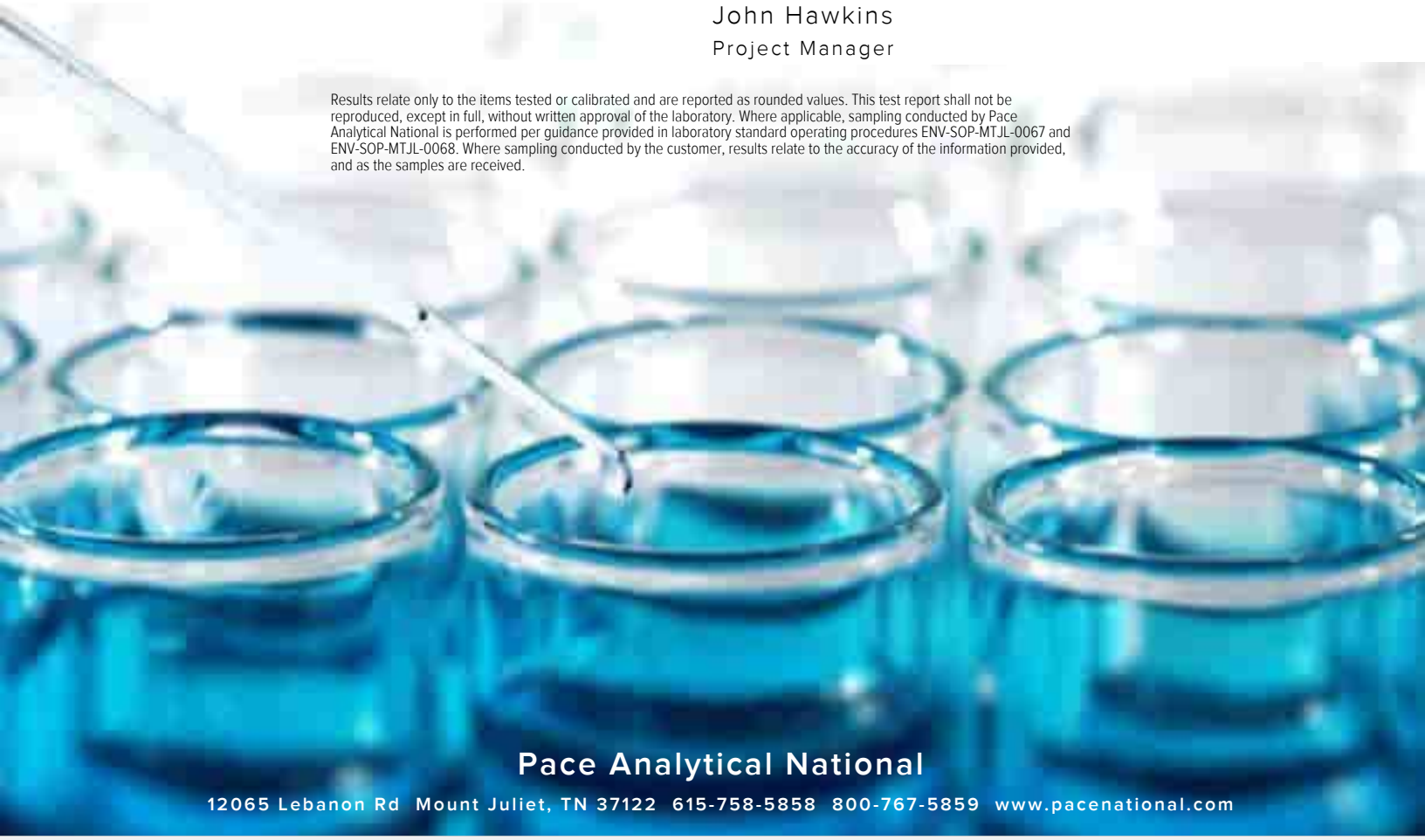
Sample Delivery Group:	L1475080
Samples Received:	03/25/2022
Project Number:	
Description:	

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By:

John Hawkins
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 5

Sr: Sample Results 6

2203C69-001F EB-3-23-22 L1475080-01 6

2203C69-002F OW-54 L1475080-02 7

2203C69-003F OW-66 L1475080-03 8

2203C69-004F OW-55 L1475080-04 9

2203C69-005F OW-13 L1475080-05 10

2203C69-006F OW-56 L1475080-06 11

2203C69-007F OW-59 L1475080-07 12

2203C69-008F OW-60 L1475080-08 13

2203C69-010F DUP-3-23-22 L1475080-09 14

Qc: Quality Control Summary 15

Wet Chemistry by Method 4500CN E-2016 15

Gl: Glossary of Terms 16

Al: Accreditations & Locations 17

Sc: Sample Chain of Custody 18

SAMPLE SUMMARY

2203C69-001F EB-3-23-22 L1475080-01 WW

Collected by | Collected date/time 03/23/22 08:20 | Received date/time 03/25/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1839312	1	03/28/22 15:55	04/01/22 13:21	LDT	Mt. Juliet, TN

2203C69-002F OW-54 L1475080-02 WW

Collected by | Collected date/time 03/23/22 08:20 | Received date/time 03/25/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1839312	1	03/28/22 15:55	04/01/22 13:26	LDT	Mt. Juliet, TN

2203C69-003F OW-66 L1475080-03 WW

Collected by | Collected date/time 03/23/22 08:50 | Received date/time 03/25/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1839312	1	03/28/22 15:55	04/01/22 13:27	LDT	Mt. Juliet, TN

2203C69-004F OW-55 L1475080-04 WW

Collected by | Collected date/time 03/23/22 09:10 | Received date/time 03/25/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1839312	1	03/28/22 15:55	04/01/22 13:28	LDT	Mt. Juliet, TN

2203C69-005F OW-13 L1475080-05 WW

Collected by | Collected date/time 03/23/22 09:30 | Received date/time 03/25/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1839312	1	03/28/22 15:55	04/01/22 13:29	LDT	Mt. Juliet, TN

2203C69-006F OW-56 L1475080-06 WW

Collected by | Collected date/time 03/23/22 09:50 | Received date/time 03/25/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1839312	1	03/28/22 15:55	04/01/22 13:32	LDT	Mt. Juliet, TN

2203C69-007F OW-59 L1475080-07 WW

Collected by | Collected date/time 03/23/22 10:10 | Received date/time 03/25/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1839312	1	03/28/22 15:55	04/01/22 13:35	LDT	Mt. Juliet, TN

2203C69-008F OW-60 L1475080-08 WW

Collected by | Collected date/time 03/23/22 10:30 | Received date/time 03/25/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1839312	1	03/28/22 15:55	04/01/22 13:36	LDT	Mt. Juliet, TN

SAMPLE SUMMARY

2203C69-010F DUP-3-23-22 L1475080-09 WW

			Collected by	Collected date/time	Received date/time
				03/23/22 00:00	03/25/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1839312	1	03/28/22 15:55	04/01/22 13:39	LDT	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND	J3 J6	0.00500	1	04/01/2022 13:21	WG1839312

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.00527		0.00500	1	04/01/2022 13:26	WG1839312

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.00756		0.00500	1	04/01/2022 13:27	WG1839312

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	04/01/2022 13:28	WG1839312

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	04/01/2022 13:29	WG1839312

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND	J3 J6	0.00500	1	04/01/2022 13:32	WG1839312

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.0191		0.00500	1	04/01/2022 13:35	WG1839312

Received by OCD: 4/21/2023 9:21:57 AM

2203C09-008I-GW-03
Collected date/time: 03/23/22 10:30
L1475080

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.00928		0.00500	1	04/01/2022 13:36	WG1839312

Released to Imaging: 4/21/2023 9:40:26 AM

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	04/01/2022 13:39	WG1839312

Method Blank (MB)

(MB) R3776612-1 04/01/22 13:14

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1474926-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1474926-08 04/01/22 13:18 • (DUP) R3776612-3 04/01/22 13:19

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

L1475080-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1475080-05 04/01/22 13:29 • (DUP) R3776612-6 04/01/22 13:30

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3776612-2 04/01/22 13:15

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.101	101	87.1-120	

L1475080-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1475080-01 04/01/22 13:21 • (MS) R3776612-4 04/01/22 13:22 • (MSD) R3776612-5 04/01/22 13:23

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0973	0.0284	97.3	28.4	1	90.0-110		J3 J6	110	20

L1475080-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1475080-06 04/01/22 13:32 • (MS) R3776612-7 04/01/22 13:33 • (MSD) R3776612-8 04/01/22 13:34

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.104	0.0773	99.8	73.1	1	90.0-110		J3 J6	29.5	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Received by OCD: 4/21/2023 9:21:57 AM

ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

1084

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: clients.hallenvironmental.com

SUB CONTRATOR: Pace TN	COMPANY: PACE TN	PHONE: (800) 767-5859	FAX: (615) 758-5859
ADDRESS: 12065 Lebanon Rd		ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: Mt. Juliet, TN 37122			

L1475080

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS	
1	2203C69-001F	EB-3-23-22	500AMBHDP E-NAOH	Groundwater	3/23/2022 8:20:00 AM	1	Total Cyanide	1
2	2203C69-002F	OW-54	500AMBHDP E-NAOH	Groundwater	3/23/2022 8:20:00 AM	1	Total Cyanide	2
3	2203C69-003F	OW-66	500AMBHDP E-NAOH	Groundwater	3/23/2022 8:50:00 AM	1	Total Cyanide	3
4	2203C69-004F	OW-55	500AMBHDP E-NAOH	Groundwater	3/23/2022 9:10:00 AM	1	Total Cyanide	4
5	2203C69-005F	OW-13	500AMBHDP E-NAOH	Groundwater	3/23/2022 9:30:00 AM	1	Total Cyanide	5
6	2203C69-006F	OW-56	500AMBHDP E-NAOH	Groundwater	3/23/2022 9:50:00 AM	1	Total Cyanide	6
7	2203C69-007F	OW-59	500AMBHDP E-NAOH	Groundwater	3/23/2022 10:10:00 AM	1	Total Cyanide	7
8	2203C69-008F	OW-60	500AMBHDP E-NAOH	Groundwater	3/23/2022 10:30:00 AM	1	Total Cyanide	8
9	2203C69-010F	DUP-3-23-22	500AMBHDP E-NAOH	Groundwater	3/23/2022	1	Total Cyanide	9

Sample Receipt Checklist

COC Seal Present/Intact:	Y N	If Applicable	
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	Y N	Pres.Correct/Check:	Y N
Correct bottles used:	Y N		
Sufficient volume sent:	Y N		
RAD Screen <0.5 mR/hr:	Y N		

Fedex: 5528 5947 9180
Temp: 2.7+0=2.7

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By: CMC	Date: 3/24/2022	Time: 11:44 AM	Received By:	Date: 3/24/22	Time: 0840
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard X RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY
Temp of samples ____ °C Attempt to Cool ? ____
Comments: ____

Released to Imaging: 4/21/2023 9:40:26 AM

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203C69**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **B86825**	RunNo: **86825**
Prep Date:	Analysis Date: **3/29/2022**	SeqNo: **3066297** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **B86825**	RunNo: **86825**
Prep Date:	Analysis Date: **3/29/2022**	SeqNo: **3066299** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0023	0.0030	0.002000	0	116	50	150			J
Beryllium	0.0018	0.0020	0.002000	0	92.4	50	150			J
Cadmium	0.0025	0.0020	0.002000	0	126	50	150			
Chromium	0.0060	0.0060	0.006000	0	99.3	50	150			J
Cobalt	0.0058	0.0060	0.006000	0	97.1	50	150			J
Nickel	0.0057	0.010	0.005000	0	114	50	150			J
Silver	0.0055	0.0050	0.005000	0	110	50	150			
Vanadium	0.011	0.050	0.01000	0	107	50	150			J
Zinc	0.012	0.010	0.01000	0	120	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **B86825**	RunNo: **86825**
Prep Date:	Analysis Date: **3/29/2022**	SeqNo: **3066301** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.53	0.0030	0.5000	0	107	85	115			
Beryllium	0.52	0.0020	0.5000	0	104	85	115			
Cadmium	0.52	0.0020	0.5000	0	103	85	115			
Chromium	0.51	0.0060	0.5000	0	103	85	115			
Cobalt	0.50	0.0060	0.5000	0	100	85	115			
Nickel	0.49	0.010	0.5000	0	98.7	85	115			
Silver	0.11	0.0050	0.1000	0	107	85	115			
Vanadium	0.53	0.050	0.5000	0	107	85	115			
Zinc	0.50	0.010	0.5000	0	100	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203C69**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB-66644** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **66644** RunNo: **87030**
Prep Date: **4/5/2022** Analysis Date: **4/6/2022** SeqNo: **3075590** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS-66644** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **66644** RunNo: **87030**
Prep Date: **4/5/2022** Analysis Date: **4/6/2022** SeqNo: **3075594** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0019	0.0030	0.002000	0	95.8	50	150			J
Beryllium	0.0020	0.0020	0.002000	0	101	50	150			
Cadmium	0.0019	0.0020	0.002000	0	94.6	50	150			J
Chromium	0.0059	0.0060	0.006000	0	99.1	50	150			J
Cobalt	0.0066	0.0060	0.006000	0	110	50	150			
Nickel	0.0034	0.010	0.005000	0	67.0	50	150			J
Silver	0.0043	0.0050	0.005000	0	86.3	50	150			J
Vanadium	0.010	0.050	0.01000	0	104	50	150			J
Zinc	0.011	0.010	0.01000	0	105	50	150			

Sample ID: **LCS-66644** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **66644** RunNo: **87030**
Prep Date: **4/5/2022** Analysis Date: **4/6/2022** SeqNo: **3075595** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0030	0.5000	0	96.8	85	115			
Beryllium	0.53	0.0020	0.5000	0	105	85	115			
Cadmium	0.48	0.0020	0.5000	0	95.3	85	115			
Chromium	0.49	0.0060	0.5000	0	98.1	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.5	85	115			
Nickel	0.47	0.010	0.5000	0	94.5	85	115			
Silver	0.097	0.0050	0.1000	0	96.7	85	115			
Vanadium	0.50	0.050	0.5000	0	99.3	85	115			
Zinc	0.49	0.010	0.5000	0	97.5	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203C69**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **2203C69-002DMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **OW-54**	Batch ID: **66644**	RunNo: **87030**
Prep Date: **4/5/2022**	Analysis Date: **4/6/2022**	SeqNo: **3076461** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.89	0.0030	0.5000	0.3878	99.5	70	130			
Beryllium	0.54	0.0020	0.5000	0	107	70	130			
Cadmium	0.48	0.0020	0.5000	0	95.4	70	130			
Chromium	0.49	0.0060	0.5000	0.006400	96.9	70	130			
Cobalt	0.54	0.0060	0.5000	0.07790	93.1	70	130			
Nickel	0.71	0.010	0.5000	0.2417	93.4	70	130			
Silver	0.10	0.0050	0.1000	0	101	70	130			
Vanadium	0.53	0.050	0.5000	0.01525	104	70	130			
Zinc	0.51	0.010	0.5000	0.03055	96.4	70	130			

Sample ID: **2203C69-002DMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Metals**
Client ID: **OW-54**	Batch ID: **66644**	RunNo: **87030**
Prep Date: **4/5/2022**	Analysis Date: **4/6/2022**	SeqNo: **3076462** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.90	0.0030	0.5000	0.3878	103	70	130	1.98	20	
Beryllium	0.53	0.0020	0.5000	0	107	70	130	0.543	20	
Cadmium	0.48	0.0020	0.5000	0	96.6	70	130	1.26	20	
Chromium	0.49	0.0060	0.5000	0.006400	96.5	70	130	0.413	20	
Cobalt	0.54	0.0060	0.5000	0.07790	93.3	70	130	0.237	20	
Nickel	0.71	0.010	0.5000	0.2417	94.0	70	130	0.397	20	
Silver	0.10	0.0050	0.1000	0	104	70	130	3.08	20	
Vanadium	0.54	0.050	0.5000	0.01525	104	70	130	0.651	20	
Zinc	0.51	0.010	0.5000	0.03055	95.9	70	130	0.514	20	

Sample ID: **2203C69-003DMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **OW-66**	Batch ID: **66644**	RunNo: **87030**
Prep Date: **4/5/2022**	Analysis Date: **4/6/2022**	SeqNo: **3076467** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.52	0.0020	0.5000	0	104	70	130			
Cadmium	0.45	0.0020	0.5000	0	91.0	70	130			
Chromium	0.48	0.0060	0.5000	0.01693	92.7	70	130			
Cobalt	0.45	0.0060	0.5000	0.009463	88.9	70	130			
Nickel	0.76	0.010	0.5000	0.3258	86.5	70	130			
Silver	0.10	0.0050	0.1000	0	101	70	130			
Vanadium	0.53	0.050	0.5000	0.03359	99.8	70	130			
Zinc	0.48	0.010	0.5000	0.02264	91.8	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203C69**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **2203C69-003DMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Metals**
Client ID: **OW-66** Batch ID: **66644** RunNo: **87030**
Prep Date: **4/5/2022** Analysis Date: **4/6/2022** SeqNo: **3076468** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.52	0.0020	0.5000	0	104	70	130	0.319	20	
Cadmium	0.46	0.0020	0.5000	0	91.1	70	130	0.196	20	
Chromium	0.48	0.0060	0.5000	0.01693	93.1	70	130	0.377	20	
Cobalt	0.45	0.0060	0.5000	0.009463	88.6	70	130	0.366	20	
Nickel	0.76	0.010	0.5000	0.3258	86.2	70	130	0.210	20	
Silver	0.10	0.0050	0.1000	0	99.8	70	130	0.912	20	
Vanadium	0.54	0.050	0.5000	0.03359	100	70	130	0.596	20	
Zinc	0.48	0.010	0.5000	0.02264	91.7	70	130	0.0940	20	

Sample ID: **2203C69-003DMS** SampType: **MS** TestCode: **EPA Method 200.7: Metals**
Client ID: **OW-66** Batch ID: **66644** RunNo: **87030**
Prep Date: **4/5/2022** Analysis Date: **4/6/2022** SeqNo: **3076473** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	2.7	0.015	0.5000	2.257	96.2	70	130			

Sample ID: **2203C69-003DMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Metals**
Client ID: **OW-66** Batch ID: **66644** RunNo: **87030**
Prep Date: **4/5/2022** Analysis Date: **4/6/2022** SeqNo: **3076474** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	2.8	0.015	0.5000	2.257	99.8	70	130	0.652	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203C69**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW** Batch ID: **B86825** RunNo: **86825**
Prep Date: Analysis Date: **3/29/2022** SeqNo: **3066298** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **B86825** RunNo: **86825**
Prep Date: Analysis Date: **3/29/2022** SeqNo: **3066300** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0023	0.0020	0.002000	0	116	50	150			
Beryllium	0.0018	0.0020	0.002000	0	92.4	50	150			J
Cadmium	0.0025	0.0020	0.002000	0	126	50	150			
Chromium	0.0060	0.0060	0.006000	0	99.3	50	150			J
Cobalt	0.0058	0.0060	0.006000	0	97.1	50	150			J
Nickel	0.0057	0.010	0.005000	0	114	50	150			J
Silver	0.0055	0.0050	0.005000	0	110	50	150			
Vanadium	0.011	0.050	0.01000	0	107	50	150			J
Zinc	0.012	0.010	0.01000	0	120	50	150			

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **B86825** RunNo: **86825**
Prep Date: Analysis Date: **3/29/2022** SeqNo: **3066302** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.53	0.0020	0.5000	0	107	85	115			
Beryllium	0.52	0.0020	0.5000	0	104	85	115			
Cadmium	0.52	0.0020	0.5000	0	103	85	115			
Chromium	0.51	0.0060	0.5000	0	103	85	115			
Cobalt	0.50	0.0060	0.5000	0	100	85	115			
Nickel	0.49	0.010	0.5000	0	98.7	85	115			
Silver	0.11	0.0050	0.1000	0	107	85	115			
Vanadium	0.53	0.050	0.5000	0	107	85	115			
Zinc	0.50	0.010	0.5000	0	100	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203C69**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB-66472**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **66472**	RunNo: **86921**
Prep Date: **3/29/2022**	Analysis Date: **3/31/2022**	SeqNo: **3071013** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **MSLLLCS-66472**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **66472**	RunNo: **86921**
Prep Date: **3/29/2022**	Analysis Date: **3/31/2022**	SeqNo: **3071014** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0010	0.0010	0.001000	0	102	50	150			
Arsenic	0.00095	0.0010	0.001000	0	95.5	50	150			J
Lead	0.00048	0.00050	0.0005000	0	96.9	50	150			J
Selenium	0.00085	0.0010	0.001000	0	84.6	50	150			J

Sample ID: **MSLCS-66472**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **66472**	RunNo: **86921**
Prep Date: **3/29/2022**	Analysis Date: **3/31/2022**	SeqNo: **3071015** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	101	85	115			
Arsenic	0.025	0.0010	0.02500	0	99.4	85	115			
Lead	0.012	0.00050	0.01250	0	99.0	85	115			
Selenium	0.025	0.0010	0.02500	0	101	85	115			

Sample ID: **2203C69-001DMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Metals**
Client ID: **EB-3-23-22**	Batch ID: **66472**	RunNo: **86921**
Prep Date: **3/29/2022**	Analysis Date: **3/31/2022**	SeqNo: **3071068** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	103	70	130			
Arsenic	0.025	0.0010	0.02500	0	102	70	130			
Lead	0.012	0.00050	0.01250	0	99.9	70	130			
Selenium	0.024	0.0010	0.02500	0	97.8	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203C69**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B86714**	RunNo: **86714**
Prep Date:	Analysis Date: **3/24/2022**	SeqNo: **3062323** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B86714**	RunNo: **86714**
Prep Date:	Analysis Date: **3/24/2022**	SeqNo: **3062324** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0010	0.0010	0.001000	0	102	50	150			
Arsenic	0.0011	0.0010	0.001000	0	107	50	150			
Lead	0.00052	0.00050	0.0005000	0	103	50	150			
Selenium	0.00080	0.0010	0.001000	0	80.5	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B86714**	RunNo: **86714**
Prep Date:	Analysis Date: **3/24/2022**	SeqNo: **3062325** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	103	85	115			
Arsenic	0.026	0.0010	0.02500	0	102	85	115			
Lead	0.013	0.00050	0.01250	0	102	85	115			
Selenium	0.026	0.0010	0.02500	0	103	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203C69**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB-66425**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **PBW**	Batch ID: **66425**	RunNo: **86790**							
Prep Date: **3/28/2022**	Analysis Date: **3/28/2022**	SeqNo: **3064662**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-66425**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **BatchQC**	Batch ID: **66425**	RunNo: **86790**							
Prep Date: **3/28/2022**	Analysis Date: **3/28/2022**	SeqNo: **3064663**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00016	0.00020	0.0001500	0	107	50	150			J

Sample ID: **LCS-66425**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **LCSW**	Batch ID: **66425**	RunNo: **86790**							
Prep Date: **3/28/2022**	Analysis Date: **3/28/2022**	SeqNo: **3064664**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0049	0.00020	0.005000	0	98.0	85	115			

Sample ID: **2203C69-001DMS**	SampType: **MS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **EB-3-23-22**	Batch ID: **66425**	RunNo: **86790**							
Prep Date: **3/28/2022**	Analysis Date: **3/28/2022**	SeqNo: **3064670**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0048	0.00020	0.005000	0	95.6	75	125			

Sample ID: **2203C69-001DMSD**	SampType: **MSD**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **EB-3-23-22**	Batch ID: **66425**	RunNo: **86790**							
Prep Date: **3/28/2022**	Analysis Date: **3/28/2022**	SeqNo: **3064671**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0049	0.00020	0.005000	0	98.4	75	125	2.89	20	

Sample ID: **MB-66456**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **PBW**	Batch ID: **66456**	RunNo: **86816**							
Prep Date: **3/29/2022**	Analysis Date: **3/29/2022**	SeqNo: **3065977**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203C69**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **LCSLL-66456**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC**	Batch ID: **66456**	RunNo: **86816**
Prep Date: **3/29/2022**	Analysis Date: **3/29/2022**	SeqNo: **3065978** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00015	0.00020	0.0001500	0	101	50	150			J

Sample ID: **LCS-66456**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW**	Batch ID: **66456**	RunNo: **86816**
Prep Date: **3/29/2022**	Analysis Date: **3/29/2022**	SeqNo: **3065979** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0049	0.00020	0.005000	0	97.1	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203C69**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB-66393**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **66393**	RunNo: **86828**							
Prep Date: **3/29/2022**	Analysis Date: **3/29/2022**	SeqNo: **3066617**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **MB-66394**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **66394**	RunNo: **86828**							
Prep Date: **3/29/2022**	Analysis Date: **3/29/2022**	SeqNo: **3066618**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **MB-66394**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **66394**	RunNo: **86828**							
Prep Date: **3/29/2022**	Analysis Date: **3/29/2022**	SeqNo: **3066619**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **MB-66393**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **66393**	RunNo: **86828**							
Prep Date: **3/29/2022**	Analysis Date: **3/29/2022**	SeqNo: **3066620**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-66393**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **LCSW**	Batch ID: **66393**	RunNo: **86828**							
Prep Date: **3/29/2022**	Analysis Date: **3/29/2022**	SeqNo: **3066625**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	112	70	130			

Sample ID: **LCS-66394**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **LCSW**	Batch ID: **66394**	RunNo: **86828**							
Prep Date: **3/29/2022**	Analysis Date: **3/29/2022**	SeqNo: **3066626**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.12	0.010	0.1000	0	116	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203C69**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **LCSD-66394**	SampType: **LCSD**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSS02**	Batch ID: **66394**	RunNo: **86828**
Prep Date: **3/29/2022**	Analysis Date: **3/29/2022**	SeqNo: **3066627** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.12	0.010	0.1000	0	117	70	130	0.511	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203C69**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB-66385**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **PBW**	Batch ID: **66385**	RunNo: **86806**							
Prep Date: **3/24/2022**	Analysis Date: **3/28/2022**	SeqNo: **3065860**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.044	0.064								J
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.041		0.03750		110	42.2	138			

Sample ID: **LCS-66385**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSW**	Batch ID: **66385**	RunNo: **86806**							
Prep Date: **3/24/2022**	Analysis Date: **3/28/2022**	SeqNo: **3065861**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.20	0.064	0.1875	0	107	31.7	75.4			S
Surr: DNOP	0.028		0.01875		148	42.2	138			S

Sample ID: **LCSD-66385**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSS02**	Batch ID: **66385**	RunNo: **86806**							
Prep Date: **3/24/2022**	Analysis Date: **3/28/2022**	SeqNo: **3065862**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.11	0.064	0.1875	0	59.4	31.7	75.4	56.8	20	R
Surr: DNOP	0.019		0.01875		104	42.2	138	0	0	

Sample ID: **MB-66409**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **PBW**	Batch ID: **66409**	RunNo: **86806**							
Prep Date: **3/25/2022**	Analysis Date: **3/28/2022**	SeqNo: **3065883**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.040	0.064								J
Motor Oil Range Organics (MRO)	0.099	0.080								
Surr: DNOP	0.035		0.03750		94.4	42.2	138			

Sample ID: **LCS-66409**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSW**	Batch ID: **66409**	RunNo: **86806**							
Prep Date: **3/25/2022**	Analysis Date: **3/28/2022**	SeqNo: **3065884**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.098	0.064	0.1875	0	52.3	31.7	75.4			
Surr: DNOP	0.020		0.01875		105	42.2	138			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203C69**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **LCSD-66409**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02**	Batch ID: **66409**	RunNo: **86806**
Prep Date: **3/25/2022**	Analysis Date: **3/28/2022**	SeqNo: **3065885** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.10	0.064	0.1875	0	56.0	31.7	75.4	6.85	20	
Surr: DNOP	0.020		0.01875		106	42.2	138	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203C69**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R86734**	RunNo: **86734**
Prep Date:	Analysis Date: **3/24/2022**	SeqNo: **3062248** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	99.5	70	130			
Toluene	22	1.0	20.00	0	110	70	130			
Chlorobenzene	23	1.0	20.00	0	113	70	130			
1,1-Dichloroethene	19	1.0	20.00	0	97.0	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	88.5	70	130			
Surr: 1,2-Dichloroethane-d4	9.2		10.00		92.3	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.4	70	130			
Surr: Dibromofluoromethane	9.3		10.00		93.4	70	130			
Surr: Toluene-d8	9.9		10.00		98.8	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R86734**	RunNo: **86734**
Prep Date:	Analysis Date: **3/24/2022**	SeqNo: **3062277** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	0.66	3.0								J
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203C69**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R86734**	RunNo: **86734**
Prep Date:	Analysis Date: **3/24/2022**	SeqNo: **3062277** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Styrene	ND	1.0								
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	8.7		10.00		87.3	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		97.5	70	130			
Surr: Dibromofluoromethane	9.7		10.00		96.8	70	130			
Surr: Toluene-d8	10		10.00		105	70	130			

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R86760**	RunNo: **86760**
Prep Date:	Analysis Date: **3/25/2022**	SeqNo: **3063673** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	17	1.0	20.00	0	85.1	70	130			
Toluene	19	1.0	20.00	0	96.3	70	130			
Chlorobenzene	20	1.0	20.00	0	100	70	130			
1,1-Dichloroethene	16	1.0	20.00	0	81.4	70	130			
Trichloroethene (TCE)	16	1.0	20.00	0	77.7	70	130			
Surr: 1,2-Dichloroethane-d4	8.3		10.00		83.4	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		97.8	70	130			
Surr: Dibromofluoromethane	8.9		10.00		89.4	70	130			
Surr: Toluene-d8	10		10.00		99.9	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R86760**	RunNo: **86760**
Prep Date:	Analysis Date: **3/25/2022**	SeqNo: **3063681** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Acetone	ND	10								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203C69**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R86760**	RunNo: **86760**
Prep Date:	Analysis Date: **3/25/2022**	SeqNo: **3063681** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	0.87	10								J
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	0.69	3.0								J
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	0.34	1.0								J
Vinyl chloride	0.47	1.0								J
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	8.7		10.00		86.7	70	130			
Surr: 4-Bromofluorobenzene	9.5		10.00		95.1	70	130			
Surr: Dibromofluoromethane	9.8		10.00		98.4	70	130			
Surr: Toluene-d8	11		10.00		107	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203C69**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB-66392**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **66392**	RunNo: **86931**
Prep Date: **3/25/2022**	Analysis Date: **4/2/2022**	SeqNo: **3071648** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	5.0								
2,4-Dinitrophenol	ND	20								
1-Methylnaphthalene	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	5.0								
3+4-Methylphenol	ND	5.0								
Naphthalene	ND	5.0								
Phenol	ND	5.0								
Pyridine	ND	10								
2,4,6-Trichlorophenol	ND	5.0								
Surr: 2-Fluorophenol	120		200.0		58.9	29.4	87.7			
Surr: Phenol-d5	89		200.0		44.3	28.5	64.7			
Surr: 2,4,6-Tribromophenol	150		200.0		74.4	18.6	129			
Surr: Nitrobenzene-d5	70		100.0		69.7	36.9	103			
Surr: 2-Fluorobiphenyl	61		100.0		61.1	38.1	99.9			
Surr: 4-Terphenyl-d14	81		100.0		80.6	48	155			

Sample ID: **LCS-66392**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **66392**	RunNo: **86931**
Prep Date: **3/25/2022**	Analysis Date: **4/2/2022**	SeqNo: **3071649** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	48	5.0	100.0	0	48.2	15	87.6			
Phenol	70	5.0	200.0	0	35.1	16.8	70.5			
Surr: 2-Fluorophenol	91		200.0		45.3	29.4	87.7			
Surr: Phenol-d5	71		200.0		35.6	28.5	64.7			
Surr: 2,4,6-Tribromophenol	150		200.0		75.3	18.6	129			
Surr: Nitrobenzene-d5	62		100.0		61.8	36.9	103			
Surr: 2-Fluorobiphenyl	54		100.0		53.8	38.1	99.9			
Surr: 4-Terphenyl-d14	94		100.0		94.1	48	155			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203C69**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **LCSD-66392**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **66392**	RunNo: **86931**
Prep Date: **3/25/2022**	Analysis Date: **4/2/2022**	SeqNo: **3071650** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	58	5.0	100.0	0	58.2	15	87.6	18.9	30.4	
Phenol	82	5.0	200.0	0	41.0	16.8	70.5	15.4	37.2	
Surr: 2-Fluorophenol	110		200.0		55.0	29.4	87.7	0	0	
Surr: Phenol-d5	83		200.0		41.4	28.5	64.7	0	0	
Surr: 2,4,6-Tribromophenol	160		200.0		81.7	18.6	129	0	0	
Surr: Nitrobenzene-d5	67		100.0		67.2	36.9	103	0	0	
Surr: 2-Fluorobiphenyl	61		100.0		61.4	38.1	99.9	0	0	
Surr: 4-Terphenyl-d14	99		100.0		98.6	48	155	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203C69**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **mb-66392**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**							
Client ID: **PBW**	Batch ID: **R86913**	RunNo: **86913**							
Prep Date:	Analysis Date: **3/30/2022**	SeqNo: **3070657**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.10								
2-Methylnaphthalene	ND	0.10								
Acenaphthene	ND	0.10								
Fluorene	ND	0.10								
Phenanthrene	ND	0.10								
Anthracene	ND	0.10								
Fluoranthene	ND	0.20								
Pyrene	ND	0.20								
Benz(a)anthracene	ND	0.10								
Chrysene	ND	0.10								
Benzo(b)fluoranthene	ND	0.10								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	68		100.0		67.5	31.6	100			
Surr: 2,4,6-Tribromophenol	87		200.0		43.7	22	101			
Surr: 2-Fluorobiphenyl	61		100.0		61.0	26.7	90.1			
Surr: 4-Terphenyl-d14	92		100.0		92.2	72.3	147			

Sample ID: **lcs-66392-lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**							
Client ID: **LCSW**	Batch ID: **R86913**	RunNo: **86913**							
Prep Date:	Analysis Date: **3/30/2022**	SeqNo: **3070659**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.70	0.10	2.000	0	35.0	20.2	48.4			
Naphthalene	1.2	0.10	2.000	0	58.0	21.3	79.9			
1-Methylnaphthalene	1.2	0.10	2.000	0	60.0	22.2	80.3			
2-Methylnaphthalene	1.2	0.10	2.000	0	59.0	20.6	80.1			
Acenaphthene	1.3	0.10	2.000	0	67.0	29.8	82.7			
Fluorene	1.5	0.10	2.000	0	74.0	33.3	86			
Phenanthrene	1.6	0.10	2.000	0	78.0	38.2	93.9			
Anthracene	1.7	0.10	2.000	0	86.0	41.1	95.6			
Fluoranthene	2.0	0.20	2.000	0	99.0	52.9	123			
Pyrene	1.9	0.20	2.000	0	93.0	51	113			
Benz(a)anthracene	2.4	0.10	2.000	0	121	51	147			
Chrysene	1.8	0.10	2.000	0	91.0	55.3	115			
Benzo(b)fluoranthene	2.3	0.10	2.000	0	114	44.4	136			
Indeno(1,2,3-cd)pyrene	3.0	0.30	2.000	0	150	31.4	165			
Surr: Nitrobenzene-d5	67		100.0		66.8	31.6	100			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203C69**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **lcs-66392-lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **R86913**	RunNo: **86913**
Prep Date:	Analysis Date: **3/30/2022**	SeqNo: **3070659** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	92		200.0		45.9	22	101			
Surr: 2-Fluorobiphenyl	62		100.0		62.0	26.7	90.1			
Surr: 4-Terphenyl-d14	86		100.0		85.7	72.3	147			

Sample ID: **lcsd-66392-lf**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02**	Batch ID: **R86913**	RunNo: **86913**
Prep Date:	Analysis Date: **3/30/2022**	SeqNo: **3070662** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.74	0.10	2.000	0	37.0	20.2	48.4	5.56	30.1	
Naphthalene	1.2	0.10	2.000	0	62.0	21.3	79.9	6.67	25.6	
1-Methylnaphthalene	1.3	0.10	2.000	0	64.0	22.2	80.3	6.45	25	
2-Methylnaphthalene	1.3	0.10	2.000	0	64.0	20.6	80.1	8.13	25	
Acenaphthene	1.5	0.10	2.000	0	73.0	29.8	82.7	8.57	27.8	
Fluorene	1.6	0.10	2.000	0	80.0	33.3	86	7.79	26.4	
Phenanthrene	1.7	0.10	2.000	0	83.0	38.2	93.9	6.21	27.9	
Anthracene	1.8	0.10	2.000	0	92.0	41.1	95.6	6.74	25.6	
Fluoranthene	2.1	0.20	2.000	0	106	52.9	123	6.83	22.8	
Pyrene	1.9	0.20	2.000	0	96.0	51	113	3.17	20	
Benz(a)anthracene	2.5	0.10	2.000	0	125	51	147	3.25	24.1	
Chrysene	1.9	0.10	2.000	0	95.0	55.3	115	4.30	20	
Benzo(b)fluoranthene	2.4	0.10	2.000	0	120	44.4	136	5.13	24.5	
Indeno(1,2,3-cd)pyrene	3.1	0.30	2.000	0	155	31.4	165	3.28	21.1	
Surr: Nitrobenzene-d5	70		100.0		70.4	31.6	100	0	0	
Surr: 2,4,6-Tribromophenol	93		200.0		46.7	22	101	0	0	
Surr: 2-Fluorobiphenyl	65		100.0		65.5	26.7	90.1	0	0	
Surr: 4-Terphenyl-d14	86		100.0		86.4	72.3	147	0	0	

Sample ID: **mb-66423**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **R87058**	RunNo: **87058**
Prep Date:	Analysis Date: **4/6/2022**	SeqNo: **3076829** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.10								
2-Methylnaphthalene	ND	0.10								
Acenaphthene	ND	0.10								
Fluorene	ND	0.10								
Phenanthrene	ND	0.10								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203C69**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **mb-66423**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**							
Client ID: **PBW**	Batch ID: **R87058**	RunNo: **87058**							
Prep Date:	Analysis Date: **4/6/2022**	SeqNo: **3076829**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Anthracene	ND	0.10								
Fluoranthene	ND	0.20								
Pyrene	0.16	0.20								J
Benz(a)anthracene	ND	0.10								
Chrysene	ND	0.10								
Benzo(b)fluoranthene	ND	0.10								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	62		100.0		61.8	31.6	100			
Surr: 2,4,6-Tribromophenol	86		200.0		43.0	22	101			
Surr: 2-Fluorobiphenyl	59		100.0		58.9	26.7	90.1			
Surr: 4-Terphenyl-d14	110		100.0		113	72.3	147			E

Sample ID: **lcs-66423-lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**							
Client ID: **LCSW**	Batch ID: **R87058**	RunNo: **87058**							
Prep Date:	Analysis Date: **4/6/2022**	SeqNo: **3076830**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.68	0.10	2.000	0	34.0	20.2	48.4			
Naphthalene	1.1	0.10	2.000	0	55.0	21.3	79.9			
1-Methylnaphthalene	1.1	0.10	2.000	0	56.0	22.2	80.3			
2-Methylnaphthalene	1.1	0.10	2.000	0	57.0	20.6	80.1			
Acenaphthene	1.3	0.10	2.000	0	64.0	29.8	82.7			
Fluorene	1.5	0.10	2.000	0	73.0	33.3	86			
Phenanthrene	1.8	0.10	2.000	0	91.0	38.2	93.9			
Anthracene	1.9	0.10	2.000	0	93.0	41.1	95.6			
Fluoranthene	2.3	0.20	2.000	0	113	52.9	123			
Pyrene	2.0	0.20	2.000	0	101	51	113			
Benz(a)anthracene	2.4	0.10	2.000	0	121	51	147			
Chrysene	2.1	0.10	2.000	0	106	55.3	115			
Benzo(b)fluoranthene	2.4	0.10	2.000	0	119	44.4	136			
Indeno(1,2,3-cd)pyrene	2.5	0.30	2.000	0	127	31.4	165			
Surr: Nitrobenzene-d5	60		102.0		58.6	31.6	100			
Surr: 2,4,6-Tribromophenol	91		202.0		45.1	22	101			
Surr: 2-Fluorobiphenyl	60		102.0		58.9	26.7	90.1			
Surr: 4-Terphenyl-d14	110		102.0		106	72.3	147			E

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203C69**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **lcsd-66423-lf**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**							
Client ID: **LCSS02**	Batch ID: **R87058**	RunNo: **87058**							
Prep Date:	Analysis Date: **4/6/2022**	SeqNo: **3076831**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.58	0.10	2.000	0	29.0	20.2	48.4	15.9	30.1	
Naphthalene	0.90	0.10	2.000	0	45.0	21.3	79.9	20.0	25.6	
1-Methylnaphthalene	0.94	0.10	2.000	0	47.0	22.2	80.3	17.5	25	
2-Methylnaphthalene	0.96	0.10	2.000	0	48.0	20.6	80.1	17.1	25	
Acenaphthene	1.1	0.10	2.000	0	53.0	29.8	82.7	18.8	27.8	
Fluorene	1.2	0.10	2.000	0	60.0	33.3	86	19.5	26.4	
Phenanthrene	1.3	0.10	2.000	0	67.0	38.2	93.9	30.4	27.9	R
Anthracene	1.5	0.10	2.000	0	74.0	41.1	95.6	22.8	25.6	
Fluoranthene	1.9	0.20	2.000	0	94.0	52.9	123	18.4	22.8	
Pyrene	1.5	0.20	2.000	0	75.0	51	113	29.5	20	R
Benz(a)anthracene	1.9	0.10	2.000	0	93.0	51	147	26.2	24.1	R
Chrysene	1.5	0.10	2.000	0	76.0	55.3	115	33.0	20	R
Benzo(b)fluoranthene	1.7	0.10	2.000	0	84.0	44.4	136	34.5	24.5	R
Indeno(1,2,3-cd)pyrene	1.8	0.30	2.000	0	89.0	31.4	165	35.2	21.1	R
Surr: Nitrobenzene-d5	58		102.0		57.3	31.6	100	0	0	
Surr: 2,4,6-Tribromophenol	80		102.0		78.9	22	101	0	0	
Surr: 2-Fluorobiphenyl	56		202.0		27.7	26.7	90.1	0	0	
Surr: 4-Terphenyl-d14	91		102.0		89.6	72.3	147	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203C69**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **2.5ug lcs gro**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **G86734**	RunNo: **86734**
Prep Date:	Analysis Date: **3/24/2022**	SeqNo: **3062281** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.49	0.050	0.5000	0	97.9	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.2	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **G86734**	RunNo: **86734**
Prep Date:	Analysis Date: **3/24/2022**	SeqNo: **3062303** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.041	0.050								J
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: Marathon Work Order Number: 2203C69 RcptNo: 1

Received By: Cheyenne Cason 3/24/2022 7:30:00 AM

Completed By: Cheyenne Cason 3/24/2022 8:10:21 AM

Reviewed By: 3/24/22

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☑ No ~~☐~~ TMC 3/24/22 NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☑ No ☐ NA ☐
10. Were any sample containers received broken? Yes ☐ No ☑

# of preserved bottles checked for pH: 10 - 9 (<2 or >12 unless noted)
Adjusted? yes
Checked by: TMC 3/24/22

11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

16. Additional remarks: Added ~40uL of HNO3 to sample 0030 for proper pH - TMC 3/24/22

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.3	Good	Yes			
2	0.7	Good	Yes			
3	0.3	Good	Yes			
4	1.1	Good	Yes			

Released to Imaging: 4/21/2023 9:40:26 AM
Received by OCD: 4/21/2023 9:21:57 AM

Chain-of-Custody Record

Marathon Gallup Refinery

Address: 92 Giant Crossing Road
Jamestown, NM,87347
#: 808-640-1823
r Fax#:
Package:
dard ☐ Level 4 (Full Validation)
tation: ☐ Az Compliance
AC ☐ Other
D (Type)

Turn-Around Time:
X Standard Rush
Project Name:
2022 GW Sampling 1st Quarter
Project #: **697-080-001**
Project Manager:
Lesli Alexander/Mackensie Swift
Sampler: Hilario Trejo
On Ice: ☒ Yes ☐ No
#of Coolers: 3
Cooler Temp (including CF): See Remarks

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No 2203695	See Analyte List	8260B: VOC	8270C: SVOC	8270C SIM: PAH, 1,4 Dioxane	8015: TPH GRO/DRO/MRO	E200.7: Metals	E200.7: Dissolved Metals	E245.1 Mercury	E504.1: EDB	E335.4: Cyanide Subbed		537.1: PFAS	SM 5201B: BOD	410.4: COD	SM9223B E Coli
3/23	9:20		EB-3-23-22	13		001	X	X	X	X	X	X	X	X	X	X					
3/23	9:20		OW-54	13		002	X	X	X	X	X	X	X	X	X	X					
3/23	8:50		OW-66	13		003	X	X	X	X	X	X	X	X	X	X					
3/23	9:10		GW-55	13		004	X	X	X	X	X	X	X	X	X	X					
3/23	9:30		OW-13	13		005	X	X	X	X	X	X	X	X	X	X					
3/23	9:50		OW-56	13		006	X	X	X	X	X	X	X	X	X	X					
3/23	10:10		OW-59	13		007	X	X	X	X	X	X	X	X	X	X					
3/23	10:30		OW-60	13		008	X	X	X	X	X	X	X	X	X	X					
3/23	11:00		MKTF-16	8		009	X	X	X	X	X	X	X	X	X	X					
3/23	~~8:20~~		DUP-3-23-22	13		010	X	X	X	X	X	X	X	X	X	X					
3/23	11:00		FB-3-23-22	2		011		X													
			Trip Blank			012															

	Time	Relinquished by	Received by	Via	Date	Time
3/23	1:00	Hilario Trejo		Courier	3/24/22	7:30
	Time:	Relinquished by:	Received by:	Via:	Date	Time

Note: MKTF-16 only had enough fluids to fill VOC's and half an Amber

2.4-0.1=2.3°
0.9-0.1=0.7°
0.4-0.1=0.3°
1.2-0.1=1.1°
3.0-0.1=2.9°

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

April 22, 2022

Lesli Alexander

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX (505) 632-3911

RE: 2022 GW Sampling 1st Qtr OrderNo.: 2203D54

Dear Lesli Alexander:

Hall Environmental Analysis Laboratory received 9 sample(s) on 3/25/2022 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued April 13, 2022.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **2203D54**
Date: **4/22/2022**

CLIENT: Marathon
Project: 2022 GW Sampling 1st Qtr

"S" flagged denote that the surrogate recoveries are outstide of the standard limits due to matrix interferences/sample dilution.

Analytical Report
Lab Order: **2203D54**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-3-24-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/24/2022 8:30:00 AM
Lab ID: 2203D54-001A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **CCM**	
Gasoline Range Organics (GRO)	ND	0.023	0.050		mg/L	1	4/1/2022 3:34:00 PM	A86911
Surr: BFB	104	0	70-130		%Rec	1	4/1/2022 3:34:00 PM	A86911
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	4/5/2022 4:45:09 PM	A87014
Toluene	ND	0.20	1.0		µg/L	1	4/5/2022 4:45:09 PM	A87014
Ethylbenzene	ND	0.21	1.0		µg/L	1	4/5/2022 4:45:09 PM	A87014
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	4/5/2022 4:45:09 PM	A87014
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	4/5/2022 4:45:09 PM	A87014
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	4/5/2022 4:45:09 PM	A87014
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	4/5/2022 4:45:09 PM	A87014
Acetone	ND	2.5	10		µg/L	1	4/5/2022 4:45:09 PM	A87014
Bromomethane	ND	0.85	3.0		µg/L	1	4/5/2022 4:45:09 PM	A87014
2-Butanone	9.2	2.0	10	J	µg/L	1	4/5/2022 4:45:09 PM	A87014
Carbon disulfide	ND	0.59	10		µg/L	1	4/5/2022 4:45:09 PM	A87014
Chlorobenzene	ND	0.16	1.0		µg/L	1	4/5/2022 4:45:09 PM	A87014
Chloroform	ND	0.13	1.0		µg/L	1	4/5/2022 4:45:09 PM	A87014
Chloromethane	ND	0.41	3.0		µg/L	1	4/5/2022 4:45:09 PM	A87014
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	4/5/2022 4:45:09 PM	A87014
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	4/5/2022 4:45:09 PM	A87014
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	4/5/2022 4:45:09 PM	A87014
Isopropylbenzene	ND	0.18	1.0		µg/L	1	4/5/2022 4:45:09 PM	A87014
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	4/5/2022 4:45:09 PM	A87014
Methylene Chloride	ND	0.50	3.0		µg/L	1	4/5/2022 4:45:09 PM	A87014
n-Butylbenzene	ND	0.25	3.0		µg/L	1	4/5/2022 4:45:09 PM	A87014
n-Propylbenzene	ND	0.18	1.0		µg/L	1	4/5/2022 4:45:09 PM	A87014
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	4/5/2022 4:45:09 PM	A87014
Styrene	ND	0.14	1.0		µg/L	1	4/5/2022 4:45:09 PM	A87014
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	4/5/2022 4:45:09 PM	A87014
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	4/5/2022 4:45:09 PM	A87014
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	4/5/2022 4:45:09 PM	A87014
Vinyl chloride	ND	0.32	1.0		µg/L	1	4/5/2022 4:45:09 PM	A87014
Xylenes, Total	ND	0.37	1.5		µg/L	1	4/5/2022 4:45:09 PM	A87014
Surr: 1,2-Dichloroethane-d4	96.3	0	70-130		%Rec	1	4/5/2022 4:45:09 PM	A87014
Surr: 4-Bromofluorobenzene	99.6	0	70-130		%Rec	1	4/5/2022 4:45:09 PM	A87014
Surr: Dibromofluoromethane	93.0	0	70-130		%Rec	1	4/5/2022 4:45:09 PM	A87014
Surr: Toluene-d8	94.5	0	70-130		%Rec	1	4/5/2022 4:45:09 PM	A87014

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203D54**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-3-24-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/24/2022 8:30:00 AM
Lab ID: 2203D54-001B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.017	0.047		µg/L	5	3/30/2022 5:01:58 PM	66394

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203D54**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-3-24-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/24/2022 8:30:00 AM
Lab ID: 2203D54-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.027	0.016	0.064	J	mg/L	1	3/29/2022 12:29:36 AM	66409
Motor Oil Range Organics (MRO)	0.090	0.052	0.080	B	mg/L	1	3/29/2022 12:29:36 AM	66409
Surr: DNOP	100	0	42.2-138		%Rec	1	3/29/2022 12:29:36 AM	66409
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	1.1	20		µg/L	1	4/7/2022 2:23:52 PM	66423
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	4/7/2022 2:23:52 PM	66423
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	4/7/2022 2:23:52 PM	66423
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	4/7/2022 2:23:52 PM	66423
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	4/7/2022 2:23:52 PM	66423
Diethyl phthalate	ND	3.9	10		µg/L	1	4/7/2022 2:23:52 PM	66423
Dimethyl phthalate	ND	2.0	10		µg/L	1	4/7/2022 2:23:52 PM	66423
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	4/7/2022 2:23:52 PM	66423
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	4/7/2022 2:23:52 PM	66423
2-Methylphenol	ND	0.51	5.0		µg/L	1	4/7/2022 2:23:52 PM	66423
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	4/7/2022 2:23:52 PM	66423
Phenol	ND	0.33	5.0		µg/L	1	4/7/2022 2:23:52 PM	66423
Pyridine	ND	10	10		µg/L	1	4/7/2022 2:23:52 PM	66423
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	4/7/2022 2:23:52 PM	66423
Surr: 2-Fluorophenol	49.6	0	29.4-87.7		%Rec	1	4/7/2022 2:23:52 PM	66423
Surr: Phenol-d5	38.2	0	28.5-64.7		%Rec	1	4/7/2022 2:23:52 PM	66423
Surr: 2,4,6-Tribromophenol	61.0	0	18.6-129		%Rec	1	4/7/2022 2:23:52 PM	66423
Surr: Nitrobenzene-d5	61.3	0	36.9-103		%Rec	1	4/7/2022 2:23:52 PM	66423
Surr: 2-Fluorobiphenyl	53.6	0	38.1-99.9		%Rec	1	4/7/2022 2:23:52 PM	66423
Surr: 4-Terphenyl-d14	88.5	0	48-155		%Rec	1	4/7/2022 2:23:52 PM	66423
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.048	1.0		µg/L	1	4/6/2022 3:26:00 PM	R87058
Naphthalene	ND	0.034	0.10		µg/L	1	4/6/2022 3:26:00 PM	R87058
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	4/6/2022 3:26:00 PM	R87058
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	4/6/2022 3:26:00 PM	R87058
Acenaphthene	ND	0.031	0.10		µg/L	1	4/6/2022 3:26:00 PM	R87058
Fluorene	ND	0.031	0.10		µg/L	1	4/6/2022 3:26:00 PM	R87058
Phenanthrene	ND	0.057	0.10		µg/L	1	4/6/2022 3:26:00 PM	R87058
Anthracene	ND	0.034	0.10		µg/L	1	4/6/2022 3:26:00 PM	R87058
Fluoranthene	ND	0.10	0.20		µg/L	1	4/6/2022 3:26:00 PM	R87058
Pyrene	ND	0.16	0.20		µg/L	1	4/6/2022 3:26:00 PM	R87058
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	4/6/2022 3:26:00 PM	R87058
Chrysene	ND	0.024	0.10		µg/L	1	4/6/2022 3:26:00 PM	R87058
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	4/6/2022 3:26:00 PM	R87058
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	4/6/2022 3:26:00 PM	R87058

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203D54**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-3-24-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/24/2022 8:30:00 AM
Lab ID: 2203D54-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	63.1	0	31.6-100		%Rec	1	4/6/2022 3:26:00 PM	R87058
Surr: 2-Fluorobiphenyl	62.6	0	26.7-90.1		%Rec	1	4/6/2022 3:26:00 PM	R87058
Surr: 4-Terphenyl-d14	117	0	72.3-147	E	%Rec	1	4/6/2022 3:26:00 PM	R87058

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203D54**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-3-24-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/24/2022 8:30:00 AM
Lab ID: 2203D54-001D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	ND	0.0016	0.0030		mg/L	1	4/6/2022 4:31:07 PM	66644
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 4:31:07 PM	66644
Cadmium	ND	0.0015	0.0020		mg/L	1	4/6/2022 4:31:07 PM	66644
Chromium	ND	0.0021	0.0060		mg/L	1	4/6/2022 4:31:07 PM	66644
Cobalt	ND	0.0024	0.0060		mg/L	1	4/6/2022 4:31:07 PM	66644
Nickel	ND	0.0033	0.010		mg/L	1	4/6/2022 4:31:07 PM	66644
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 4:31:07 PM	66644
Vanadium	ND	0.0024	0.050		mg/L	1	4/6/2022 4:31:07 PM	66644
Zinc	ND	0.0064	0.010		mg/L	1	4/6/2022 4:31:07 PM	66644
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/31/2022 2:04:59 PM	66472
Arsenic	ND	0.00013	0.0010		mg/L	1	3/31/2022 2:04:59 PM	66472
Lead	ND	0.000061	0.00050		mg/L	1	3/31/2022 2:04:59 PM	66472
Selenium	ND	0.00037	0.0010		mg/L	1	3/31/2022 2:04:59 PM	66472
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/28/2022 3:50:32 PM	66425

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203D54**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-3-24-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/24/2022 8:30:00 AM
Lab ID: 2203D54-001E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	ND	0.0011	0.0020		mg/L	1	3/29/2022 2:54:08 PM	C86825
Beryllium	ND	0.00088	0.0020		mg/L	1	3/29/2022 2:54:08 PM	C86825
Cadmium	ND	0.00098	0.0020		mg/L	1	3/29/2022 2:54:08 PM	C86825
Chromium	ND	0.0020	0.0060		mg/L	1	3/29/2022 2:54:08 PM	C86825
Cobalt	ND	0.0024	0.0060		mg/L	1	3/29/2022 2:54:08 PM	C86825
Nickel	ND	0.0033	0.010		mg/L	1	4/19/2022 12:10:03 PM	A87332
Silver	ND	0.0013	0.0050		mg/L	1	3/29/2022 2:54:08 PM	C86825
Vanadium	ND	0.0017	0.050		mg/L	1	3/29/2022 2:54:08 PM	C86825
Zinc	0.0071	0.0032	0.010	J	mg/L	1	3/29/2022 2:54:08 PM	C86825
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/28/2022 1:43:32 PM	B86786
Arsenic	ND	0.00012	0.0010		mg/L	1	3/28/2022 1:43:32 PM	B86786
Lead	ND	0.000057	0.00050		mg/L	1	3/28/2022 1:43:32 PM	B86786
Selenium	ND	0.00034	0.0010		mg/L	1	3/28/2022 1:43:32 PM	B86786
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/29/2022 2:50:07 PM	66456

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203D54**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-30
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/24/2022 8:55:00 AM
Lab ID: 2203D54-002A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **CCM**	
Gasoline Range Organics (GRO)	1.4	0.023	0.050		mg/L	1	4/1/2022 4:33:00 PM	A86911
Surr: BFB	103	0	70-130		%Rec	1	4/1/2022 4:33:00 PM	A86911
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	4/2/2022 6:41:44 AM	A86942
Toluene	0.20	0.20	1.0	J	µg/L	1	4/2/2022 6:41:44 AM	A86942
Ethylbenzene	ND	0.21	1.0		µg/L	1	4/2/2022 6:41:44 AM	A86942
Methyl tert-butyl ether (MTBE)	1400	20	50		µg/L	50	4/4/2022 7:12:27 PM	A86972
1,2,4-Trimethylbenzene	0.54	0.12	1.0	J	µg/L	1	4/2/2022 6:41:44 AM	A86942
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	4/2/2022 6:41:44 AM	A86942
1,2-Dichloroethane (EDC)	0.42	0.25	1.0	J	µg/L	1	4/2/2022 6:41:44 AM	A86942
Acetone	3.1	2.5	10	J	µg/L	1	4/2/2022 6:41:44 AM	A86942
Bromomethane	ND	0.85	3.0		µg/L	1	4/2/2022 6:41:44 AM	A86942
2-Butanone	ND	2.0	10		µg/L	1	4/2/2022 6:41:44 AM	A86942
Carbon disulfide	ND	0.59	10		µg/L	1	4/2/2022 6:41:44 AM	A86942
Chlorobenzene	ND	0.16	1.0		µg/L	1	4/2/2022 6:41:44 AM	A86942
Chloroform	ND	0.13	1.0		µg/L	1	4/2/2022 6:41:44 AM	A86942
Chloromethane	ND	0.41	3.0		µg/L	1	4/2/2022 6:41:44 AM	A86942
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	4/2/2022 6:41:44 AM	A86942
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	4/2/2022 6:41:44 AM	A86942
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	4/2/2022 6:41:44 AM	A86942
Isopropylbenzene	ND	0.18	1.0		µg/L	1	4/2/2022 6:41:44 AM	A86942
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	4/2/2022 6:41:44 AM	A86942
Methylene Chloride	ND	0.50	3.0		µg/L	1	4/2/2022 6:41:44 AM	A86942
n-Butylbenzene	ND	0.25	3.0		µg/L	1	4/2/2022 6:41:44 AM	A86942
n-Propylbenzene	ND	0.18	1.0		µg/L	1	4/2/2022 6:41:44 AM	A86942
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	4/2/2022 6:41:44 AM	A86942
Styrene	ND	0.14	1.0		µg/L	1	4/2/2022 6:41:44 AM	A86942
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	4/2/2022 6:41:44 AM	A86942
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	4/2/2022 6:41:44 AM	A86942
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	4/2/2022 6:41:44 AM	A86942
Vinyl chloride	ND	0.32	1.0		µg/L	1	4/2/2022 6:41:44 AM	A86942
Xylenes, Total	0.85	0.37	1.5	J	µg/L	1	4/2/2022 6:41:44 AM	A86942
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%Rec	1	4/2/2022 6:41:44 AM	A86942
Surr: 4-Bromofluorobenzene	99.0	0	70-130		%Rec	1	4/2/2022 6:41:44 AM	A86942
Surr: Dibromofluoromethane	101	0	70-130		%Rec	1	4/2/2022 6:41:44 AM	A86942
Surr: Toluene-d8	98.7	0	70-130		%Rec	1	4/2/2022 6:41:44 AM	A86942

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203D54**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-30
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/24/2022 8:55:00 AM
Lab ID: 2203D54-002B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.017	0.047		µg/L	5	3/30/2022 5:32:13 PM	66394

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203D54**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-30
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/24/2022 8:55:00 AM
Lab ID: 2203D54-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.74	0.016	0.064		mg/L	1	3/29/2022 12:53:47 AM	66409
Motor Oil Range Organics (MRO)	0.11	0.052	0.080	B	mg/L	1	3/29/2022 12:53:47 AM	66409
Surr: DNOP	94.7	0	42.2-138		%Rec	1	3/29/2022 12:53:47 AM	66409
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	1.1	20		µg/L	1	4/7/2022 3:05:37 PM	66423
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	4/7/2022 3:05:37 PM	66423
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	4/7/2022 3:05:37 PM	66423
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	4/7/2022 3:05:37 PM	66423
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	4/7/2022 3:05:37 PM	66423
Diethyl phthalate	ND	3.9	10		µg/L	1	4/7/2022 3:05:37 PM	66423
Dimethyl phthalate	ND	2.0	10		µg/L	1	4/7/2022 3:05:37 PM	66423
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	4/7/2022 3:05:37 PM	66423
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	4/7/2022 3:05:37 PM	66423
2-Methylphenol	ND	0.51	5.0		µg/L	1	4/7/2022 3:05:37 PM	66423
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	4/7/2022 3:05:37 PM	66423
Phenol	ND	0.33	5.0		µg/L	1	4/7/2022 3:05:37 PM	66423
Pyridine	ND	10	10		µg/L	1	4/7/2022 3:05:37 PM	66423
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	4/7/2022 3:05:37 PM	66423
Surr: 2-Fluorophenol	42.2	0	29.4-87.7		%Rec	1	4/7/2022 3:05:37 PM	66423
Surr: Phenol-d5	34.2	0	28.5-64.7		%Rec	1	4/7/2022 3:05:37 PM	66423
Surr: 2,4,6-Tribromophenol	58.7	0	18.6-129		%Rec	1	4/7/2022 3:05:37 PM	66423
Surr: Nitrobenzene-d5	50.8	0	36.9-103		%Rec	1	4/7/2022 3:05:37 PM	66423
Surr: 2-Fluorobiphenyl	49.3	0	38.1-99.9		%Rec	1	4/7/2022 3:05:37 PM	66423
Surr: 4-Terphenyl-d14	69.3	0	48-155		%Rec	1	4/7/2022 3:05:37 PM	66423
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.048	1.0		µg/L	1	4/6/2022 4:09:00 PM	R87058
Naphthalene	ND	0.034	0.10		µg/L	1	4/6/2022 4:09:00 PM	R87058
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	4/6/2022 4:09:00 PM	R87058
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	4/6/2022 4:09:00 PM	R87058
Acenaphthene	ND	0.031	0.10		µg/L	1	4/6/2022 4:09:00 PM	R87058
Fluorene	ND	0.031	0.10		µg/L	1	4/6/2022 4:09:00 PM	R87058
Phenanthrene	ND	0.057	0.10		µg/L	1	4/6/2022 4:09:00 PM	R87058
Anthracene	ND	0.034	0.10		µg/L	1	4/6/2022 4:09:00 PM	R87058
Fluoranthene	ND	0.10	0.20		µg/L	1	4/6/2022 4:09:00 PM	R87058
Pyrene	ND	0.16	0.20		µg/L	1	4/6/2022 4:09:00 PM	R87058
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	4/6/2022 4:09:00 PM	R87058
Chrysene	ND	0.024	0.10		µg/L	1	4/6/2022 4:09:00 PM	R87058
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	4/6/2022 4:09:00 PM	R87058
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	4/6/2022 4:09:00 PM	R87058

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203D54**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-30
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/24/2022 8:55:00 AM
Lab ID: 2203D54-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	58.4	0	31.6-100		%Rec	1	4/6/2022 4:09:00 PM	R87058
Surr: 2-Fluorobiphenyl	52.5	0	26.7-90.1		%Rec	1	4/6/2022 4:09:00 PM	R87058
Surr: 4-Terphenyl-d14	76.9	0	72.3-147		%Rec	1	4/6/2022 4:09:00 PM	R87058

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203D54**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-30
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/24/2022 8:55:00 AM
Lab ID: 2203D54-002D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.14	0.0016	0.0030		mg/L	1	4/6/2022 4:34:19 PM	66644
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 4:34:19 PM	66644
Cadmium	ND	0.0015	0.0020		mg/L	1	4/6/2022 4:34:19 PM	66644
Chromium	ND	0.0021	0.0060		mg/L	1	4/6/2022 4:34:19 PM	66644
Cobalt	0.0042	0.0024	0.0060	J	mg/L	1	4/6/2022 4:34:19 PM	66644
Nickel	0.082	0.0033	0.010		mg/L	1	4/6/2022 4:34:19 PM	66644
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 4:34:19 PM	66644
Vanadium	ND	0.0024	0.050		mg/L	1	4/6/2022 4:34:19 PM	66644
Zinc	ND	0.0064	0.010		mg/L	1	4/6/2022 4:34:19 PM	66644
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/31/2022 2:07:25 PM	66472
Arsenic	0.00066	0.00013	0.0010	J	mg/L	1	3/31/2022 2:07:25 PM	66472
Lead	0.00087	0.000061	0.00050		mg/L	1	3/31/2022 2:07:25 PM	66472
Selenium	ND	0.00037	0.0010		mg/L	1	3/31/2022 2:07:25 PM	66472
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/28/2022 3:52:40 PM	66425

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203D54**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-30
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/24/2022 8:55:00 AM
Lab ID: 2203D54-002E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.16	0.0011	0.0020		mg/L	1	3/29/2022 2:49:38 PM	C86825
Beryllium	ND	0.00088	0.0020		mg/L	1	3/29/2022 2:49:38 PM	C86825
Cadmium	ND	0.00098	0.0020		mg/L	1	3/29/2022 2:49:38 PM	C86825
Chromium	ND	0.0020	0.0060		mg/L	1	3/29/2022 2:49:38 PM	C86825
Cobalt	0.0046	0.0024	0.0060	J	mg/L	1	3/29/2022 2:49:38 PM	C86825
Nickel	0.085	0.0033	0.010		mg/L	1	4/19/2022 12:11:41 PM	A87332
Silver	ND	0.0013	0.0050		mg/L	1	3/29/2022 2:49:38 PM	C86825
Vanadium	ND	0.0017	0.050		mg/L	1	3/29/2022 2:49:38 PM	C86825
Zinc	0.0052	0.0032	0.010	J	mg/L	1	3/29/2022 2:49:38 PM	C86825
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/28/2022 1:46:12 PM	B86786
Arsenic	0.00084	0.00012	0.0010	J	mg/L	1	3/28/2022 1:46:12 PM	B86786
Lead	0.00053	0.000057	0.00050		mg/L	1	3/28/2022 1:46:12 PM	B86786
Selenium	ND	0.00034	0.0010		mg/L	1	3/28/2022 1:46:12 PM	B86786
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/29/2022 2:52:15 PM	66456

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203D54**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-64
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/24/2022 9:30:00 AM
Lab ID: 2203D54-003A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **CCM**	
Gasoline Range Organics (GRO)	0.66	0.023	0.050		mg/L	1	4/1/2022 4:53:00 PM	A86911
Surr: BFB	317	0	70-130	S	%Rec	1	4/1/2022 4:53:00 PM	A86911
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	12	0.23	1.0		µg/L	1	4/2/2022 7:08:34 AM	A86942
Toluene	0.22	0.20	1.0	J	µg/L	1	4/2/2022 7:08:34 AM	A86942
Ethylbenzene	21	0.21	1.0		µg/L	1	4/2/2022 7:08:34 AM	A86942
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	4/2/2022 7:08:34 AM	A86942
1,2,4-Trimethylbenzene	48	0.12	1.0		µg/L	1	4/2/2022 7:08:34 AM	A86942
1,3,5-Trimethylbenzene	1.8	0.18	1.0		µg/L	1	4/2/2022 7:08:34 AM	A86942
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	4/2/2022 7:08:34 AM	A86942
Acetone	4.4	2.5	10	J	µg/L	1	4/2/2022 7:08:34 AM	A86942
Bromomethane	ND	0.85	3.0		µg/L	1	4/2/2022 7:08:34 AM	A86942
2-Butanone	ND	2.0	10		µg/L	1	4/2/2022 7:08:34 AM	A86942
Carbon disulfide	ND	0.59	10		µg/L	1	4/2/2022 7:08:34 AM	A86942
Chlorobenzene	ND	0.16	1.0		µg/L	1	4/2/2022 7:08:34 AM	A86942
Chloroform	0.47	0.13	1.0	J	µg/L	1	4/2/2022 7:08:34 AM	A86942
Chloromethane	ND	0.41	3.0		µg/L	1	4/2/2022 7:08:34 AM	A86942
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	4/2/2022 7:08:34 AM	A86942
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	4/2/2022 7:08:34 AM	A86942
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	4/2/2022 7:08:34 AM	A86942
Isopropylbenzene	6.3	0.18	1.0		µg/L	1	4/2/2022 7:08:34 AM	A86942
4-Isopropyltoluene	0.30	0.20	1.0	J	µg/L	1	4/2/2022 7:08:34 AM	A86942
Methylene Chloride	ND	0.50	3.0		µg/L	1	4/2/2022 7:08:34 AM	A86942
n-Butylbenzene	0.98	0.25	3.0	J	µg/L	1	4/2/2022 7:08:34 AM	A86942
n-Propylbenzene	3.6	0.18	1.0		µg/L	1	4/2/2022 7:08:34 AM	A86942
sec-Butylbenzene	2.3	0.14	1.0		µg/L	1	4/2/2022 7:08:34 AM	A86942
Styrene	ND	0.14	1.0		µg/L	1	4/2/2022 7:08:34 AM	A86942
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	4/2/2022 7:08:34 AM	A86942
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	4/2/2022 7:08:34 AM	A86942
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	4/2/2022 7:08:34 AM	A86942
Vinyl chloride	ND	0.32	1.0		µg/L	1	4/2/2022 7:08:34 AM	A86942
Xylenes, Total	9.7	0.37	1.5		µg/L	1	4/2/2022 7:08:34 AM	A86942
Surr: 1,2-Dichloroethane-d4	94.6	0	70-130		%Rec	1	4/2/2022 7:08:34 AM	A86942
Surr: 4-Bromofluorobenzene	108	0	70-130		%Rec	1	4/2/2022 7:08:34 AM	A86942
Surr: Dibromofluoromethane	99.1	0	70-130		%Rec	1	4/2/2022 7:08:34 AM	A86942
Surr: Toluene-d8	97.1	0	70-130		%Rec	1	4/2/2022 7:08:34 AM	A86942

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203D54**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-64
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/24/2022 9:30:00 AM
Lab ID: 2203D54-003B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.017	0.047		µg/L	5	3/30/2022 6:02:31 PM	66394

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203D54**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-64
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/24/2022 9:30:00 AM
Lab ID: 2203D54-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.54	0.016	0.064		mg/L	1	3/29/2022 1:17:56 AM	66409
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/29/2022 1:17:56 AM	66409
Surr: DNOP	95.7	0	42.2-138		%Rec	1	3/29/2022 1:17:56 AM	66409
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	1.1	20		µg/L	1	4/7/2022 3:47:02 PM	66423
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	4/7/2022 3:47:02 PM	66423
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	4/7/2022 3:47:02 PM	66423
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	4/7/2022 3:47:02 PM	66423
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	4/7/2022 3:47:02 PM	66423
Diethyl phthalate	ND	3.9	10		µg/L	1	4/7/2022 3:47:02 PM	66423
Dimethyl phthalate	ND	2.0	10		µg/L	1	4/7/2022 3:47:02 PM	66423
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	4/7/2022 3:47:02 PM	66423
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	4/7/2022 3:47:02 PM	66423
2-Methylphenol	ND	0.51	5.0		µg/L	1	4/7/2022 3:47:02 PM	66423
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	4/7/2022 3:47:02 PM	66423
Phenol	ND	0.33	5.0		µg/L	1	4/7/2022 3:47:02 PM	66423
Pyridine	ND	10	10		µg/L	1	4/7/2022 3:47:02 PM	66423
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	4/7/2022 3:47:02 PM	66423
Surr: 2-Fluorophenol	42.1	0	29.4-87.7		%Rec	1	4/7/2022 3:47:02 PM	66423
Surr: Phenol-d5	30.4	0	28.5-64.7		%Rec	1	4/7/2022 3:47:02 PM	66423
Surr: 2,4,6-Tribromophenol	77.6	0	18.6-129		%Rec	1	4/7/2022 3:47:02 PM	66423
Surr: Nitrobenzene-d5	52.2	0	36.9-103		%Rec	1	4/7/2022 3:47:02 PM	66423
Surr: 2-Fluorobiphenyl	45.8	0	38.1-99.9		%Rec	1	4/7/2022 3:47:02 PM	66423
Surr: 4-Terphenyl-d14	81.3	0	48-155		%Rec	1	4/7/2022 3:47:02 PM	66423
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.048	1.0		µg/L	1	4/6/2022 4:53:00 PM	R87058
Naphthalene	1.4	0.034	0.10		µg/L	1	4/6/2022 4:53:00 PM	R87058
1-Methylnaphthalene	1.2	0.024	0.10		µg/L	1	4/6/2022 4:53:00 PM	R87058
2-Methylnaphthalene	0.26	0.034	0.10		µg/L	1	4/6/2022 4:53:00 PM	R87058
Acenaphthene	0.12	0.031	0.10		µg/L	1	4/6/2022 4:53:00 PM	R87058
Fluorene	0.32	0.031	0.10		µg/L	1	4/6/2022 4:53:00 PM	R87058
Phenanthrene	0.94	0.057	0.10		µg/L	1	4/6/2022 4:53:00 PM	R87058
Anthracene	0.30	0.034	0.10		µg/L	1	4/6/2022 4:53:00 PM	R87058
Fluoranthene	0.80	0.10	0.20		µg/L	1	4/6/2022 4:53:00 PM	R87058
Pyrene	0.44	0.16	0.20		µg/L	1	4/6/2022 4:53:00 PM	R87058
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	4/6/2022 4:53:00 PM	R87058
Chrysene	ND	0.024	0.10		µg/L	1	4/6/2022 4:53:00 PM	R87058
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	4/6/2022 4:53:00 PM	R87058
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	4/6/2022 4:53:00 PM	R87058

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203D54**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-64
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/24/2022 9:30:00 AM
Lab ID: 2203D54-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	53.5	0	31.6-100		%Rec	1	4/6/2022 4:53:00 PM	R87058
Surr: 2-Fluorobiphenyl	45.5	0	26.7-90.1		%Rec	1	4/6/2022 4:53:00 PM	R87058
Surr: 4-Terphenyl-d14	76.0	0	72.3-147		%Rec	1	4/6/2022 4:53:00 PM	R87058

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203D54**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-64
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/24/2022 9:30:00 AM
Lab ID: 2203D54-003D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.32	0.0016	0.0030		mg/L	1	4/6/2022 4:37:39 PM	66644
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 4:37:39 PM	66644
Cadmium	ND	0.0015	0.0020		mg/L	1	4/6/2022 4:37:39 PM	66644
Chromium	ND	0.0021	0.0060		mg/L	1	4/6/2022 4:37:39 PM	66644
Cobalt	ND	0.0024	0.0060		mg/L	1	4/6/2022 4:37:39 PM	66644
Nickel	ND	0.0033	0.010		mg/L	1	4/6/2022 4:37:39 PM	66644
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 4:37:39 PM	66644
Vanadium	0.0061	0.0024	0.050	J	mg/L	1	4/6/2022 4:37:39 PM	66644
Zinc	ND	0.0064	0.010		mg/L	1	4/6/2022 4:37:39 PM	66644
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/31/2022 2:09:52 PM	66472
Arsenic	0.0023	0.00013	0.0010		mg/L	1	3/31/2022 2:09:52 PM	66472
Lead	0.00065	0.000061	0.00050		mg/L	1	3/31/2022 2:09:52 PM	66472
Selenium	0.00039	0.00037	0.0010	J	mg/L	1	3/31/2022 2:09:52 PM	66472
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/28/2022 3:59:03 PM	66425

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203D54**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-64
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/24/2022 9:30:00 AM
Lab ID: 2203D54-003E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.33	0.0011	0.0020		mg/L	1	3/29/2022 2:48:00 PM	C86825
Beryllium	ND	0.00088	0.0020		mg/L	1	3/29/2022 2:48:00 PM	C86825
Cadmium	ND	0.00098	0.0020		mg/L	1	3/29/2022 2:48:00 PM	C86825
Chromium	ND	0.0020	0.0060		mg/L	1	3/29/2022 2:48:00 PM	C86825
Cobalt	ND	0.0024	0.0060		mg/L	1	3/29/2022 2:48:00 PM	C86825
Nickel	ND	0.0033	0.010		mg/L	1	4/19/2022 12:13:23 PM	A87332
Silver	ND	0.0013	0.0050		mg/L	1	3/29/2022 2:48:00 PM	C86825
Vanadium	0.0035	0.0017	0.050	J	mg/L	1	3/29/2022 2:48:00 PM	C86825
Zinc	0.0081	0.0032	0.010	J	mg/L	1	3/29/2022 2:48:00 PM	C86825
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/28/2022 1:48:52 PM	B86786
Arsenic	0.0024	0.00012	0.0010		mg/L	1	3/28/2022 1:48:52 PM	B86786
Lead	ND	0.000057	0.00050		mg/L	1	3/28/2022 1:48:52 PM	B86786
Selenium	ND	0.00034	0.0010		mg/L	1	3/28/2022 1:48:52 PM	B86786
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/29/2022 2:54:23 PM	66456

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203D54**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-14
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/24/2022 10:30:00 AM
Lab ID: 2203D54-004A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	61	0.46	1.0		mg/L	20	4/2/2022 4:22:00 PM	B86939
Surr: BFB	113	0	70-130		%Rec	20	4/2/2022 4:22:00 PM	B86939
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	22000	230	1000		µg/L	1E+	4/5/2022 1:35:15 PM	A87014
Toluene	4.2	0.20	1.0		µg/L	1	4/2/2022 7:35:27 AM	A86942
Ethylbenzene	970	11	50		µg/L	50	4/4/2022 7:39:23 PM	A86972
Methyl tert-butyl ether (MTBE)	640	20	50		µg/L	50	4/4/2022 7:39:23 PM	A86972
1,2,4-Trimethylbenzene	3.3	0.12	1.0		µg/L	1	4/2/2022 7:35:27 AM	A86942
1,3,5-Trimethylbenzene	0.47	0.18	1.0	J	µg/L	1	4/2/2022 7:35:27 AM	A86942
1,2-Dichloroethane (EDC)	0.80	0.25	1.0	J	µg/L	1	4/2/2022 7:35:27 AM	A86942
Acetone	ND	2.5	10		µg/L	1	4/2/2022 7:35:27 AM	A86942
Bromomethane	ND	0.85	3.0		µg/L	1	4/2/2022 7:35:27 AM	A86942
2-Butanone	ND	2.0	10		µg/L	1	4/2/2022 7:35:27 AM	A86942
Carbon disulfide	ND	0.59	10		µg/L	1	4/2/2022 7:35:27 AM	A86942
Chlorobenzene	ND	0.16	1.0		µg/L	1	4/2/2022 7:35:27 AM	A86942
Chloroform	ND	0.13	1.0		µg/L	1	4/2/2022 7:35:27 AM	A86942
Chloromethane	ND	0.41	3.0		µg/L	1	4/2/2022 7:35:27 AM	A86942
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	4/2/2022 7:35:27 AM	A86942
1,1-Dichloroethane	0.38	0.27	1.0	J	µg/L	1	4/2/2022 7:35:27 AM	A86942
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	4/2/2022 7:35:27 AM	A86942
Isopropylbenzene	20	0.18	1.0		µg/L	1	4/2/2022 7:35:27 AM	A86942
4-Isopropyltoluene	0.43	0.20	1.0	J	µg/L	1	4/2/2022 7:35:27 AM	A86942
Methylene Chloride	ND	0.50	3.0		µg/L	1	4/2/2022 7:35:27 AM	A86942
n-Butylbenzene	2.7	0.25	3.0	J	µg/L	1	4/2/2022 7:35:27 AM	A86942
n-Propylbenzene	56	0.18	1.0		µg/L	1	4/2/2022 7:35:27 AM	A86942
sec-Butylbenzene	2.9	0.14	1.0		µg/L	1	4/2/2022 7:35:27 AM	A86942
Styrene	ND	0.14	1.0		µg/L	1	4/2/2022 7:35:27 AM	A86942
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	4/2/2022 7:35:27 AM	A86942
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	4/2/2022 7:35:27 AM	A86942
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	4/2/2022 7:35:27 AM	A86942
Vinyl chloride	ND	0.32	1.0		µg/L	1	4/2/2022 7:35:27 AM	A86942
Xylenes, Total	13	0.37	1.5		µg/L	1	4/2/2022 7:35:27 AM	A86942
Surr: 1,2-Dichloroethane-d4	83.7	0	70-130		%Rec	1	4/2/2022 7:35:27 AM	A86942
Surr: 4-Bromofluorobenzene	106	0	70-130		%Rec	1	4/2/2022 7:35:27 AM	A86942
Surr: Dibromofluoromethane	85.0	0	70-130		%Rec	1	4/2/2022 7:35:27 AM	A86942
Surr: Toluene-d8	99.1	0	70-130		%Rec	1	4/2/2022 7:35:27 AM	A86942

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203D54**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-14
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/24/2022 10:30:00 AM
Lab ID: 2203D54-004B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.017	0.047		µg/L	5	3/30/2022 6:32:56 PM	66394

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203D54**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-14
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/24/2022 10:30:00 AM
Lab ID: 2203D54-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	3.7	0.16	0.64		mg/L	10	3/29/2022 4:41:10 PM	66409
Motor Oil Range Organics (MRO)	ND	0.52	0.80	D	mg/L	10	3/29/2022 4:41:10 PM	66409
Surr: DNOP	0	0	42.2-138	S	%Rec	10	3/29/2022 4:41:10 PM	66409
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	1.1	20		µg/L	1	4/7/2022 4:28:59 PM	66423
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	4/7/2022 4:28:59 PM	66423
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	4/7/2022 4:28:59 PM	66423
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	4/7/2022 4:28:59 PM	66423
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	4/7/2022 4:28:59 PM	66423
Diethyl phthalate	ND	3.9	10		µg/L	1	4/7/2022 4:28:59 PM	66423
Dimethyl phthalate	ND	2.0	10		µg/L	1	4/7/2022 4:28:59 PM	66423
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	4/7/2022 4:28:59 PM	66423
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	4/7/2022 4:28:59 PM	66423
2-Methylphenol	ND	0.51	5.0		µg/L	1	4/7/2022 4:28:59 PM	66423
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	4/7/2022 4:28:59 PM	66423
Phenol	34	0.33	5.0		µg/L	1	4/7/2022 4:28:59 PM	66423
Pyridine	ND	10	10		µg/L	1	4/7/2022 4:28:59 PM	66423
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	4/7/2022 4:28:59 PM	66423
Surr: 2-Fluorophenol	49.3	0	29.4-87.7		%Rec	1	4/7/2022 4:28:59 PM	66423
Surr: Phenol-d5	40.0	0	28.5-64.7		%Rec	1	4/7/2022 4:28:59 PM	66423
Surr: 2,4,6-Tribromophenol	89.1	0	18.6-129		%Rec	1	4/7/2022 4:28:59 PM	66423
Surr: Nitrobenzene-d5	67.6	0	36.9-103		%Rec	1	4/7/2022 4:28:59 PM	66423
Surr: 2-Fluorobiphenyl	57.4	0	38.1-99.9		%Rec	1	4/7/2022 4:28:59 PM	66423
Surr: 4-Terphenyl-d14	89.6	0	48-155		%Rec	1	4/7/2022 4:28:59 PM	66423
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	1.1	0.048	1.0		µg/L	1	4/6/2022 5:36:00 PM	R87058
Naphthalene	13	0.034	0.10		µg/L	1	4/6/2022 5:36:00 PM	R87058
1-Methylnaphthalene	14	0.024	0.10		µg/L	1	4/6/2022 5:36:00 PM	R87058
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	4/6/2022 5:36:00 PM	R87058
Acenaphthene	0.32	0.031	0.10		µg/L	1	4/6/2022 5:36:00 PM	R87058
Fluorene	0.56	0.031	0.10		µg/L	1	4/6/2022 5:36:00 PM	R87058
Phenanthrene	0.22	0.057	0.10		µg/L	1	4/6/2022 5:36:00 PM	R87058
Anthracene	0.26	0.034	0.10		µg/L	1	4/6/2022 5:36:00 PM	R87058
Fluoranthene	ND	0.10	0.20		µg/L	1	4/6/2022 5:36:00 PM	R87058
Pyrene	ND	0.16	0.20		µg/L	1	4/6/2022 5:36:00 PM	R87058
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	4/6/2022 5:36:00 PM	R87058
Chrysene	ND	0.024	0.10		µg/L	1	4/6/2022 5:36:00 PM	R87058
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	4/6/2022 5:36:00 PM	R87058
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	4/6/2022 5:36:00 PM	R87058

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203D54**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-14
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/24/2022 10:30:00 AM
Lab ID: 2203D54-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	58.4	0	31.6-100		%Rec	1	4/6/2022 5:36:00 PM	R87058
Surr: 2-Fluorobiphenyl	43.9	0	26.7-90.1		%Rec	1	4/6/2022 5:36:00 PM	R87058
Surr: 4-Terphenyl-d14	71.7	0	72.3-147	S	%Rec	1	4/6/2022 5:36:00 PM	R87058

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203D54**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-14
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/24/2022 10:30:00 AM
Lab ID: 2203D54-004D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	2.1	0.0082	0.015	*	mg/L	5	4/6/2022 4:42:11 PM	66644
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 4:40:47 PM	66644
Cadmium	ND	0.0015	0.0020		mg/L	1	4/6/2022 4:40:47 PM	66644
Chromium	ND	0.0021	0.0060		mg/L	1	4/6/2022 4:40:47 PM	66644
Cobalt	0.0049	0.0024	0.0060	J	mg/L	1	4/6/2022 4:40:47 PM	66644
Nickel	0.086	0.0033	0.010		mg/L	1	4/6/2022 4:40:47 PM	66644
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 4:40:47 PM	66644
Vanadium	ND	0.0024	0.050		mg/L	1	4/6/2022 4:40:47 PM	66644
Zinc	ND	0.0064	0.010		mg/L	1	4/6/2022 4:40:47 PM	66644
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/31/2022 2:12:18 PM	66472
Arsenic	0.0031	0.00013	0.0010		mg/L	1	3/31/2022 2:12:18 PM	66472
Lead	0.000097	0.000061	0.00050	J	mg/L	1	3/31/2022 2:12:18 PM	66472
Selenium	ND	0.00037	0.0010		mg/L	1	3/31/2022 2:12:18 PM	66472
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/28/2022 4:01:10 PM	66425

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203D54**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-14
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/24/2022 10:30:00 AM
Lab ID: 2203D54-004E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	2.1	0.0056	0.010	*	mg/L	5	4/19/2022 12:16:26 PM	A87332
Beryllium	ND	0.00088	0.0020		mg/L	1	3/29/2022 3:04:12 PM	C86825
Cadmium	ND	0.00098	0.0020		mg/L	1	3/29/2022 3:04:12 PM	C86825
Chromium	ND	0.0020	0.0060		mg/L	1	3/29/2022 3:04:12 PM	C86825
Cobalt	0.0050	0.0024	0.0060	J	mg/L	1	3/29/2022 3:04:12 PM	C86825
Nickel	0.089	0.0033	0.010		mg/L	1	4/19/2022 12:15:02 PM	A87332
Silver	ND	0.0013	0.0050		mg/L	1	3/29/2022 3:04:12 PM	C86825
Vanadium	ND	0.0017	0.050		mg/L	1	3/29/2022 3:04:12 PM	C86825
Zinc	0.0091	0.0032	0.010	J	mg/L	1	3/29/2022 3:04:12 PM	C86825
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/28/2022 1:51:33 PM	B86786
Arsenic	0.0028	0.00012	0.0010		mg/L	1	3/28/2022 1:51:33 PM	B86786
Lead	ND	0.000057	0.00050		mg/L	1	3/28/2022 1:51:33 PM	B86786
Selenium	ND	0.00034	0.0010		mg/L	1	3/28/2022 1:51:33 PM	B86786
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/29/2022 2:56:32 PM	66456

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203D54**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1-NW
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/24/2022 9:55:00 AM
Lab ID: 2203D54-005A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **CCM**	
Gasoline Range Organics (GRO)	ND	0.023	0.050		mg/L	1	4/1/2022 5:32:00 PM	A86911
Surr: BFB	101	0	70-130		%Rec	1	4/1/2022 5:32:00 PM	A86911
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	0.44	0.23	1.0	J	µg/L	1	4/4/2022 8:06:33 PM	A86972
Toluene	ND	0.20	1.0		µg/L	1	4/2/2022 8:02:20 AM	A86942
Ethylbenzene	ND	0.21	1.0		µg/L	1	4/4/2022 8:06:33 PM	A86972
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	4/2/2022 8:02:20 AM	A86942
1,2,4-Trimethylbenzene	0.18	0.12	1.0	J	µg/L	1	4/2/2022 8:02:20 AM	A86942
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	4/2/2022 8:02:20 AM	A86942
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	4/2/2022 8:02:20 AM	A86942
Acetone	ND	2.5	10		µg/L	1	4/2/2022 8:02:20 AM	A86942
Bromomethane	ND	0.85	3.0		µg/L	1	4/2/2022 8:02:20 AM	A86942
2-Butanone	ND	2.0	10		µg/L	1	4/2/2022 8:02:20 AM	A86942
Carbon disulfide	ND	0.59	10		µg/L	1	4/2/2022 8:02:20 AM	A86942
Chlorobenzene	ND	0.16	1.0		µg/L	1	4/2/2022 8:02:20 AM	A86942
Chloroform	ND	0.13	1.0		µg/L	1	4/2/2022 8:02:20 AM	A86942
Chloromethane	ND	0.41	3.0		µg/L	1	4/2/2022 8:02:20 AM	A86942
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	4/2/2022 8:02:20 AM	A86942
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	4/2/2022 8:02:20 AM	A86942
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	4/2/2022 8:02:20 AM	A86942
Isopropylbenzene	ND	0.18	1.0		µg/L	1	4/2/2022 8:02:20 AM	A86942
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	4/2/2022 8:02:20 AM	A86942
Methylene Chloride	ND	0.50	3.0		µg/L	1	4/2/2022 8:02:20 AM	A86942
n-Butylbenzene	ND	0.25	3.0		µg/L	1	4/2/2022 8:02:20 AM	A86942
n-Propylbenzene	0.28	0.18	1.0	J	µg/L	1	4/2/2022 8:02:20 AM	A86942
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	4/2/2022 8:02:20 AM	A86942
Styrene	ND	0.14	1.0		µg/L	1	4/2/2022 8:02:20 AM	A86942
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	4/2/2022 8:02:20 AM	A86942
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	4/2/2022 8:02:20 AM	A86942
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	4/2/2022 8:02:20 AM	A86942
Vinyl chloride	ND	0.32	1.0		µg/L	1	4/2/2022 8:02:20 AM	A86942
Xylenes, Total	ND	0.37	1.5		µg/L	1	4/2/2022 8:02:20 AM	A86942
Surr: 1,2-Dichloroethane-d4	97.4	0	70-130		%Rec	1	4/2/2022 8:02:20 AM	A86942
Surr: 4-Bromofluorobenzene	96.1	0	70-130		%Rec	1	4/2/2022 8:02:20 AM	A86942
Surr: Dibromofluoromethane	97.8	0	70-130		%Rec	1	4/2/2022 8:02:20 AM	A86942
Surr: Toluene-d8	102	0	70-130		%Rec	1	4/2/2022 8:02:20 AM	A86942

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203D54**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1-NW
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/24/2022 9:55:00 AM
Lab ID: 2203D54-005B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.017	0.047		µg/L	5	3/30/2022 7:03:19 PM	66394

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203D54**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1-NW
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/24/2022 9:55:00 AM
Lab ID: 2203D54-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.19	0.016	0.064		mg/L	1	3/29/2022 2:06:10 AM	66409
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/29/2022 2:06:10 AM	66409
Surr: DNOP	100	0	42.2-138		%Rec	1	3/29/2022 2:06:10 AM	66409
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	1.1	20		µg/L	1	4/7/2022 5:10:17 PM	66423
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	4/7/2022 5:10:17 PM	66423
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	4/7/2022 5:10:17 PM	66423
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	4/7/2022 5:10:17 PM	66423
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	4/7/2022 5:10:17 PM	66423
Diethyl phthalate	ND	3.9	10		µg/L	1	4/7/2022 5:10:17 PM	66423
Dimethyl phthalate	ND	2.0	10		µg/L	1	4/7/2022 5:10:17 PM	66423
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	4/7/2022 5:10:17 PM	66423
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	4/7/2022 5:10:17 PM	66423
2-Methylphenol	ND	0.51	5.0		µg/L	1	4/7/2022 5:10:17 PM	66423
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	4/7/2022 5:10:17 PM	66423
Phenol	ND	0.33	5.0		µg/L	1	4/7/2022 5:10:17 PM	66423
Pyridine	ND	10	10		µg/L	1	4/7/2022 5:10:17 PM	66423
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	4/7/2022 5:10:17 PM	66423
Surr: 2-Fluorophenol	45.0	0	29.4-87.7		%Rec	1	4/7/2022 5:10:17 PM	66423
Surr: Phenol-d5	35.3	0	28.5-64.7		%Rec	1	4/7/2022 5:10:17 PM	66423
Surr: 2,4,6-Tribromophenol	48.9	0	18.6-129		%Rec	1	4/7/2022 5:10:17 PM	66423
Surr: Nitrobenzene-d5	56.0	0	36.9-103		%Rec	1	4/7/2022 5:10:17 PM	66423
Surr: 2-Fluorobiphenyl	47.9	0	38.1-99.9		%Rec	1	4/7/2022 5:10:17 PM	66423
Surr: 4-Terphenyl-d14	75.5	0	48-155		%Rec	1	4/7/2022 5:10:17 PM	66423
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	0.14	0.048	1.0	J	µg/L	1	4/6/2022 6:21:00 PM	R87058
Naphthalene	ND	0.034	0.10		µg/L	1	4/6/2022 6:21:00 PM	R87058
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	4/6/2022 6:21:00 PM	R87058
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	4/6/2022 6:21:00 PM	R87058
Acenaphthene	ND	0.031	0.10		µg/L	1	4/6/2022 6:21:00 PM	R87058
Fluorene	ND	0.031	0.10		µg/L	1	4/6/2022 6:21:00 PM	R87058
Phenanthrene	ND	0.057	0.10		µg/L	1	4/6/2022 6:21:00 PM	R87058
Anthracene	ND	0.034	0.10		µg/L	1	4/6/2022 6:21:00 PM	R87058
Fluoranthene	ND	0.10	0.20		µg/L	1	4/6/2022 6:21:00 PM	R87058
Pyrene	0.16	0.16	0.20	J	µg/L	1	4/6/2022 6:21:00 PM	R87058
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	4/6/2022 6:21:00 PM	R87058
Chrysene	ND	0.024	0.10		µg/L	1	4/6/2022 6:21:00 PM	R87058
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	4/6/2022 6:21:00 PM	R87058
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	4/6/2022 6:21:00 PM	R87058

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203D54**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1-NW
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/24/2022 9:55:00 AM
Lab ID: 2203D54-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	54.8	0	31.6-100		%Rec	1	4/6/2022 6:21:00 PM	R87058
Surr: 2-Fluorobiphenyl	47.8	0	26.7-90.1		%Rec	1	4/6/2022 6:21:00 PM	R87058
Surr: 4-Terphenyl-d14	78.4	0	72.3-147		%Rec	1	4/6/2022 6:21:00 PM	R87058

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203D54**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1-NW
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/24/2022 9:55:00 AM
Lab ID: 2203D54-005D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.11	0.0016	0.0030		mg/L	1	4/6/2022 4:48:40 PM	66644
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 4:48:40 PM	66644
Cadmium	ND	0.0015	0.0020		mg/L	1	4/6/2022 4:48:40 PM	66644
Chromium	ND	0.0021	0.0060		mg/L	1	4/6/2022 4:48:40 PM	66644
Cobalt	0.0037	0.0024	0.0060	J	mg/L	1	4/6/2022 4:48:40 PM	66644
Nickel	ND	0.0033	0.010		mg/L	1	4/6/2022 4:48:40 PM	66644
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 4:48:40 PM	66644
Vanadium	0.034	0.0024	0.050	J	mg/L	1	4/6/2022 4:48:40 PM	66644
Zinc	0.015	0.0064	0.010		mg/L	1	4/6/2022 4:48:40 PM	66644
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/31/2022 2:14:45 PM	66472
Arsenic	0.0026	0.00013	0.0010		mg/L	1	3/31/2022 2:14:45 PM	66472
Lead	0.0010	0.00031	0.0025	J	mg/L	5	3/31/2022 4:14:29 PM	66473
Selenium	0.0057	0.00037	0.0010		mg/L	1	3/31/2022 2:14:45 PM	66472
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/28/2022 4:03:18 PM	66425

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203D54**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1-NW
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/24/2022 9:55:00 AM
Lab ID: 2203D54-005E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.096	0.0011	0.0020		mg/L	1	3/29/2022 3:05:38 PM	C86825
Beryllium	ND	0.00088	0.0020		mg/L	1	3/29/2022 3:05:38 PM	C86825
Cadmium	ND	0.00098	0.0020		mg/L	1	3/29/2022 3:05:38 PM	C86825
Chromium	ND	0.0020	0.0060		mg/L	1	3/29/2022 3:05:38 PM	C86825
Cobalt	ND	0.0024	0.0060		mg/L	1	3/29/2022 3:05:38 PM	C86825
Nickel	ND	0.0033	0.010		mg/L	1	4/19/2022 12:17:55 PM	A87332
Silver	0.0024	0.0013	0.0050	J	mg/L	1	3/29/2022 3:05:38 PM	C86825
Vanadium	0.034	0.0017	0.050	J	mg/L	1	3/29/2022 3:05:38 PM	C86825
Zinc	0.012	0.0032	0.010		mg/L	1	3/29/2022 3:05:38 PM	C86825
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/28/2022 1:54:13 PM	B86786
Arsenic	0.0024	0.00061	0.0050	J	mg/L	5	3/28/2022 3:09:53 PM	B86786
Lead	ND	0.000057	0.00050		mg/L	1	3/28/2022 1:54:13 PM	B86786
Selenium	0.0063	0.0017	0.0050		mg/L	5	3/28/2022 3:09:53 PM	B86786
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/29/2022 2:58:41 PM	66456

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203D54**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-44
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/24/2022 10:55:00 AM
Lab ID: 2203D54-006A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **CCM**	
Gasoline Range Organics (GRO)	ND	0.023	0.050		mg/L	1	4/1/2022 5:52:00 PM	A86911
Surr: BFB	98.1	0	70-130		%Rec	1	4/1/2022 5:52:00 PM	A86911
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	4/4/2022 8:33:45 PM	A86972
Toluene	ND	0.20	1.0		µg/L	1	4/2/2022 8:29:13 AM	A86942
Ethylbenzene	0.61	0.21	1.0	J	µg/L	1	4/2/2022 8:29:13 AM	A86942
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	4/2/2022 8:29:13 AM	A86942
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	4/2/2022 8:29:13 AM	A86942
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	4/2/2022 8:29:13 AM	A86942
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	4/2/2022 8:29:13 AM	A86942
Acetone	ND	2.5	10		µg/L	1	4/2/2022 8:29:13 AM	A86942
Bromomethane	ND	0.85	3.0		µg/L	1	4/2/2022 8:29:13 AM	A86942
2-Butanone	ND	2.0	10		µg/L	1	4/2/2022 8:29:13 AM	A86942
Carbon disulfide	ND	0.59	10		µg/L	1	4/2/2022 8:29:13 AM	A86942
Chlorobenzene	ND	0.16	1.0		µg/L	1	4/2/2022 8:29:13 AM	A86942
Chloroform	ND	0.13	1.0		µg/L	1	4/2/2022 8:29:13 AM	A86942
Chloromethane	ND	0.41	3.0		µg/L	1	4/2/2022 8:29:13 AM	A86942
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	4/2/2022 8:29:13 AM	A86942
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	4/2/2022 8:29:13 AM	A86942
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	4/2/2022 8:29:13 AM	A86942
Isopropylbenzene	ND	0.18	1.0		µg/L	1	4/2/2022 8:29:13 AM	A86942
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	4/2/2022 8:29:13 AM	A86942
Methylene Chloride	ND	0.50	3.0		µg/L	1	4/2/2022 8:29:13 AM	A86942
n-Butylbenzene	ND	0.25	3.0		µg/L	1	4/2/2022 8:29:13 AM	A86942
n-Propylbenzene	ND	0.18	1.0		µg/L	1	4/2/2022 8:29:13 AM	A86942
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	4/2/2022 8:29:13 AM	A86942
Styrene	ND	0.14	1.0		µg/L	1	4/2/2022 8:29:13 AM	A86942
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	4/2/2022 8:29:13 AM	A86942
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	4/2/2022 8:29:13 AM	A86942
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	4/2/2022 8:29:13 AM	A86942
Vinyl chloride	ND	0.32	1.0		µg/L	1	4/2/2022 8:29:13 AM	A86942
Xylenes, Total	ND	0.37	1.5		µg/L	1	4/2/2022 8:29:13 AM	A86942
Surr: 1,2-Dichloroethane-d4	100	0	70-130		%Rec	1	4/2/2022 8:29:13 AM	A86942
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	4/2/2022 8:29:13 AM	A86942
Surr: Dibromofluoromethane	102	0	70-130		%Rec	1	4/2/2022 8:29:13 AM	A86942
Surr: Toluene-d8	99.6	0	70-130		%Rec	1	4/2/2022 8:29:13 AM	A86942

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203D54**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-44
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/24/2022 10:55:00 AM
Lab ID: 2203D54-006B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.017	0.048		µg/L	5	3/30/2022 7:33:44 PM	66394

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203D54**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-44
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/24/2022 10:55:00 AM
Lab ID: 2203D54-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.028	0.016	0.064	J	mg/L	1	3/29/2022 2:30:13 AM	66409
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/29/2022 2:30:13 AM	66409
Surr: DNOP	86.3	0	42.2-138		%Rec	1	3/29/2022 2:30:13 AM	66409
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	1.1	20		µg/L	1	4/7/2022 5:52:03 PM	66423
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	4/7/2022 5:52:03 PM	66423
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	4/7/2022 5:52:03 PM	66423
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	4/7/2022 5:52:03 PM	66423
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	4/7/2022 5:52:03 PM	66423
Diethyl phthalate	ND	3.9	10		µg/L	1	4/7/2022 5:52:03 PM	66423
Dimethyl phthalate	ND	2.0	10		µg/L	1	4/7/2022 5:52:03 PM	66423
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	4/7/2022 5:52:03 PM	66423
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	4/7/2022 5:52:03 PM	66423
2-Methylphenol	ND	0.51	5.0		µg/L	1	4/7/2022 5:52:03 PM	66423
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	4/7/2022 5:52:03 PM	66423
Phenol	ND	0.33	5.0		µg/L	1	4/7/2022 5:52:03 PM	66423
Pyridine	ND	10	10		µg/L	1	4/7/2022 5:52:03 PM	66423
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	4/7/2022 5:52:03 PM	66423
Surr: 2-Fluorophenol	34.6	0	29.4-87.7		%Rec	1	4/7/2022 5:52:03 PM	66423
Surr: Phenol-d5	28.7	0	28.5-64.7		%Rec	1	4/7/2022 5:52:03 PM	66423
Surr: 2,4,6-Tribromophenol	51.1	0	18.6-129		%Rec	1	4/7/2022 5:52:03 PM	66423
Surr: Nitrobenzene-d5	49.7	0	36.9-103		%Rec	1	4/7/2022 5:52:03 PM	66423
Surr: 2-Fluorobiphenyl	40.9	0	38.1-99.9		%Rec	1	4/7/2022 5:52:03 PM	66423
Surr: 4-Terphenyl-d14	70.5	0	48-155		%Rec	1	4/7/2022 5:52:03 PM	66423
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.048	1.0		µg/L	1	4/6/2022 7:06:00 PM	R87058
Naphthalene	ND	0.034	0.10		µg/L	1	4/6/2022 7:06:00 PM	R87058
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	4/6/2022 7:06:00 PM	R87058
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	4/6/2022 7:06:00 PM	R87058
Acenaphthene	ND	0.031	0.10		µg/L	1	4/6/2022 7:06:00 PM	R87058
Fluorene	ND	0.031	0.10		µg/L	1	4/6/2022 7:06:00 PM	R87058
Phenanthrene	ND	0.057	0.10		µg/L	1	4/6/2022 7:06:00 PM	R87058
Anthracene	ND	0.034	0.10		µg/L	1	4/6/2022 7:06:00 PM	R87058
Fluoranthene	ND	0.10	0.20		µg/L	1	4/6/2022 7:06:00 PM	R87058
Pyrene	ND	0.16	0.20		µg/L	1	4/6/2022 7:06:00 PM	R87058
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	4/6/2022 7:06:00 PM	R87058
Chrysene	ND	0.024	0.10		µg/L	1	4/6/2022 7:06:00 PM	R87058
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	4/6/2022 7:06:00 PM	R87058
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	4/6/2022 7:06:00 PM	R87058

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203D54**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-44
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/24/2022 10:55:00 AM
Lab ID: 2203D54-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	53.0	0	31.6-100		%Rec	1	4/6/2022 7:06:00 PM	R87058
Surr: 2-Fluorobiphenyl	48.2	0	26.7-90.1		%Rec	1	4/6/2022 7:06:00 PM	R87058
Surr: 4-Terphenyl-d14	88.6	0	72.3-147		%Rec	1	4/6/2022 7:06:00 PM	R87058

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203D54**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-44
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/24/2022 10:55:00 AM
Lab ID: 2203D54-006D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.28	0.0016	0.0030		mg/L	1	4/6/2022 4:51:46 PM	66644
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 4:51:46 PM	66644
Cadmium	ND	0.0015	0.0020		mg/L	1	4/6/2022 4:51:46 PM	66644
Chromium	0.013	0.0021	0.0060		mg/L	1	4/6/2022 4:51:46 PM	66644
Cobalt	0.0078	0.0024	0.0060		mg/L	1	4/6/2022 4:51:46 PM	66644
Nickel	0.0042	0.0033	0.010	J	mg/L	1	4/6/2022 4:51:46 PM	66644
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 4:51:46 PM	66644
Vanadium	0.17	0.0024	0.050		mg/L	1	4/6/2022 4:51:46 PM	66644
Zinc	0.067	0.0064	0.010		mg/L	1	4/6/2022 4:51:46 PM	66644
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	3/31/2022 4:16:56 PM	66473
Arsenic	0.017	0.00013	0.0010	*	mg/L	1	3/31/2022 2:17:11 PM	66473
Lead	0.019	0.00031	0.0025	*	mg/L	5	3/31/2022 4:16:56 PM	66473
Selenium	0.016	0.00037	0.0010		mg/L	1	3/31/2022 2:17:11 PM	66473
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/28/2022 4:05:26 PM	66425

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203D54**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-44
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/24/2022 10:55:00 AM
Lab ID: 2203D54-006E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.029	0.0011	0.0020		mg/L	1	3/29/2022 3:07:16 PM	C86825
Beryllium	ND	0.00088	0.0020		mg/L	1	3/29/2022 3:07:16 PM	C86825
Cadmium	ND	0.00098	0.0020		mg/L	1	3/29/2022 3:07:16 PM	C86825
Chromium	0.0029	0.0020	0.0060	J	mg/L	1	3/29/2022 3:07:16 PM	C86825
Cobalt	ND	0.0024	0.0060		mg/L	1	3/29/2022 3:07:16 PM	C86825
Nickel	ND	0.0033	0.010		mg/L	1	4/19/2022 12:19:33 PM	A87332
Silver	ND	0.0013	0.0050		mg/L	1	3/29/2022 3:07:16 PM	C86825
Vanadium	0.13	0.0017	0.050		mg/L	1	3/29/2022 3:07:16 PM	C86825
Zinc	0.012	0.0032	0.010		mg/L	1	3/29/2022 3:07:16 PM	C86825
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/28/2022 1:56:54 PM	B86786
Arsenic	0.013	0.00012	0.0010	*	mg/L	1	3/28/2022 1:56:54 PM	B86786
Lead	0.000090	0.000057	0.00050	J	mg/L	1	3/28/2022 1:56:54 PM	B86786
Selenium	0.013	0.00034	0.0010		mg/L	1	3/28/2022 1:56:54 PM	B86786
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/29/2022 3:00:51 PM	66456

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203D54**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-24-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/24/2022
Lab ID: 2203D54-007A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **CCM**	
Gasoline Range Organics (GRO)	1.3	0.023	0.050		mg/L	1	4/1/2022 6:11:00 PM	A86911
Surr: BFB	100	0	70-130		%Rec	1	4/1/2022 6:11:00 PM	A86911
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	4/4/2022 9:27:36 PM	A86972
Toluene	ND	0.20	1.0		µg/L	1	4/2/2022 8:56:08 AM	A86942
Ethylbenzene	0.34	0.21	1.0	J	µg/L	1	4/2/2022 8:56:08 AM	A86942
Methyl tert-butyl ether (MTBE)	1400	20	50		µg/L	50	4/4/2022 9:00:39 PM	A86972
1,2,4-Trimethylbenzene	0.26	0.12	1.0	J	µg/L	1	4/2/2022 8:56:08 AM	A86942
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	4/2/2022 8:56:08 AM	A86942
1,2-Dichloroethane (EDC)	0.42	0.25	1.0	J	µg/L	1	4/2/2022 8:56:08 AM	A86942
Acetone	2.9	2.5	10	J	µg/L	1	4/2/2022 8:56:08 AM	A86942
Bromomethane	ND	0.85	3.0		µg/L	1	4/2/2022 8:56:08 AM	A86942
2-Butanone	ND	2.0	10		µg/L	1	4/2/2022 8:56:08 AM	A86942
Carbon disulfide	ND	0.59	10		µg/L	1	4/2/2022 8:56:08 AM	A86942
Chlorobenzene	ND	0.16	1.0		µg/L	1	4/2/2022 8:56:08 AM	A86942
Chloroform	ND	0.13	1.0		µg/L	1	4/2/2022 8:56:08 AM	A86942
Chloromethane	ND	0.41	3.0		µg/L	1	4/2/2022 8:56:08 AM	A86942
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	4/2/2022 8:56:08 AM	A86942
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	4/2/2022 8:56:08 AM	A86942
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	4/2/2022 8:56:08 AM	A86942
Isopropylbenzene	ND	0.18	1.0		µg/L	1	4/2/2022 8:56:08 AM	A86942
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	4/2/2022 8:56:08 AM	A86942
Methylene Chloride	ND	0.50	3.0		µg/L	1	4/2/2022 8:56:08 AM	A86942
n-Butylbenzene	ND	0.25	3.0		µg/L	1	4/2/2022 8:56:08 AM	A86942
n-Propylbenzene	ND	0.18	1.0		µg/L	1	4/2/2022 8:56:08 AM	A86942
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	4/2/2022 8:56:08 AM	A86942
Styrene	ND	0.14	1.0		µg/L	1	4/2/2022 8:56:08 AM	A86942
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	4/2/2022 8:56:08 AM	A86942
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	4/2/2022 8:56:08 AM	A86942
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	4/2/2022 8:56:08 AM	A86942
Vinyl chloride	ND	0.32	1.0		µg/L	1	4/2/2022 8:56:08 AM	A86942
Xylenes, Total	ND	0.37	1.5		µg/L	1	4/2/2022 8:56:08 AM	A86942
Surr: 1,2-Dichloroethane-d4	98.9	0	70-130		%Rec	1	4/2/2022 8:56:08 AM	A86942
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	4/2/2022 8:56:08 AM	A86942
Surr: Dibromofluoromethane	99.8	0	70-130		%Rec	1	4/2/2022 8:56:08 AM	A86942
Surr: Toluene-d8	98.9	0	70-130		%Rec	1	4/2/2022 8:56:08 AM	A86942

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203D54**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-24-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/24/2022
Lab ID: 2203D54-007B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.017	0.047		µg/L	5	3/30/2022 8:04:00 PM	66394

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203D54**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-24-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/24/2022
Lab ID: 2203D54-007C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.89	0.016	0.064		mg/L	1	3/29/2022 2:54:13 AM	66409
Motor Oil Range Organics (MRO)	0.095	0.052	0.080	B	mg/L	1	3/29/2022 2:54:13 AM	66409
Surr: DNOP	99.9	0	42.2-138		%Rec	1	3/29/2022 2:54:13 AM	66409
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	1.1	20		µg/L	1	4/7/2022 6:34:03 PM	66423
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	4/7/2022 6:34:03 PM	66423
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	4/7/2022 6:34:03 PM	66423
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	4/7/2022 6:34:03 PM	66423
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	4/7/2022 6:34:03 PM	66423
Diethyl phthalate	ND	3.9	10		µg/L	1	4/7/2022 6:34:03 PM	66423
Dimethyl phthalate	ND	2.0	10		µg/L	1	4/7/2022 6:34:03 PM	66423
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	4/7/2022 6:34:03 PM	66423
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	4/7/2022 6:34:03 PM	66423
2-Methylphenol	ND	0.51	5.0		µg/L	1	4/7/2022 6:34:03 PM	66423
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	4/7/2022 6:34:03 PM	66423
Phenol	ND	0.33	5.0		µg/L	1	4/7/2022 6:34:03 PM	66423
Pyridine	ND	10	10		µg/L	1	4/7/2022 6:34:03 PM	66423
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	4/7/2022 6:34:03 PM	66423
Surr: 2-Fluorophenol	46.4	0	29.4-87.7		%Rec	1	4/7/2022 6:34:03 PM	66423
Surr: Phenol-d5	37.0	0	28.5-64.7		%Rec	1	4/7/2022 6:34:03 PM	66423
Surr: 2,4,6-Tribromophenol	76.1	0	18.6-129		%Rec	1	4/7/2022 6:34:03 PM	66423
Surr: Nitrobenzene-d5	58.1	0	36.9-103		%Rec	1	4/7/2022 6:34:03 PM	66423
Surr: 2-Fluorobiphenyl	54.1	0	38.1-99.9		%Rec	1	4/7/2022 6:34:03 PM	66423
Surr: 4-Terphenyl-d14	89.1	0	48-155		%Rec	1	4/7/2022 6:34:03 PM	66423
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.048	1.0		µg/L	1	4/6/2022 8:47:00 PM	R87058
Naphthalene	ND	0.034	0.10		µg/L	1	4/6/2022 8:47:00 PM	R87058
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	4/6/2022 8:47:00 PM	R87058
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	4/6/2022 8:47:00 PM	R87058
Acenaphthene	ND	0.031	0.10		µg/L	1	4/6/2022 8:47:00 PM	R87058
Fluorene	ND	0.031	0.10		µg/L	1	4/6/2022 8:47:00 PM	R87058
Phenanthrene	ND	0.057	0.10		µg/L	1	4/6/2022 8:47:00 PM	R87058
Anthracene	ND	0.034	0.10		µg/L	1	4/6/2022 8:47:00 PM	R87058
Fluoranthene	ND	0.10	0.20		µg/L	1	4/6/2022 8:47:00 PM	R87058
Pyrene	ND	0.16	0.20		µg/L	1	4/6/2022 8:47:00 PM	R87058
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	4/6/2022 8:47:00 PM	R87058
Chrysene	ND	0.024	0.10		µg/L	1	4/6/2022 8:47:00 PM	R87058
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	4/6/2022 8:47:00 PM	R87058
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	4/6/2022 8:47:00 PM	R87058

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203D54**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-24-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/24/2022
Lab ID: 2203D54-007C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	54.4	0	31.6-100		%Rec	1	4/6/2022 8:47:00 PM	R87058
Surr: 2-Fluorobiphenyl	48.1	0	26.7-90.1		%Rec	1	4/6/2022 8:47:00 PM	R87058
Surr: 4-Terphenyl-d14	74.3	0	72.3-147		%Rec	1	4/6/2022 8:47:00 PM	R87058

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203D54**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-24-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/24/2022
Lab ID: 2203D54-007D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.14	0.0016	0.0030		mg/L	1	4/6/2022 4:54:36 PM	66644
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 4:54:36 PM	66644
Cadmium	ND	0.0015	0.0020		mg/L	1	4/6/2022 4:54:36 PM	66644
Chromium	ND	0.0021	0.0060		mg/L	1	4/6/2022 4:54:36 PM	66644
Cobalt	0.0052	0.0024	0.0060	J	mg/L	1	4/6/2022 4:54:36 PM	66644
Nickel	0.084	0.0033	0.010		mg/L	1	4/6/2022 4:54:36 PM	66644
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 4:54:36 PM	66644
Vanadium	ND	0.0024	0.050		mg/L	1	4/6/2022 4:54:36 PM	66644
Zinc	ND	0.0064	0.010		mg/L	1	4/6/2022 4:54:36 PM	66644
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/31/2022 2:24:31 PM	66473
Arsenic	0.00071	0.00013	0.0010	J	mg/L	1	3/31/2022 2:24:31 PM	66473
Lead	0.00088	0.000061	0.00050		mg/L	1	3/31/2022 2:24:31 PM	66473
Selenium	ND	0.00037	0.0010		mg/L	1	3/31/2022 2:24:31 PM	66473
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/28/2022 4:07:34 PM	66425

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203D54**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-24-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/24/2022
Lab ID: 2203D54-007E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.16	0.0011	0.0020		mg/L	1	3/29/2022 3:08:53 PM	C86825
Beryllium	ND	0.00088	0.0020		mg/L	1	3/29/2022 3:08:53 PM	C86825
Cadmium	ND	0.00098	0.0020		mg/L	1	3/29/2022 3:08:53 PM	C86825
Chromium	ND	0.0020	0.0060		mg/L	1	3/29/2022 3:08:53 PM	C86825
Cobalt	0.0052	0.0024	0.0060	J	mg/L	1	3/29/2022 3:08:53 PM	C86825
Nickel	0.085	0.0033	0.010		mg/L	1	4/19/2022 12:21:13 PM	A87332
Silver	ND	0.0013	0.0050		mg/L	1	3/29/2022 3:08:53 PM	C86825
Vanadium	ND	0.0017	0.050		mg/L	1	3/29/2022 3:08:53 PM	C86825
Zinc	0.0080	0.0032	0.010	J	mg/L	1	3/29/2022 3:08:53 PM	C86825
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/28/2022 1:59:36 PM	B86786
Arsenic	0.00073	0.00012	0.0010	J	mg/L	1	3/28/2022 1:59:36 PM	B86786
Lead	0.00055	0.000057	0.00050		mg/L	1	3/28/2022 1:59:36 PM	B86786
Selenium	ND	0.00034	0.0010		mg/L	1	3/28/2022 1:59:36 PM	B86786
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/29/2022 3:07:15 PM	66456

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203D54**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB-3-24-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/24/2022 10:55:00 AM
Lab ID: 2203D54-008A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	0.75	0.23	1.0	J	µg/L	1	4/2/2022 9:23:02 AM	A86942
Toluene	ND	0.20	1.0		µg/L	1	4/2/2022 9:23:02 AM	A86942
Ethylbenzene	0.25	0.21	1.0	J	µg/L	1	4/2/2022 9:23:02 AM	A86942
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	4/2/2022 9:23:02 AM	A86942
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	4/2/2022 9:23:02 AM	A86942
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	4/2/2022 9:23:02 AM	A86942
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	4/2/2022 9:23:02 AM	A86942
Acetone	ND	2.5	10		µg/L	1	4/2/2022 9:23:02 AM	A86942
Bromomethane	ND	0.85	3.0		µg/L	1	4/2/2022 9:23:02 AM	A86942
2-Butanone	6.2	2.0	10	J	µg/L	1	4/2/2022 9:23:02 AM	A86942
Carbon disulfide	ND	0.59	10		µg/L	1	4/2/2022 9:23:02 AM	A86942
Chlorobenzene	ND	0.16	1.0		µg/L	1	4/2/2022 9:23:02 AM	A86942
Chloroform	ND	0.13	1.0		µg/L	1	4/2/2022 9:23:02 AM	A86942
Chloromethane	ND	0.41	3.0		µg/L	1	4/2/2022 9:23:02 AM	A86942
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	4/2/2022 9:23:02 AM	A86942
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	4/2/2022 9:23:02 AM	A86942
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	4/2/2022 9:23:02 AM	A86942
Isopropylbenzene	ND	0.18	1.0		µg/L	1	4/2/2022 9:23:02 AM	A86942
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	4/2/2022 9:23:02 AM	A86942
Methylene Chloride	ND	0.50	3.0		µg/L	1	4/2/2022 9:23:02 AM	A86942
n-Butylbenzene	ND	0.25	3.0		µg/L	1	4/2/2022 9:23:02 AM	A86942
n-Propylbenzene	ND	0.18	1.0		µg/L	1	4/2/2022 9:23:02 AM	A86942
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	4/2/2022 9:23:02 AM	A86942
Styrene	ND	0.14	1.0		µg/L	1	4/2/2022 9:23:02 AM	A86942
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	4/2/2022 9:23:02 AM	A86942
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	4/2/2022 9:23:02 AM	A86942
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	4/2/2022 9:23:02 AM	A86942
Vinyl chloride	ND	0.32	1.0		µg/L	1	4/2/2022 9:23:02 AM	A86942
Xylenes, Total	ND	0.37	1.5		µg/L	1	4/2/2022 9:23:02 AM	A86942
Surr: 1,2-Dichloroethane-d4	99.4	0	70-130		%Rec	1	4/2/2022 9:23:02 AM	A86942
Surr: 4-Bromofluorobenzene	98.4	0	70-130		%Rec	1	4/2/2022 9:23:02 AM	A86942
Surr: Dibromofluoromethane	98.9	0	70-130		%Rec	1	4/2/2022 9:23:02 AM	A86942
Surr: Toluene-d8	96.9	0	70-130		%Rec	1	4/2/2022 9:23:02 AM	A86942

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203D54**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 1st Qtr
Collection Date:
Lab ID: 2203D54-009A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	0.57	0.23	1.0	J	µg/L	1	4/2/2022 9:50:02 AM	A86942
Toluene	ND	0.20	1.0		µg/L	1	4/2/2022 9:50:02 AM	A86942
Ethylbenzene	ND	0.21	1.0		µg/L	1	4/2/2022 9:50:02 AM	A86942
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	4/2/2022 9:50:02 AM	A86942
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	4/2/2022 9:50:02 AM	A86942
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	4/2/2022 9:50:02 AM	A86942
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	4/2/2022 9:50:02 AM	A86942
Acetone	ND	2.5	10		µg/L	1	4/2/2022 9:50:02 AM	A86942
Bromomethane	ND	0.85	3.0		µg/L	1	4/2/2022 9:50:02 AM	A86942
2-Butanone	ND	2.0	10		µg/L	1	4/2/2022 9:50:02 AM	A86942
Carbon disulfide	ND	0.59	10		µg/L	1	4/2/2022 9:50:02 AM	A86942
Chlorobenzene	ND	0.16	1.0		µg/L	1	4/2/2022 9:50:02 AM	A86942
Chloroform	0.20	0.13	1.0	J	µg/L	1	4/2/2022 9:50:02 AM	A86942
Chloromethane	ND	0.41	3.0		µg/L	1	4/2/2022 9:50:02 AM	A86942
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	4/2/2022 9:50:02 AM	A86942
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	4/2/2022 9:50:02 AM	A86942
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	4/2/2022 9:50:02 AM	A86942
Isopropylbenzene	ND	0.18	1.0		µg/L	1	4/2/2022 9:50:02 AM	A86942
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	4/2/2022 9:50:02 AM	A86942
Methylene Chloride	ND	0.50	3.0		µg/L	1	4/2/2022 9:50:02 AM	A86942
n-Butylbenzene	ND	0.25	3.0		µg/L	1	4/2/2022 9:50:02 AM	A86942
n-Propylbenzene	ND	0.18	1.0		µg/L	1	4/2/2022 9:50:02 AM	A86942
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	4/2/2022 9:50:02 AM	A86942
Styrene	ND	0.14	1.0		µg/L	1	4/2/2022 9:50:02 AM	A86942
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	4/2/2022 9:50:02 AM	A86942
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	4/2/2022 9:50:02 AM	A86942
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	4/2/2022 9:50:02 AM	A86942
Vinyl chloride	ND	0.32	1.0		µg/L	1	4/2/2022 9:50:02 AM	A86942
Xylenes, Total	ND	0.37	1.5		µg/L	1	4/2/2022 9:50:02 AM	A86942
Surr: 1,2-Dichloroethane-d4	97.0	0	70-130		%Rec	1	4/2/2022 9:50:02 AM	A86942
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	4/2/2022 9:50:02 AM	A86942
Surr: Dibromofluoromethane	98.3	0	70-130		%Rec	1	4/2/2022 9:50:02 AM	A86942
Surr: Toluene-d8	98.7	0	70-130		%Rec	1	4/2/2022 9:50:02 AM	A86942

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203D54**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 1st Qtr
Collection Date:
Lab ID: 2203D54-009B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	3/30/2022 9:19:55 PM	66394

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

ANALYTICAL REPORT

April 05, 2022

Hall Environmental Analysis Laboratory

Sample Delivery Group: L1476135

Samples Received: 03/29/2022

Project Number:

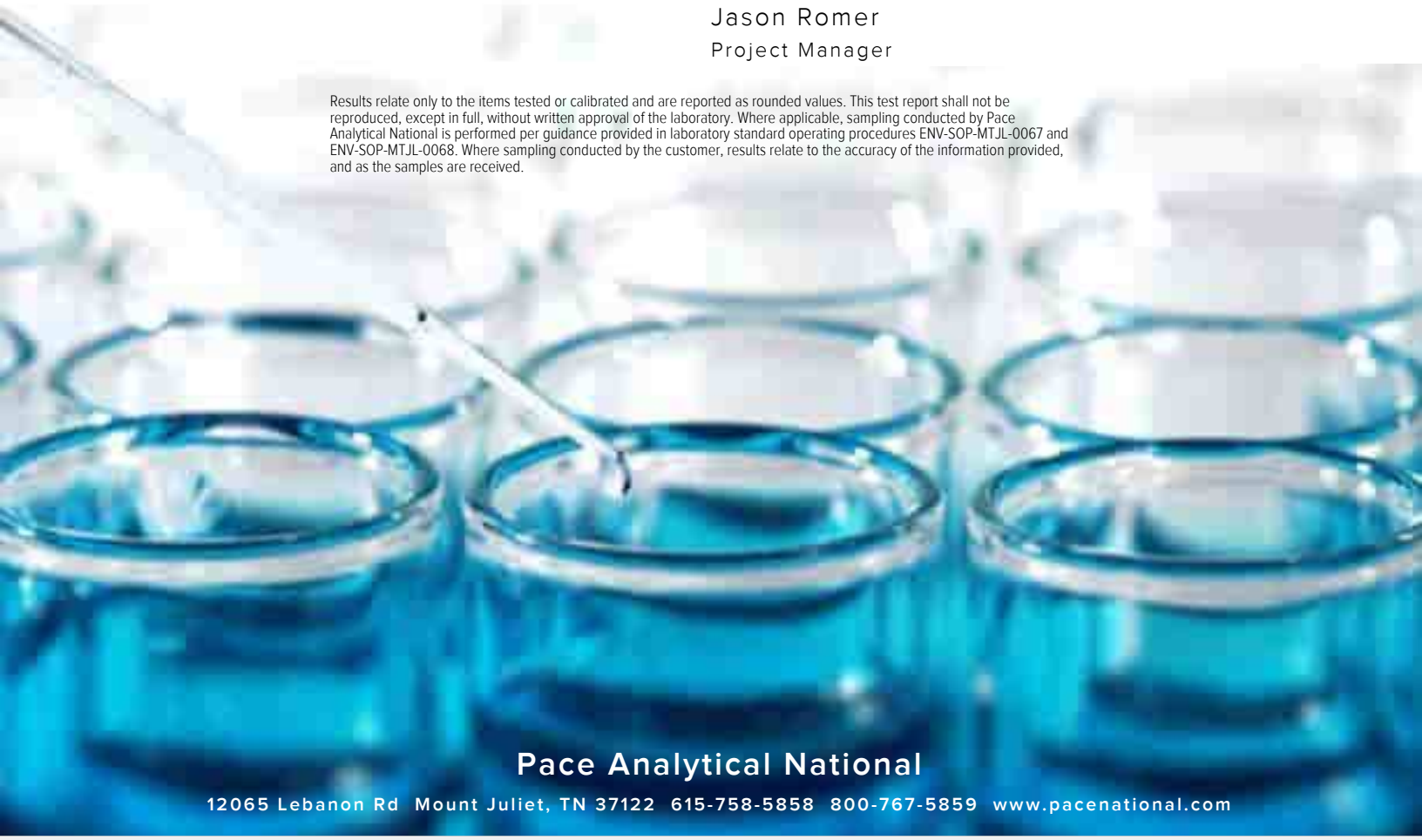
Description:

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By:

Jason Romer
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 4

Sr: Sample Results 5

2203D54-001F EB-3-24-22 L1476135-01 5

2203D54-002F OW-30 L1476135-02 6

2203D54-003F OW-64 L1476135-03 7

2203D54-004F OW-14 L1476135-04 8

2203D54-005F STP-1-NW L1476135-05 9

2203D54-006F MKTF-44 L1476135-06 10

2203D54-007F DUP-3-24-22 L1476135-07 11

Qc: Quality Control Summary 12

Wet Chemistry by Method 4500CN E-2016 12

Gl: Glossary of Terms 13

Al: Accreditations & Locations 14

Sc: Sample Chain of Custody 15

SAMPLE SUMMARY

2203D54-001F EB-3-24-22 L1476135-01 WW

Collected by	Collected date/time	Received date/time
	03/24/22 08:30	03/29/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1841516	1	04/03/22 21:12	04/05/22 10:56	LDT	Mt. Juliet, TN

2203D54-002F OW-30 L1476135-02 WW

Collected by	Collected date/time	Received date/time
	03/24/22 08:55	03/29/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1841516	1	04/03/22 21:12	04/05/22 10:58	LDT	Mt. Juliet, TN

2203D54-003F OW-64 L1476135-03 WW

Collected by	Collected date/time	Received date/time
	03/24/22 09:30	03/29/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1841516	1	04/03/22 21:12	04/05/22 11:01	LDT	Mt. Juliet, TN

2203D54-004F OW-14 L1476135-04 WW

Collected by	Collected date/time	Received date/time
	03/24/22 10:30	03/29/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1841516	1	04/03/22 21:12	04/05/22 11:04	LDT	Mt. Juliet, TN

2203D54-005F STP-1-NW L1476135-05 WW

Collected by	Collected date/time	Received date/time
	03/24/22 09:55	03/29/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1841516	1	04/03/22 21:12	04/05/22 11:05	LDT	Mt. Juliet, TN

2203D54-006F MKTF-44 L1476135-06 WW

Collected by	Collected date/time	Received date/time
	03/24/22 10:55	03/29/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1841516	1	04/03/22 21:12	04/05/22 11:06	LDT	Mt. Juliet, TN

2203D54-007F DUP-3-24-22 L1476135-07 WW

Collected by	Collected date/time	Received date/time
	03/24/22 00:00	03/29/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1841516	1	04/03/22 21:12	04/05/22 11:07	LDT	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jason Romer
Project Manager

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	04/05/2022 10:56	WG1841516

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.00562	J6	0.00500	1	04/05/2022 10:58	WG1841516

2203D94-003F GW-04
Collected date/time: 03/24/22 09:30
L1476135

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	04/05/2022 11:01	WG1841516

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	04/05/2022 11:04	WG1841516

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.0550		0.00500	1	04/05/2022 11:05	WG1841516

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	04/05/2022 11:06	WG1841516

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.00726		0.00500	1	04/05/2022 11:07	WG1841516

Method Blank (MB)

(MB) R3777668-1 04/05/22 10:52

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1476135-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1476135-01 04/05/22 10:56 • (DUP) R3777668-3 04/05/22 10:57

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

L1476156-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1476156-02 04/05/22 11:08 • (DUP) R3777668-6 04/05/22 11:10

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3777668-2 04/05/22 10:53

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.0978	97.8	87.1-120	

L1476135-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1476135-02 04/05/22 10:58 • (MS) R3777668-4 04/05/22 10:59 • (MSD) R3777668-5 04/05/22 11:00

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	0.00562	0.0955	0.103	89.9	97.4	1	90.0-110	J6		7.56	20

L1477288-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1477288-01 04/05/22 11:20 • (MS) R3777668-7 04/05/22 11:21 • (MSD) R3777668-8 04/05/22 11:22

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0702	0.0897	70.2	89.7	1	90.0-110	J6	J3 J6	24.4	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

F231

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: clients.hallenvironmental.com

SUB CONTRATOR: Pace TN	COMPANY: PACE TN	PHONE: (800) 767-5859	FAX: (615) 758-5859
ADDRESS: 12065 Lebanon Rd		ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: Mt. Juliet, TN 37122			

L1476135

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	2203D54-001F	EB-3-24-22	500AMBHDP F-NAOH	Groundw ater	3/24/2022 8:30:00 AM	1	Total Cyanide
2	2203D54-002F	OW-30	500AMBHDP F-NAOH	Groundw ater	3/24/2022 8:55:00 AM	1	Total Cyanide
3	2203D54-003F	OW-64	500AMBHDP F-NAOH	Groundw ater	3/24/2022 9:30:00 AM	1	Total Cyanide
4	2203D54-004F	OW-14	500AMBHDP F-NAOH	Groundw ater	3/24/2022 10:30:00 AM	1	Total Cyanide
5	2203D54-005F	STP-1-NW	500AMBHDP F-NAOH	Groundw ater	3/24/2022 9:55:00 AM	1	Total Cyanide
6	2203D54-006F	MKTF-44	500AMBHDP F-NAOH	Groundw ater	3/24/2022 10:55:00 AM	1	Total Cyanide
7	2203D54-007F	DUP-3-24-22	500AMBHDP F-NAOH	Groundw ater	3/24/2022	1	Total Cyanide

Sample Receipt Checklist

COC Seal Present/Intact: Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
RAD Screen <0.5 mR/hr: Y N

If Applicable
VOA Zero Headspace: Y N
Pres.Correct/Check: Y N

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By:	Date: 3/25/2022	Time: 8:20 AM	Received By:	Date: 3/29	Time: 900
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☑ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY
Temp of samples _____ °C Attempt to Cool ? _____
Comments: _____

3.7+0=3.7 BAA2

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203D54**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB-66644** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**

Client ID: **PBW** Batch ID: **66644** RunNo: **87030**

Prep Date: **4/5/2022** Analysis Date: **4/6/2022** SeqNo: **3075590** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS-66644** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**

Client ID: **BatchQC** Batch ID: **66644** RunNo: **87030**

Prep Date: **4/5/2022** Analysis Date: **4/6/2022** SeqNo: **3075594** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0019	0.0030	0.002000	0	95.8	50	150			J
Beryllium	0.0020	0.0020	0.002000	0	101	50	150			
Cadmium	0.0019	0.0020	0.002000	0	94.6	50	150			J
Chromium	0.0059	0.0060	0.006000	0	99.1	50	150			J
Cobalt	0.0066	0.0060	0.006000	0	110	50	150			
Nickel	0.0034	0.010	0.005000	0	67.0	50	150			J
Silver	0.0043	0.0050	0.005000	0	86.3	50	150			J
Vanadium	0.010	0.050	0.01000	0	104	50	150			J
Zinc	0.011	0.010	0.01000	0	105	50	150			

Sample ID: **LCS-66644** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**

Client ID: **LCSW** Batch ID: **66644** RunNo: **87030**

Prep Date: **4/5/2022** Analysis Date: **4/6/2022** SeqNo: **3075595** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0030	0.5000	0	96.8	85	115			
Beryllium	0.53	0.0020	0.5000	0	105	85	115			
Cadmium	0.48	0.0020	0.5000	0	95.3	85	115			
Chromium	0.49	0.0060	0.5000	0	98.1	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.5	85	115			
Nickel	0.47	0.010	0.5000	0	94.5	85	115			
Silver	0.097	0.0050	0.1000	0	96.7	85	115			
Vanadium	0.50	0.050	0.5000	0	99.3	85	115			
Zinc	0.49	0.010	0.5000	0	97.5	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203D54**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **A87332**	RunNo: **87332**
Prep Date:	Analysis Date: **4/19/2022**	SeqNo: **3088697** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Nickel	ND	0.010								

Sample ID: **LLLCS**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **A87332**	RunNo: **87332**
Prep Date:	Analysis Date: **4/19/2022**	SeqNo: **3088702** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0020	0.0030	0.002000	0	99.4	50	150			J
Nickel	0.0050	0.010	0.005000	0	99.7	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **A87332**	RunNo: **87332**
Prep Date:	Analysis Date: **4/19/2022**	SeqNo: **3088704** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0030	0.5000	0	103	85	115			
Nickel	0.48	0.010	0.5000	0	96.9	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203D54**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **C86825**	RunNo: **86825**
Prep Date:	Analysis Date: **3/29/2022**	SeqNo: **3066488** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **C86825**	RunNo: **86825**
Prep Date:	Analysis Date: **3/29/2022**	SeqNo: **3066489** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0025	0.0020	0.002000	0	123	50	150			
Beryllium	0.0016	0.0020	0.002000	0	80.0	50	150			J
Cadmium	0.0027	0.0020	0.002000	0	135	50	150			
Chromium	0.0062	0.0060	0.006000	0	103	50	150			
Cobalt	0.0065	0.0060	0.006000	0	108	50	150			
Silver	0.0055	0.0050	0.005000	0	109	50	150			
Vanadium	0.010	0.050	0.01000	0	104	50	150			J
Zinc	0.011	0.010	0.01000	0	107	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **C86825**	RunNo: **86825**
Prep Date:	Analysis Date: **3/29/2022**	SeqNo: **3066490** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.54	0.0020	0.5000	0	108	85	115			
Beryllium	0.53	0.0020	0.5000	0	107	85	115			
Cadmium	0.55	0.0020	0.5000	0	110	85	115			
Chromium	0.55	0.0060	0.5000	0	110	85	115			
Cobalt	0.54	0.0060	0.5000	0	108	85	115			
Silver	0.11	0.0050	0.1000	0	111	85	115			
Vanadium	0.54	0.050	0.5000	0	107	85	115			
Zinc	0.51	0.010	0.5000	0	102	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203D54**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **2203D54-002EMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **OW-30**	Batch ID: **C86825**	RunNo: **86825**
Prep Date:	Analysis Date: **3/29/2022**	SeqNo: **3066493** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.70	0.0020	0.5000	0.1550	110	70	130			
Beryllium	0.57	0.0020	0.5000	0	114	70	130			
Cadmium	0.56	0.0020	0.5000	0	112	70	130			
Chromium	0.56	0.0060	0.5000	0	112	70	130			
Cobalt	0.55	0.0060	0.5000	0.004552	109	70	130			
Silver	0.11	0.0050	0.1000	0	109	70	130			
Vanadium	0.54	0.050	0.5000	0	109	70	130			
Zinc	0.54	0.010	0.5000	0.005224	108	70	130			

Sample ID: **2203D54-002EMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **OW-30**	Batch ID: **C86825**	RunNo: **86825**
Prep Date:	Analysis Date: **3/29/2022**	SeqNo: **3066494** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.71	0.0020	0.5000	0.1550	111	70	130	0.429	20	
Beryllium	0.57	0.0020	0.5000	0	115	70	130	0.992	20	
Cadmium	0.57	0.0020	0.5000	0	113	70	130	1.21	20	
Chromium	0.57	0.0060	0.5000	0	113	70	130	0.735	20	
Cobalt	0.56	0.0060	0.5000	0.004552	111	70	130	1.50	20	
Silver	0.11	0.0050	0.1000	0	110	70	130	1.18	20	
Vanadium	0.55	0.050	0.5000	0	110	70	130	1.55	20	
Zinc	0.55	0.010	0.5000	0.005224	110	70	130	1.73	20	

Sample ID: **2203D54-001EMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB-3-24-22**	Batch ID: **C86825**	RunNo: **86825**
Prep Date:	Analysis Date: **3/29/2022**	SeqNo: **3066496** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.56	0.0020	0.5000	0	113	70	130			
Beryllium	0.57	0.0020	0.5000	0	114	70	130			
Cadmium	0.60	0.0020	0.5000	0	120	70	130			
Chromium	0.58	0.0060	0.5000	0	116	70	130			
Cobalt	0.57	0.0060	0.5000	0	115	70	130			
Silver	0.11	0.0050	0.1000	0	114	70	130			
Vanadium	0.54	0.050	0.5000	0	108	70	130			
Zinc	0.57	0.010	0.5000	0.007060	112	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203D54**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **2203D54-001EMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB-3-24-22**	Batch ID: **C86825**	RunNo: **86825**
Prep Date:	Analysis Date: **3/29/2022**	SeqNo: **3066497** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.57	0.0020	0.5000	0	113	70	130	0.479	20	
Beryllium	0.57	0.0020	0.5000	0	113	70	130	0.738	20	
Cadmium	0.59	0.0020	0.5000	0	118	70	130	1.13	20	
Chromium	0.57	0.0060	0.5000	0	115	70	130	0.714	20	
Cobalt	0.56	0.0060	0.5000	0	113	70	130	1.64	20	
Silver	0.11	0.0050	0.1000	0	113	70	130	1.35	20	
Vanadium	0.54	0.050	0.5000	0	108	70	130	0.270	20	
Zinc	0.56	0.010	0.5000	0.007060	110	70	130	1.41	20	

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A87332**	RunNo: **87332**
Prep Date:	Analysis Date: **4/19/2022**	SeqNo: **3088745** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Nickel	ND	0.010								

Sample ID: **LLLCS**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A87332**	RunNo: **87332**
Prep Date:	Analysis Date: **4/19/2022**	SeqNo: **3088746** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0020	0.0020	0.002000	0	99.4	50	150			J
Nickel	0.0050	0.010	0.005000	0	99.7	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A87332**	RunNo: **87332**
Prep Date:	Analysis Date: **4/19/2022**	SeqNo: **3088747** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0020	0.5000	0	103	85	115			
Nickel	0.48	0.010	0.5000	0	96.9	85	115			

Sample ID: **2203D54-007EMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **DUP-3-24-22**	Batch ID: **A87332**	RunNo: **87332**
Prep Date:	Analysis Date: **4/19/2022**	SeqNo: **3090051** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nickel	0.59	0.010	0.5000	0.08504	102	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203D54**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **2203D54-007EMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **DUP-3-24-22**	Batch ID: **A87332**	RunNo: **87332**
Prep Date:	Analysis Date: **4/19/2022**	SeqNo: **3090052** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nickel	0.57	0.010	0.5000	0.08504	97.7	70	130	3.64	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203D54**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**							
Client ID: **PBW**	Batch ID: **B86786**	RunNo: **86786**							
Prep Date:	Analysis Date: **3/28/2022**	SeqNo: **3064498**	Units: **mg/L**						

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**							
Client ID: **BatchQC**	Batch ID: **B86786**	RunNo: **86786**							
Prep Date:	Analysis Date: **3/28/2022**	SeqNo: **3064499**	Units: **mg/L**						

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00093	0.0010	0.001000	0	93.4	50	150			J
Arsenic	0.0011	0.0010	0.001000	0	114	50	150			
Lead	0.00056	0.00050	0.0005000	0	112	50	150			
Selenium	0.0012	0.0010	0.001000	0	116	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**							
Client ID: **LCSW**	Batch ID: **B86786**	RunNo: **86786**							
Prep Date:	Analysis Date: **3/28/2022**	SeqNo: **3064500**	Units: **mg/L**						

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	100	85	115			
Arsenic	0.026	0.0010	0.02500	0	106	85	115			
Lead	0.013	0.00050	0.01250	0	104	85	115			
Selenium	0.027	0.0010	0.02500	0	107	85	115			

Sample ID: **MB-66472**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**							
Client ID: **PBW**	Batch ID: **66472**	RunNo: **86921**							
Prep Date: **3/29/2022**	Analysis Date: **3/31/2022**	SeqNo: **3071013**	Units: **mg/L**						

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **MSLLLCS-66472**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**							
Client ID: **BatchQC**	Batch ID: **66472**	RunNo: **86921**							
Prep Date: **3/29/2022**	Analysis Date: **3/31/2022**	SeqNo: **3071014**	Units: **mg/L**						

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203D54**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **MSLLLCS-66472** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **66472** RunNo: **86921**
Prep Date: **3/29/2022** Analysis Date: **3/31/2022** SeqNo: **3071014** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0010	0.0010	0.001000	0	102	50	150			
Arsenic	0.00095	0.0010	0.001000	0	95.5	50	150			J
Lead	0.00048	0.00050	0.0005000	0	96.9	50	150			J
Selenium	0.00085	0.0010	0.001000	0	84.6	50	150			J

Sample ID: **MSLCS-66472** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **66472** RunNo: **86921**
Prep Date: **3/29/2022** Analysis Date: **3/31/2022** SeqNo: **3071015** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	101	85	115			
Arsenic	0.025	0.0010	0.02500	0	99.4	85	115			
Lead	0.012	0.00050	0.01250	0	99.0	85	115			
Selenium	0.025	0.0010	0.02500	0	101	85	115			

Sample ID: **MB-66473** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **66473** RunNo: **86921**
Prep Date: **3/29/2022** Analysis Date: **3/31/2022** SeqNo: **3071017** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **MSLLLCS-66473** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **66473** RunNo: **86921**
Prep Date: **3/29/2022** Analysis Date: **3/31/2022** SeqNo: **3071018** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00095	0.0010	0.001000	0	95.0	50	150			J
Arsenic	0.00098	0.0010	0.001000	0	97.8	50	150			J
Lead	0.00050	0.00050	0.0005000	0	99.9	50	150			J
Selenium	0.00092	0.0010	0.001000	0	91.7	50	150			J

Sample ID: **MSLCS-66473** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **66473** RunNo: **86921**
Prep Date: **3/29/2022** Analysis Date: **3/31/2022** SeqNo: **3071089** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203D54**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **MSLCS-66473**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **66473**	RunNo: **86921**
Prep Date: **3/29/2022**	Analysis Date: **3/31/2022**	SeqNo: **3071089** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	102	85	115			
Arsenic	0.025	0.0010	0.02500	0	100	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.025	0.0010	0.02500	0	102	85	115			

Sample ID: **2203D54-006DMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Metals**
Client ID: **MKTF-44**	Batch ID: **66473**	RunNo: **86921**
Prep Date: **3/29/2022**	Analysis Date: **3/31/2022**	SeqNo: **3071097** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.043	0.0010	0.02500	0.01745	101	70	130			
Selenium	0.040	0.0010	0.02500	0.01627	96.2	70	130			

Sample ID: **2203D54-006DMSDL**	SampType: **MSD**	TestCode: **EPA 200.8: Metals**
Client ID: **MKTF-44**	Batch ID: **66473**	RunNo: **86921**
Prep Date: **3/29/2022**	Analysis Date: **3/31/2022**	SeqNo: **3071098** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.043	0.0010	0.02500	0.01745	100	70	130	0.183	20	
Selenium	0.040	0.0010	0.02500	0.01627	96.8	70	130	0.411	20	

Sample ID: **2203D54-006DMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Metals**
Client ID: **MKTF-44**	Batch ID: **66473**	RunNo: **86921**
Prep Date: **3/29/2022**	Analysis Date: **3/31/2022**	SeqNo: **3071155** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.015	0.0050	0.02500	0	58.8	70	130			S
Lead	0.031	0.0025	0.01250	0.01915	93.4	70	130			

Sample ID: **2203D54-006DMSDL**	SampType: **MSD**	TestCode: **EPA 200.8: Metals**
Client ID: **MKTF-44**	Batch ID: **66473**	RunNo: **86921**
Prep Date: **3/29/2022**	Analysis Date: **3/31/2022**	SeqNo: **3071156** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.014	0.0050	0.02500	0	54.9	70	130	6.70	20	S
Lead	0.031	0.0025	0.01250	0.01915	94.1	70	130	0.289	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203D54**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B86786**	RunNo: **86786**
Prep Date:	Analysis Date: **3/28/2022**	SeqNo: **3064501** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B86786**	RunNo: **86786**
Prep Date:	Analysis Date: **3/28/2022**	SeqNo: **3064502** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00093	0.0010	0.001000	0	93.4	50	150			J
Arsenic	0.0011	0.0010	0.001000	0	114	50	150			
Lead	0.00056	0.00050	0.0005000	0	112	50	150			
Selenium	0.0012	0.0010	0.001000	0	116	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B86786**	RunNo: **86786**
Prep Date:	Analysis Date: **3/28/2022**	SeqNo: **3064503** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	100	85	115			
Arsenic	0.026	0.0010	0.02500	0	106	85	115			
Lead	0.013	0.00050	0.01250	0	104	85	115			
Selenium	0.027	0.0010	0.02500	0	107	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203D54**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB-66425**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **PBW**	Batch ID: **66425**	RunNo: **86790**							
Prep Date: **3/28/2022**	Analysis Date: **3/28/2022**	SeqNo: **3064662**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-66425**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **BatchQC**	Batch ID: **66425**	RunNo: **86790**							
Prep Date: **3/28/2022**	Analysis Date: **3/28/2022**	SeqNo: **3064663**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00016	0.00020	0.0001500	0	107	50	150			J

Sample ID: **LCS-66425**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **LCSW**	Batch ID: **66425**	RunNo: **86790**							
Prep Date: **3/28/2022**	Analysis Date: **3/28/2022**	SeqNo: **3064664**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0049	0.00020	0.005000	0	98.0	85	115			

Sample ID: **MB-66456**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **PBW**	Batch ID: **66456**	RunNo: **86816**							
Prep Date: **3/29/2022**	Analysis Date: **3/29/2022**	SeqNo: **3065977**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-66456**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **BatchQC**	Batch ID: **66456**	RunNo: **86816**							
Prep Date: **3/29/2022**	Analysis Date: **3/29/2022**	SeqNo: **3065978**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00015	0.00020	0.0001500	0	101	50	150			J

Sample ID: **LCS-66456**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **LCSW**	Batch ID: **66456**	RunNo: **86816**							
Prep Date: **3/29/2022**	Analysis Date: **3/29/2022**	SeqNo: **3065979**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0049	0.00020	0.005000	0	97.1	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203D54**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB-66394**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **66394**	RunNo: **86828**							
Prep Date: **3/29/2022**	Analysis Date: **3/29/2022**	SeqNo: **3066618**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **MB-66394**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **66394**	RunNo: **86828**							
Prep Date: **3/29/2022**	Analysis Date: **3/29/2022**	SeqNo: **3066619**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-66394**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **LCSW**	Batch ID: **66394**	RunNo: **86828**							
Prep Date: **3/29/2022**	Analysis Date: **3/29/2022**	SeqNo: **3066626**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.12	0.010	0.1000	0	116	70	130			

Sample ID: **LCSD-66394**	SampType: **LCSD**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **LCSS02**	Batch ID: **66394**	RunNo: **86828**							
Prep Date: **3/29/2022**	Analysis Date: **3/29/2022**	SeqNo: **3066627**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.12	0.010	0.1000	0	117	70	130	0.511	20	

Sample ID: **2203D54-009BMS**	SampType: **MS**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **Trip Blank**	Batch ID: **66394**	RunNo: **86860**							
Prep Date: **3/29/2022**	Analysis Date: **3/30/2022**	SeqNo: **3068584**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.077	0.0095	0.09511	0	81.0	65	135			

Sample ID: **2203D54-009BMSD**	SampType: **MSD**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **Trip Blank**	Batch ID: **66394**	RunNo: **86860**							
Prep Date: **3/29/2022**	Analysis Date: **3/30/2022**	SeqNo: **3068585**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.075	0.0094	0.09383	0	80.2	65	135	2.28	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203D54**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB-66409**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **PBW**	Batch ID: **66409**	RunNo: **86806**							
Prep Date: **3/25/2022**	Analysis Date: **3/28/2022**	SeqNo: **3065883**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.040	0.064								J
Motor Oil Range Organics (MRO)	0.099	0.080								
Surr: DNOP	0.035		0.03750		94.4	42.2	138			

Sample ID: **LCS-66409**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSW**	Batch ID: **66409**	RunNo: **86806**							
Prep Date: **3/25/2022**	Analysis Date: **3/28/2022**	SeqNo: **3065884**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.098	0.064	0.1875	0	52.3	31.7	75.4			
Surr: DNOP	0.020		0.01875		105	42.2	138			

Sample ID: **LCSD-66409**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSS02**	Batch ID: **66409**	RunNo: **86806**							
Prep Date: **3/25/2022**	Analysis Date: **3/28/2022**	SeqNo: **3065885**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.10	0.064	0.1875	0	56.0	31.7	75.4	6.85	20	
Surr: DNOP	0.020		0.01875		106	42.2	138	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203D54**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **A86911**	RunNo: **86911**
Prep Date:	Analysis Date: **4/1/2022**	SeqNo: **3070641** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.52	0.050	0.5000	0	105	80	120			
Surr: BFB	43		20.00		215	70	130			S

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **A86911**	RunNo: **86911**
Prep Date:	Analysis Date: **4/1/2022**	SeqNo: **3070642** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	20		20.00		100	70	130			

Sample ID: **2203D54-001ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **EB-3-24-22**	Batch ID: **A86911**	RunNo: **86911**
Prep Date:	Analysis Date: **4/1/2022**	SeqNo: **3071473** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.57	0.050	0.5000	0	113	70	130			
Surr: BFB	42		20.00		212	70	130			S

Sample ID: **2203D54-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **EB-3-24-22**	Batch ID: **A86911**	RunNo: **86911**
Prep Date:	Analysis Date: **4/1/2022**	SeqNo: **3071474** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.57	0.050	0.5000	0	113	70	130	0.212	20	
Surr: BFB	42		20.00		212	70	130	0	0	S

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **B86939**	RunNo: **86939**
Prep Date:	Analysis Date: **4/2/2022**	SeqNo: **3071801** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.57	0.050	0.5000	0	114	80	120			
Surr: BFB	45		20.00		225	70	130			S

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **B86939**	RunNo: **86939**
Prep Date:	Analysis Date: **4/2/2022**	SeqNo: **3071802** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203D54**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **B86939**	RunNo: **86939**
Prep Date:	Analysis Date: ***4/2/2022***	SeqNo: **3071802** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	21		20.00		105	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203D54**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **A86942**	RunNo: **86942**
Prep Date:	Analysis Date: **4/1/2022**	SeqNo: **3071888** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	90.4	70	130			
Toluene	19	1.0	20.00	0	95.2	70	130			
Chlorobenzene	18	1.0	20.00	0	89.9	70	130			
1,1-Dichloroethene	17	1.0	20.00	0	83.5	70	130			
Trichloroethene (TCE)	17	1.0	20.00	0	84.8	70	130			
Surr: 1,2-Dichloroethane-d4	9.9		10.00		99.3	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	9.5		10.00		95.2	70	130			
Surr: Toluene-d8	10		10.00		103	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **A86942**	RunNo: **86942**
Prep Date:	Analysis Date: **4/1/2022**	SeqNo: **3071912** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	0.21	1.0								J
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203D54**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **A86942**	RunNo: **86942**
Prep Date:	Analysis Date: **4/1/2022**	SeqNo: **3071912** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Styrene	ND	1.0								
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.8		10.00		97.9	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	9.6		10.00		95.8	70	130			
Surr: Toluene-d8	10		10.00		103	70	130			

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **A86972**	RunNo: **86972**
Prep Date:	Analysis Date: **4/4/2022**	SeqNo: **3073237** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	17	1.0	20.00	0	82.7	70	130			
Surr: 1,2-Dichloroethane-d4	9.7		10.00		97.3	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.2	70	130			
Surr: Dibromofluoromethane	9.4		10.00		93.6	70	130			
Surr: Toluene-d8	9.9		10.00		98.5	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **A86972**	RunNo: **86972**
Prep Date:	Analysis Date: **4/4/2022**	SeqNo: **3073250** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
Surr: 1,2-Dichloroethane-d4	9.5		10.00		94.8	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.9	70	130			
Surr: Dibromofluoromethane	9.7		10.00		96.9	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Sample ID: **100ng lcs4**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **A87014**	RunNo: **87014**
Prep Date:	Analysis Date: **4/5/2022**	SeqNo: **3074645** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203D54**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **100ng lcs4**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **A87014**	RunNo: **87014**
Prep Date:	Analysis Date: **4/5/2022**	SeqNo: **3074645** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	90.6	70	130			
Toluene	18	1.0	20.00	0	88.1	70	130			
Chlorobenzene	17	1.0	20.00	0	85.5	70	130			
1,1-Dichloroethene	17	1.0	20.00	0	86.2	70	130			
Trichloroethene (TCE)	17	1.0	20.00	0	87.3	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		101	70	130			
Surr: 4-Bromofluorobenzene	9.7		10.00		97.0	70	130			
Surr: Dibromofluoromethane	9.7		10.00		97.1	70	130			
Surr: Toluene-d8	9.5		10.00		94.9	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **A87014**	RunNo: **87014**
Prep Date:	Analysis Date: **4/5/2022**	SeqNo: **3074650** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203D54**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **A87014**	RunNo: **87014**
Prep Date:	Analysis Date: **4/5/2022**	SeqNo: **3074650** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Styrene	ND	1.0								
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.5		10.00		95.0	70	130			
Surr: 4-Bromofluorobenzene	9.6		10.00		96.5	70	130			
Surr: Dibromofluoromethane	9.8		10.00		98.2	70	130			
Surr: Toluene-d8	9.9		10.00		98.5	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203D54**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **LCS-66423**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **66423**	RunNo: **86931**
Prep Date: **3/28/2022**	Analysis Date: **4/3/2022**	SeqNo: **3071661** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	52	5.0	100.0	0	51.5	15	87.6			
Phenol	75	5.0	200.0	0	37.7	16.8	70.5			
Surr: 2-Fluorophenol	98		200.0		49.0	29.4	87.7			
Surr: Phenol-d5	77		200.0		38.3	28.5	64.7			
Surr: 2,4,6-Tribromophenol	150		200.0		73.0	18.6	129			
Surr: Nitrobenzene-d5	68		100.0		68.3	36.9	103			
Surr: 2-Fluorobiphenyl	56		100.0		55.7	38.1	99.9			
Surr: 4-Terphenyl-d14	100		100.0		100	48	155			

Sample ID: **LCSD-66423**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **66423**	RunNo: **86931**
Prep Date: **3/28/2022**	Analysis Date: **4/3/2022**	SeqNo: **3071662** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	59	5.0	100.0	0	59.2	15	87.6	13.9	30.4	
Phenol	83	5.0	200.0	0	41.6	16.8	70.5	9.78	37.2	
Surr: 2-Fluorophenol	110		200.0		52.8	29.4	87.7	0	0	
Surr: Phenol-d5	84		200.0		42.0	28.5	64.7	0	0	
Surr: 2,4,6-Tribromophenol	160		200.0		80.6	18.6	129	0	0	
Surr: Nitrobenzene-d5	73		100.0		72.8	36.9	103	0	0	
Surr: 2-Fluorobiphenyl	63		100.0		62.7	38.1	99.9	0	0	
Surr: 4-Terphenyl-d14	100		100.0		101	48	155	0	0	

Sample ID: **mb-66423**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **66423**	RunNo: **87124**
Prep Date: **3/28/2022**	Analysis Date: **4/7/2022**	SeqNo: **3080308** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	5.0								
2,4-Dinitrophenol	ND	20								
2-Methylphenol	ND	5.0								
3+4-Methylphenol	ND	5.0								
Phenol	ND	5.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203D54**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **mb-66423** SampType: **MBLK** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW** Batch ID: **66423** RunNo: **87124**
Prep Date: **3/28/2022** Analysis Date: **4/7/2022** SeqNo: **3080308** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Pyridine	ND	10								
2,4,6-Trichlorophenol	ND	5.0								
Surr: 2-Fluorophenol	91		200.0		45.4	29.4	87.7			
Surr: Phenol-d5	73		200.0		36.4	28.5	64.7			
Surr: 2,4,6-Tribromophenol	120		200.0		61.1	18.6	129			
Surr: Nitrobenzene-d5	58		100.0		58.1	36.9	103			
Surr: 2-Fluorobiphenyl	52		100.0		51.7	38.1	99.9			
Surr: 4-Terphenyl-d14	85		100.0		85.3	48	155			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203D54**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **mb-66423**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**							
Client ID: **PBW**	Batch ID: **R87058**	RunNo: **87058**							
Prep Date:	Analysis Date: **4/6/2022**	SeqNo: **3076829**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.10								
2-Methylnaphthalene	ND	0.10								
Acenaphthene	ND	0.10								
Fluorene	ND	0.10								
Phenanthrene	ND	0.10								
Anthracene	ND	0.10								
Fluoranthene	ND	0.20								
Pyrene	0.16	0.20								J
Benz(a)anthracene	ND	0.10								
Chrysene	ND	0.10								
Benzo(b)fluoranthene	ND	0.10								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	62		100.0		61.8	31.6	100			
Surr: 2,4,6-Tribromophenol	86		200.0		43.0	22	101			
Surr: 2-Fluorobiphenyl	59		100.0		58.9	26.7	90.1			
Surr: 4-Terphenyl-d14	110		100.0		113	72.3	147			E

Sample ID: **lcs-66423-lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**							
Client ID: **LCSW**	Batch ID: **R87058**	RunNo: **87058**							
Prep Date:	Analysis Date: **4/6/2022**	SeqNo: **3076830**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.68	0.10	2.000	0	34.0	20.2	48.4			
Naphthalene	1.1	0.10	2.000	0	55.0	21.3	79.9			
1-Methylnaphthalene	1.1	0.10	2.000	0	56.0	22.2	80.3			
2-Methylnaphthalene	1.1	0.10	2.000	0	57.0	20.6	80.1			
Acenaphthene	1.3	0.10	2.000	0	64.0	29.8	82.7			
Fluorene	1.5	0.10	2.000	0	73.0	33.3	86			
Phenanthrene	1.8	0.10	2.000	0	91.0	38.2	93.9			
Anthracene	1.9	0.10	2.000	0	93.0	41.1	95.6			
Fluoranthene	2.3	0.20	2.000	0	113	52.9	123			
Pyrene	2.0	0.20	2.000	0	101	51	113			
Benz(a)anthracene	2.4	0.10	2.000	0	121	51	147			
Chrysene	2.1	0.10	2.000	0	106	55.3	115			
Benzo(b)fluoranthene	2.4	0.10	2.000	0	119	44.4	136			
Indeno(1,2,3-cd)pyrene	2.5	0.30	2.000	0	127	31.4	165			
Surr: Nitrobenzene-d5	60		102.0		58.6	31.6	100			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203D54**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **lcs-66423-lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**							
Client ID: **LCSW**	Batch ID: **R87058**	RunNo: **87058**							
Prep Date:	Analysis Date: **4/6/2022**	SeqNo: **3076830**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	91		202.0		45.1	22	101			
Surr: 2-Fluorobiphenyl	60		102.0		58.9	26.7	90.1			
Surr: 4-Terphenyl-d14	110		102.0		106	72.3	147			E

Sample ID: **lcsd-66423-lf**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**							
Client ID: **LCSS02**	Batch ID: **R87058**	RunNo: **87058**							
Prep Date:	Analysis Date: **4/6/2022**	SeqNo: **3076831**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.58	0.10	2.000	0	29.0	20.2	48.4	15.9	30.1	
Naphthalene	0.90	0.10	2.000	0	45.0	21.3	79.9	20.0	25.6	
1-Methylnaphthalene	0.94	0.10	2.000	0	47.0	22.2	80.3	17.5	25	
2-Methylnaphthalene	0.96	0.10	2.000	0	48.0	20.6	80.1	17.1	25	
Acenaphthene	1.1	0.10	2.000	0	53.0	29.8	82.7	18.8	27.8	
Fluorene	1.2	0.10	2.000	0	60.0	33.3	86	19.5	26.4	
Phenanthrene	1.3	0.10	2.000	0	67.0	38.2	93.9	30.4	27.9	R
Anthracene	1.5	0.10	2.000	0	74.0	41.1	95.6	22.8	25.6	
Fluoranthene	1.9	0.20	2.000	0	94.0	52.9	123	18.4	22.8	
Pyrene	1.5	0.20	2.000	0	75.0	51	113	29.5	20	R
Benz(a)anthracene	1.9	0.10	2.000	0	93.0	51	147	26.2	24.1	R
Chrysene	1.5	0.10	2.000	0	76.0	55.3	115	33.0	20	R
Benzo(b)fluoranthene	1.7	0.10	2.000	0	84.0	44.4	136	34.5	24.5	R
Indeno(1,2,3-cd)pyrene	1.8	0.30	2.000	0	89.0	31.4	165	35.2	21.1	R
Surr: Nitrobenzene-d5	58		102.0		57.3	31.6	100	0	0	
Surr: 2,4,6-Tribromophenol	80		102.0		78.9	22	101	0	0	
Surr: 2-Fluorobiphenyl	56		202.0		27.7	26.7	90.1	0	0	
Surr: 4-Terphenyl-d14	91		102.0		89.6	72.3	147	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: **Marathon** Work Order Number: **2203D54** RcptNo: **1**

Received By: **Cheyenne Cason** **3/25/2022 7:23:00 AM** Chk

Completed By: **Sean Livingston** **3/25/2022 7:59:17 AM** Sean Livingston

Reviewed By: JR 3/25/22

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☑ No ☑ TMC 3/25/22 NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☑ No ☐ NA ☐
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: 14 - 7
(<2 or >12 unless noted)
Adjusted? yes
Checked by: TMC 3/25/22

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

16. Additional remarks: Added 3.0 mL of NaOH to sample 007R for proper pH. - TMC 3/25/22
17. Cooler Information All fraction B samples are preserved with Absentre acid NOT $Na_2S_2O_3$ - TMC 3/25/22

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.0	Good	Yes			
2	2.9	Good	Yes			
3	3.5	Good	Yes			

Released to Imaging: 4/21/2023 9:40:26 AM

Chain-of-Custody Record

Marathon Gallup Refinery

Address: 92 Giant Crossing Road
Jamestown, NM,87347
#: 808-640-1823
r Fax#:
Package:
dard ☐ Level 4 (Full Validation)
tation: ☐ Az Compliance
AC ☐ Other
(Type)

Turn-Around Time:
X Standard Rush

Project Name:
2022 GW Sampling 1st Quarter
Project #: **697-080-001**

Project Manager:
Lesli Alexander/Mackensie Swift

Sampler: Hilario Trejo
On Ice: ☒ Yes ☐ No
# of Coolers: 3
Cooler Temp(including CF): See Remark

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

e	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2203D54	Analysis Request: See Analyte List	8260B: VOC	8270C: SVOC	8270C SIM: PAH, 1,4 Dioxane	8015: TPH GRO/DRO/MRO	E200.7: Metals	E200.7: Dissolved Metals	E245.1 Mercury	E504.1: EDB	E335.4: Cyanide Subbed		537.1: PFAS	SM 5201B: BOD	410.4: COD	SM9223 E. Coli
3/24	8:30		EB-3-24-22	13		001	X	X	X	X	X	X	X	X	X	X					
3/24	8:55		OW-30	13		002	X	X	X	X	X	X	X	X	X	X					
3/24	9:30		OW-64	13		003	X	X	X	X	X	X	X	X	X	X					
3/24	~~10:35~~ 10:30		OW-14	13		004	X	X	X	X	X	X	X	X	X	X					
3/24	9:55		STP-1-NW	13		005	X	X	X	X	X	X	X	X	X	X					
3/24	10:55		MKTE-44	13		006	X	X	X	X	X	X	X	X	X	X					
3/24	—		DUP-3-24-22	13		007	X	X	X	X	X	X	X	X	X	X					
3/24	10:55		FB-3-24-22	2		008		X													
			Trip Blank per sample bottle see tester			009															

Time:	Relinquished by:	Received by:	Via:	Date	Time
3/24 1:00	Hilario Trejo	CM COUR		3/25/22	0823
Time:	Relinquished by:	Received by:	Via:	Date	Time

4.0 - 0 = 4.0
2.9 - 0 = 2.9
3.5 - 0 = 3.5

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Received by OCD: 4/21/2023 9:21:57 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

March 23, 2022

Lesli Alexander

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX (505) 632-3911

RE: 2022 Quarterly Sampling 1st Qtr OrderNo.: 2203496

Dear Lesli Alexander:

Hall Environmental Analysis Laboratory received 11 sample(s) on 3/9/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Case Narrative

WO#: **2203496**
Date: **3/23/2022**

CLIENT: Marathon
Project: 2022 Quarterly Sampling 1st Qtr

Analytical Notes Regarding EPA Method 8270:
Samples with "S" flagged surrogates were reextracted and reanalyzed to confirm the original data.

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-3-8-22
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 8:20:00 AM
Lab ID: 2203496-001A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	3/11/2022 3:36:51 PM	B86433
Toluene	ND	0.20	1.0		µg/L	1	3/11/2022 3:36:51 PM	B86433
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/11/2022 3:36:51 PM	B86433
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/11/2022 3:36:51 PM	B86433
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/11/2022 3:36:51 PM	B86433
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/11/2022 3:36:51 PM	B86433
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	3/11/2022 3:36:51 PM	B86433
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/11/2022 3:36:51 PM	B86433
Acetone	ND	2.5	10		µg/L	1	3/11/2022 3:36:51 PM	B86433
Bromomethane	ND	0.85	3.0		µg/L	1	3/11/2022 3:36:51 PM	B86433
2-Butanone	ND	2.0	10		µg/L	1	3/11/2022 3:36:51 PM	B86433
Carbon disulfide	ND	0.59	10		µg/L	1	3/11/2022 3:36:51 PM	B86433
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/11/2022 3:36:51 PM	B86433
Chloroform	ND	0.13	1.0		µg/L	1	3/11/2022 3:36:51 PM	B86433
Chloromethane	0.47	0.41	3.0	J	µg/L	1	3/11/2022 3:36:51 PM	B86433
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/11/2022 3:36:51 PM	B86433
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/11/2022 3:36:51 PM	B86433
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/11/2022 3:36:51 PM	B86433
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/11/2022 3:36:51 PM	B86433
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/11/2022 3:36:51 PM	B86433
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/11/2022 3:36:51 PM	B86433
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/11/2022 3:36:51 PM	B86433
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/11/2022 3:36:51 PM	B86433
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/11/2022 3:36:51 PM	B86433
Styrene	ND	0.14	1.0		µg/L	1	3/11/2022 3:36:51 PM	B86433
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/11/2022 3:36:51 PM	B86433
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/11/2022 3:36:51 PM	B86433
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/11/2022 3:36:51 PM	B86433
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/11/2022 3:36:51 PM	B86433
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/11/2022 3:36:51 PM	B86433
Surr: 1,2-Dichloroethane-d4	98.9	0	70-130		%Rec	1	3/11/2022 3:36:51 PM	B86433
Surr: 4-Bromofluorobenzene	95.3	0	70-130		%Rec	1	3/11/2022 3:36:51 PM	B86433
Surr: Dibromofluoromethane	95.7	0	70-130		%Rec	1	3/11/2022 3:36:51 PM	B86433
Surr: Toluene-d8	95.4	0	70-130		%Rec	1	3/11/2022 3:36:51 PM	B86433
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.040	0.012	0.050	J	mg/L	1	3/17/2022 1:26:45 PM	R86565
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	1	3/17/2022 1:26:45 PM	R86565

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-3-8-22
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 8:20:00 AM
Lab ID: 2203496-001B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0093		µg/L	1	3/15/2022 2:04:36 PM	66148

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-3-8-22
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 8:20:00 AM
Lab ID: 2203496-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	0.016	0.064		mg/L	1	3/11/2022 4:56:23 PM	66084
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/11/2022 4:56:23 PM	66084
Surr: DNOP	101	0	42.2-138		%Rec	1	3/11/2022 4:56:23 PM	66084
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	1.1	20		µg/L	1	3/15/2022 5:35:41 PM	66091
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/15/2022 5:35:41 PM	66091
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/15/2022 5:35:41 PM	66091
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/15/2022 5:35:41 PM	66091
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/15/2022 5:35:41 PM	66091
Diethyl phthalate	ND	3.9	10		µg/L	1	3/15/2022 5:35:41 PM	66091
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/15/2022 5:35:41 PM	66091
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/15/2022 5:35:41 PM	66091
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/15/2022 5:35:41 PM	66091
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/15/2022 5:35:41 PM	66091
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/15/2022 5:35:41 PM	66091
Phenol	ND	0.33	5.0		µg/L	1	3/15/2022 5:35:41 PM	66091
Pyridine	ND	10	10		µg/L	1	3/15/2022 5:35:41 PM	66091
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/15/2022 5:35:41 PM	66091
Surr: 2-Fluorophenol	29.0	0	29.4-87.7	S	%Rec	1	3/15/2022 5:35:41 PM	66091
Surr: Phenol-d5	21.9	0	28.5-64.7	S	%Rec	1	3/15/2022 5:35:41 PM	66091
Surr: 2,4,6-Tribromophenol	50.5	0	18.6-129		%Rec	1	3/15/2022 5:35:41 PM	66091
Surr: Nitrobenzene-d5	36.8	0	36.9-103	S	%Rec	1	3/15/2022 5:35:41 PM	66091
Surr: 2-Fluorobiphenyl	36.7	0	38.1-99.9	S	%Rec	1	3/15/2022 5:35:41 PM	66091
Surr: 4-Terphenyl-d14	76.3	0	48-155		%Rec	1	3/15/2022 5:35:41 PM	66091
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.048	1.0		µg/L	1	3/16/2022 3:03:00 PM	66057
Naphthalene	ND	0.034	0.10		µg/L	1	3/16/2022 3:03:00 PM	66057
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/16/2022 3:03:00 PM	66057
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/16/2022 3:03:00 PM	66057
Acenaphthene	ND	0.031	0.10		µg/L	1	3/16/2022 3:03:00 PM	66057
Fluorene	ND	0.031	0.10		µg/L	1	3/16/2022 3:03:00 PM	66057
Phenanthrene	ND	0.057	0.10		µg/L	1	3/16/2022 3:03:00 PM	66057
Anthracene	ND	0.034	0.10		µg/L	1	3/16/2022 3:03:00 PM	66057
Fluoranthene	ND	0.10	0.20		µg/L	1	3/16/2022 3:03:00 PM	66057
Pyrene	ND	0.16	0.20		µg/L	1	3/16/2022 3:03:00 PM	66057
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/16/2022 3:03:00 PM	66057
Chrysene	ND	0.024	0.10		µg/L	1	3/16/2022 3:03:00 PM	66057
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/16/2022 3:03:00 PM	66057
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/16/2022 3:03:00 PM	66057

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-3-8-22
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 8:20:00 AM
Lab ID: 2203496-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	63.5	0	31.6-100		%Rec	1	3/16/2022 3:03:00 PM	66057
Surr: 2-Fluorobiphenyl	42.0	0	26.7-90.1		%Rec	1	3/16/2022 3:03:00 PM	66057
Surr: 4-Terphenyl-d14	93.0	0	72.3-147		%Rec	1	3/16/2022 3:03:00 PM	66057

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-3-8-22
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 8:20:00 AM
Lab ID: 2203496-001D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **bcv**	
Cobalt	ND	0.00017	0.0010		mg/L	1	3/17/2022 2:56:19 PM	66191
Vanadium	ND	0.00058	0.0010		mg/L	1	3/17/2022 2:56:19 PM	66191
Antimony	ND	0.00044	0.0010		mg/L	1	3/17/2022 2:56:19 PM	66191
Arsenic	ND	0.00013	0.0010		mg/L	1	3/17/2022 2:56:19 PM	66191
Barium	ND	0.00046	0.0010		mg/L	1	3/17/2022 2:56:19 PM	66191
Beryllium	ND	0.00025	0.0010		mg/L	1	3/17/2022 2:56:19 PM	66191
Cadmium	ND	0.000080	0.00050		mg/L	1	3/17/2022 2:56:19 PM	66191
Chromium	ND	0.00056	0.0010		mg/L	1	3/17/2022 2:56:19 PM	66191
Lead	ND	0.000061	0.00050		mg/L	1	3/17/2022 2:56:19 PM	66191
Nickel	ND	0.00048	0.0010		mg/L	1	3/17/2022 2:56:19 PM	66191
Selenium	ND	0.00037	0.0010		mg/L	1	3/17/2022 2:56:19 PM	66191
Silver	ND	0.00022	0.00050		mg/L	1	3/17/2022 2:56:19 PM	66191
Zinc	ND	0.0038	0.010		mg/L	1	3/17/2022 2:56:19 PM	66191
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/16/2022 5:52:26 PM	66216

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-3-8-22
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 8:20:00 AM
Lab ID: 2203496-001E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Cobalt	ND	0.0024	0.0060		mg/L	1	3/11/2022 11:42:57 AM	C86413
Silver	ND	0.0013	0.0050		mg/L	1	3/11/2022 11:42:57 AM	C86413
Vanadium	ND	0.0017	0.050		mg/L	1	3/11/2022 11:42:57 AM	C86413
Zinc	0.0054	0.0032	0.010	J	mg/L	1	3/11/2022 11:42:57 AM	C86413
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/11/2022 12:05:27 PM	B86418
Arsenic	ND	0.00012	0.0010		mg/L	1	3/11/2022 12:05:27 PM	B86418
Barium	ND	0.00046	0.0010		mg/L	1	3/11/2022 12:05:27 PM	B86418
Beryllium	ND	0.00020	0.0010		mg/L	1	3/11/2022 12:05:27 PM	B86418
Cadmium	ND	0.000066	0.00050		mg/L	1	3/11/2022 12:05:27 PM	B86418
Chromium	0.00027	0.00014	0.0010	J	mg/L	1	3/11/2022 12:05:27 PM	B86418
Lead	ND	0.000057	0.00050		mg/L	1	3/11/2022 12:05:27 PM	B86418
Nickel	ND	0.00048	0.0010		mg/L	1	3/11/2022 12:05:27 PM	B86418
Selenium	ND	0.00034	0.0010		mg/L	1	3/16/2022 12:47:33 PM	B86537
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00010	0.000091	0.00020	J	mg/L	1	3/18/2022 1:33:45 PM	66259

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5C
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 8:20:00 AM
Lab ID: 2203496-002A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	3/11/2022 4:03:53 PM	B86433
Toluene	ND	0.20	1.0		µg/L	1	3/11/2022 4:03:53 PM	B86433
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/11/2022 4:03:53 PM	B86433
Methyl tert-butyl ether (MTBE)	24	0.39	1.0		µg/L	1	3/11/2022 4:03:53 PM	B86433
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/11/2022 4:03:53 PM	B86433
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/11/2022 4:03:53 PM	B86433
1,2-Dichloroethane (EDC)	0.68	0.25	1.0	J	µg/L	1	3/11/2022 4:03:53 PM	B86433
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/11/2022 4:03:53 PM	B86433
Acetone	ND	2.5	10		µg/L	1	3/11/2022 4:03:53 PM	B86433
Bromomethane	ND	0.85	3.0		µg/L	1	3/11/2022 4:03:53 PM	B86433
2-Butanone	ND	2.0	10		µg/L	1	3/11/2022 4:03:53 PM	B86433
Carbon disulfide	ND	0.59	10		µg/L	1	3/11/2022 4:03:53 PM	B86433
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/11/2022 4:03:53 PM	B86433
Chloroform	ND	0.13	1.0		µg/L	1	3/11/2022 4:03:53 PM	B86433
Chloromethane	ND	0.41	3.0		µg/L	1	3/11/2022 4:03:53 PM	B86433
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/11/2022 4:03:53 PM	B86433
1,1-Dichloroethane	0.82	0.27	1.0	J	µg/L	1	3/11/2022 4:03:53 PM	B86433
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/11/2022 4:03:53 PM	B86433
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/11/2022 4:03:53 PM	B86433
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/11/2022 4:03:53 PM	B86433
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/11/2022 4:03:53 PM	B86433
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/11/2022 4:03:53 PM	B86433
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/11/2022 4:03:53 PM	B86433
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/11/2022 4:03:53 PM	B86433
Styrene	ND	0.14	1.0		µg/L	1	3/11/2022 4:03:53 PM	B86433
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/11/2022 4:03:53 PM	B86433
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/11/2022 4:03:53 PM	B86433
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/11/2022 4:03:53 PM	B86433
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/11/2022 4:03:53 PM	B86433
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/11/2022 4:03:53 PM	B86433
Surr: 1,2-Dichloroethane-d4	102	0	70-130		%Rec	1	3/11/2022 4:03:53 PM	B86433
Surr: 4-Bromofluorobenzene	99.2	0	70-130		%Rec	1	3/11/2022 4:03:53 PM	B86433
Surr: Dibromofluoromethane	99.5	0	70-130		%Rec	1	3/11/2022 4:03:53 PM	B86433
Surr: Toluene-d8	95.0	0	70-130		%Rec	1	3/11/2022 4:03:53 PM	B86433
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.062	0.012	0.050		mg/L	1	3/17/2022 2:52:24 PM	R86565
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	1	3/17/2022 2:52:24 PM	R86565

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5C
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 8:20:00 AM
Lab ID: 2203496-002B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	3/15/2022 2:19:41 PM	66148

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5C
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 8:20:00 AM
Lab ID: 2203496-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **TOM**	
Diesel Range Organics (DRO)	0.069	0.016	0.064		mg/L	1	3/11/2022 5:20:31 PM	66084
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/11/2022 5:20:31 PM	66084
Surr: DNOP	91.0	0	42.2-138		%Rec	1	3/11/2022 5:20:31 PM	66084
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	1.1	20		µg/L	1	3/15/2022 6:17:57 PM	66091
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/15/2022 6:17:57 PM	66091
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/15/2022 6:17:57 PM	66091
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/15/2022 6:17:57 PM	66091
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/15/2022 6:17:57 PM	66091
Diethyl phthalate	ND	3.9	10		µg/L	1	3/15/2022 6:17:57 PM	66091
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/15/2022 6:17:57 PM	66091
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/15/2022 6:17:57 PM	66091
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/15/2022 6:17:57 PM	66091
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/15/2022 6:17:57 PM	66091
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/15/2022 6:17:57 PM	66091
Phenol	ND	0.33	5.0		µg/L	1	3/15/2022 6:17:57 PM	66091
Pyridine	ND	10	10		µg/L	1	3/15/2022 6:17:57 PM	66091
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/15/2022 6:17:57 PM	66091
Surr: 2-Fluorophenol	41.8	0	29.4-87.7		%Rec	1	3/15/2022 6:17:57 PM	66091
Surr: Phenol-d5	33.0	0	28.5-64.7		%Rec	1	3/15/2022 6:17:57 PM	66091
Surr: 2,4,6-Tribromophenol	61.5	0	18.6-129		%Rec	1	3/15/2022 6:17:57 PM	66091
Surr: Nitrobenzene-d5	49.1	0	36.9-103		%Rec	1	3/15/2022 6:17:57 PM	66091
Surr: 2-Fluorobiphenyl	52.1	0	38.1-99.9		%Rec	1	3/15/2022 6:17:57 PM	66091
Surr: 4-Terphenyl-d14	84.2	0	48-155		%Rec	1	3/15/2022 6:17:57 PM	66091
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	2.2	0.048	1.0		µg/L	1	3/16/2022 3:55:00 PM	66057
Naphthalene	ND	0.034	0.10		µg/L	1	3/16/2022 3:55:00 PM	66057
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/16/2022 3:55:00 PM	66057
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/16/2022 3:55:00 PM	66057
Acenaphthene	ND	0.031	0.10		µg/L	1	3/16/2022 3:55:00 PM	66057
Fluorene	ND	0.031	0.10		µg/L	1	3/16/2022 3:55:00 PM	66057
Phenanthrene	ND	0.057	0.10		µg/L	1	3/16/2022 3:55:00 PM	66057
Anthracene	ND	0.034	0.10		µg/L	1	3/16/2022 3:55:00 PM	66057
Fluoranthene	ND	0.10	0.20		µg/L	1	3/16/2022 3:55:00 PM	66057
Pyrene	ND	0.16	0.20		µg/L	1	3/16/2022 3:55:00 PM	66057
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/16/2022 3:55:00 PM	66057
Chrysene	ND	0.024	0.10		µg/L	1	3/16/2022 3:55:00 PM	66057
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/16/2022 3:55:00 PM	66057
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/16/2022 3:55:00 PM	66057

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5C
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 8:20:00 AM
Lab ID: 2203496-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	65.0	0	31.6-100		%Rec	1	3/16/2022 3:55:00 PM	66057
Surr: 2-Fluorobiphenyl	55.5	0	26.7-90.1		%Rec	1	3/16/2022 3:55:00 PM	66057
Surr: 4-Terphenyl-d14	102	0	72.3-147		%Rec	1	3/16/2022 3:55:00 PM	66057

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5C
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 8:20:00 AM
Lab ID: 2203496-002D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **bcv**	
Cobalt	0.011	0.00017	0.0010		mg/L	1	3/15/2022 7:13:09 PM	66151
Vanadium	0.041	0.00058	0.0010		mg/L	1	3/15/2022 7:13:09 PM	66151
Antimony	ND	0.00044	0.0010		mg/L	1	3/15/2022 7:13:09 PM	66151
Arsenic	0.0026	0.00013	0.0010		mg/L	1	3/15/2022 7:13:09 PM	66151
Barium	1.6	0.023	0.050		mg/L	50	3/17/2022 3:18:19 PM	66151
Beryllium	0.0016	0.00025	0.0010		mg/L	1	3/15/2022 7:13:09 PM	66151
Cadmium	ND	0.000080	0.00050		mg/L	1	3/15/2022 7:13:09 PM	66151
Chromium	0.045	0.00056	0.0010		mg/L	1	3/15/2022 7:13:09 PM	66151
Lead	0.014	0.000061	0.00050		mg/L	1	3/15/2022 7:13:09 PM	66151
Nickel	0.033	0.00048	0.0010		mg/L	1	3/15/2022 7:13:09 PM	66151
Selenium	0.0030	0.00037	0.0010		mg/L	1	3/15/2022 7:13:09 PM	66151
Silver	0.00030	0.00022	0.00050	J	mg/L	1	3/15/2022 7:13:09 PM	66151
Zinc	0.041	0.0038	0.010		mg/L	1	3/15/2022 7:13:09 PM	66151
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00042	0.000091	0.00020		mg/L	1	3/16/2022 6:23:26 PM	66216

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5C
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 8:20:00 AM
Lab ID: 2203496-002E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Cobalt	ND	0.0024	0.0060		mg/L	1	3/11/2022 11:47:22 AM	C86413
Silver	ND	0.0013	0.0050		mg/L	1	3/11/2022 11:47:22 AM	C86413
Vanadium	ND	0.0017	0.050		mg/L	1	3/11/2022 11:47:22 AM	C86413
Zinc	0.0073	0.0032	0.010	J	mg/L	1	3/11/2022 11:47:22 AM	C86413
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	3/11/2022 12:18:39 PM	B86418
Arsenic	0.00043	0.00012	0.0010	J	mg/L	1	3/11/2022 12:08:08 PM	B86418
Barium	0.11	0.0023	0.0050		mg/L	5	3/11/2022 12:18:39 PM	B86418
Beryllium	ND	0.00020	0.0010		mg/L	1	3/11/2022 12:08:08 PM	B86418
Cadmium	ND	0.00033	0.0025		mg/L	5	3/11/2022 12:18:39 PM	B86418
Chromium	0.00048	0.00014	0.0010	J	mg/L	1	3/11/2022 12:08:08 PM	B86418
Lead	ND	0.00028	0.0025		mg/L	5	3/11/2022 12:18:39 PM	B86418
Nickel	0.0025	0.00048	0.0010		mg/L	1	3/16/2022 12:55:37 PM	B86537
Selenium	0.00045	0.00034	0.0010	J	mg/L	1	3/16/2022 12:55:37 PM	B86537
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00014	0.000091	0.00020	J	mg/L	1	3/18/2022 1:35:53 PM	66259

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Estimated value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5B
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 9:00:00 AM
Lab ID: 2203496-003A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	3/11/2022 4:30:56 PM	B86433
Toluene	ND	0.20	1.0		µg/L	1	3/11/2022 4:30:56 PM	B86433
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/11/2022 4:30:56 PM	B86433
Methyl tert-butyl ether (MTBE)	13	0.39	1.0		µg/L	1	3/11/2022 4:30:56 PM	B86433
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/11/2022 4:30:56 PM	B86433
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/11/2022 4:30:56 PM	B86433
1,2-Dichloroethane (EDC)	0.49	0.25	1.0	J	µg/L	1	3/11/2022 4:30:56 PM	B86433
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/11/2022 4:30:56 PM	B86433
Acetone	ND	2.5	10		µg/L	1	3/11/2022 4:30:56 PM	B86433
Bromomethane	ND	0.85	3.0		µg/L	1	3/11/2022 4:30:56 PM	B86433
2-Butanone	ND	2.0	10		µg/L	1	3/11/2022 4:30:56 PM	B86433
Carbon disulfide	ND	0.59	10		µg/L	1	3/11/2022 4:30:56 PM	B86433
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/11/2022 4:30:56 PM	B86433
Chloroform	ND	0.13	1.0		µg/L	1	3/11/2022 4:30:56 PM	B86433
Chloromethane	ND	0.41	3.0		µg/L	1	3/11/2022 4:30:56 PM	B86433
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/11/2022 4:30:56 PM	B86433
1,1-Dichloroethane	0.54	0.27	1.0	J	µg/L	1	3/11/2022 4:30:56 PM	B86433
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/11/2022 4:30:56 PM	B86433
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/11/2022 4:30:56 PM	B86433
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/11/2022 4:30:56 PM	B86433
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/11/2022 4:30:56 PM	B86433
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/11/2022 4:30:56 PM	B86433
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/11/2022 4:30:56 PM	B86433
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/11/2022 4:30:56 PM	B86433
Styrene	ND	0.14	1.0		µg/L	1	3/11/2022 4:30:56 PM	B86433
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/11/2022 4:30:56 PM	B86433
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/11/2022 4:30:56 PM	B86433
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/11/2022 4:30:56 PM	B86433
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/11/2022 4:30:56 PM	B86433
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/11/2022 4:30:56 PM	B86433
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%Rec	1	3/11/2022 4:30:56 PM	B86433
Surr: 4-Bromofluorobenzene	97.3	0	70-130		%Rec	1	3/11/2022 4:30:56 PM	B86433
Surr: Dibromofluoromethane	99.9	0	70-130		%Rec	1	3/11/2022 4:30:56 PM	B86433
Surr: Toluene-d8	94.8	0	70-130		%Rec	1	3/11/2022 4:30:56 PM	B86433
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.054	0.012	0.050		mg/L	1	3/17/2022 3:21:07 PM	R86565
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	3/17/2022 3:21:07 PM	R86565

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5B
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 9:00:00 AM
Lab ID: 2203496-003B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0093		µg/L	1	3/15/2022 2:34:50 PM	66148

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5B
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 9:00:00 AM
Lab ID: 2203496-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **TOM**	
Diesel Range Organics (DRO)	0.031	0.016	0.064	J	mg/L	1	3/11/2022 5:44:36 PM	66084
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/11/2022 5:44:36 PM	66084
Surr: DNOP	92.8	0	42.2-138		%Rec	1	3/11/2022 5:44:36 PM	66084
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	1.1	20		µg/L	1	3/15/2022 7:00:10 PM	66091
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/15/2022 7:00:10 PM	66091
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/15/2022 7:00:10 PM	66091
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/15/2022 7:00:10 PM	66091
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/15/2022 7:00:10 PM	66091
Diethyl phthalate	ND	3.9	10		µg/L	1	3/15/2022 7:00:10 PM	66091
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/15/2022 7:00:10 PM	66091
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/15/2022 7:00:10 PM	66091
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/15/2022 7:00:10 PM	66091
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/15/2022 7:00:10 PM	66091
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/15/2022 7:00:10 PM	66091
Phenol	ND	0.33	5.0		µg/L	1	3/15/2022 7:00:10 PM	66091
Pyridine	ND	10	10		µg/L	1	3/15/2022 7:00:10 PM	66091
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/15/2022 7:00:10 PM	66091
Surr: 2-Fluorophenol	44.3	0	29.4-87.7		%Rec	1	3/15/2022 7:00:10 PM	66091
Surr: Phenol-d5	33.5	0	28.5-64.7		%Rec	1	3/15/2022 7:00:10 PM	66091
Surr: 2,4,6-Tribromophenol	69.2	0	18.6-129		%Rec	1	3/15/2022 7:00:10 PM	66091
Surr: Nitrobenzene-d5	50.8	0	36.9-103		%Rec	1	3/15/2022 7:00:10 PM	66091
Surr: 2-Fluorobiphenyl	54.7	0	38.1-99.9		%Rec	1	3/15/2022 7:00:10 PM	66091
Surr: 4-Terphenyl-d14	88.4	0	48-155		%Rec	1	3/15/2022 7:00:10 PM	66091
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	0.42	0.048	1.0	J	µg/L	1	3/16/2022 4:47:00 PM	66057
Naphthalene	ND	0.034	0.10		µg/L	1	3/16/2022 4:47:00 PM	66057
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/16/2022 4:47:00 PM	66057
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/16/2022 4:47:00 PM	66057
Acenaphthene	ND	0.031	0.10		µg/L	1	3/16/2022 4:47:00 PM	66057
Fluorene	ND	0.031	0.10		µg/L	1	3/16/2022 4:47:00 PM	66057
Phenanthrene	ND	0.057	0.10		µg/L	1	3/16/2022 4:47:00 PM	66057
Anthracene	ND	0.034	0.10		µg/L	1	3/16/2022 4:47:00 PM	66057
Fluoranthene	ND	0.10	0.20		µg/L	1	3/16/2022 4:47:00 PM	66057
Pyrene	ND	0.16	0.20		µg/L	1	3/16/2022 4:47:00 PM	66057
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/16/2022 4:47:00 PM	66057
Chrysene	ND	0.024	0.10		µg/L	1	3/16/2022 4:47:00 PM	66057
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/16/2022 4:47:00 PM	66057
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/16/2022 4:47:00 PM	66057

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5B
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 9:00:00 AM
Lab ID: 2203496-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	54.0	0	31.6-100		%Rec	1	3/16/2022 4:47:00 PM	66057
Surr: 2-Fluorobiphenyl	45.5	0	26.7-90.1		%Rec	1	3/16/2022 4:47:00 PM	66057
Surr: 4-Terphenyl-d14	100	0	72.3-147		%Rec	1	3/16/2022 4:47:00 PM	66057

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5B
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 9:00:00 AM
Lab ID: 2203496-003D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **bcv**	
Cobalt	0.00021	0.00017	0.0010	J	mg/L	1	3/15/2022 7:15:36 PM	66151
Vanadium	0.012	0.00058	0.0010		mg/L	1	3/15/2022 7:15:36 PM	66151
Antimony	ND	0.00044	0.0010		mg/L	1	3/15/2022 7:15:36 PM	66151
Arsenic	0.00096	0.00013	0.0010	J	mg/L	1	3/15/2022 7:15:36 PM	66151
Barium	0.26	0.0046	0.010		mg/L	10	3/17/2022 3:20:46 PM	66151
Beryllium	ND	0.00025	0.0010		mg/L	1	3/15/2022 7:15:36 PM	66151
Cadmium	ND	0.000080	0.00050		mg/L	1	3/15/2022 7:15:36 PM	66151
Chromium	0.0014	0.00056	0.0010		mg/L	1	3/15/2022 7:15:36 PM	66151
Lead	0.00015	0.000061	0.00050	J	mg/L	1	3/15/2022 7:15:36 PM	66151
Nickel	0.0029	0.00048	0.0010		mg/L	1	3/15/2022 7:15:36 PM	66151
Selenium	0.00076	0.00037	0.0010	J	mg/L	1	3/15/2022 7:15:36 PM	66151
Silver	0.00066	0.00022	0.00050		mg/L	1	3/15/2022 7:15:36 PM	66151
Zinc	ND	0.0038	0.010		mg/L	1	3/15/2022 7:15:36 PM	66151
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/16/2022 5:55:39 PM	66216

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5B
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 9:00:00 AM
Lab ID: 2203496-003E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Cobalt	ND	0.0024	0.0060		mg/L	1	3/11/2022 11:50:26 AM	C86413
Silver	ND	0.0013	0.0050		mg/L	1	3/11/2022 11:50:26 AM	C86413
Vanadium	0.0084	0.0017	0.050	J	mg/L	1	3/11/2022 11:50:26 AM	C86413
Zinc	0.0074	0.0032	0.010	J	mg/L	1	3/11/2022 11:50:26 AM	C86413
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/11/2022 12:10:49 PM	B86418
Arsenic	0.00079	0.00012	0.0010	J	mg/L	1	3/11/2022 12:10:49 PM	B86418
Barium	0.26	0.0046	0.010		mg/L	10	3/11/2022 12:21:20 PM	B86418
Beryllium	ND	0.00020	0.0010		mg/L	1	3/11/2022 12:10:49 PM	B86418
Cadmium	ND	0.000066	0.00050		mg/L	1	3/16/2022 1:00:59 PM	B86537
Chromium	0.00069	0.00014	0.0010	J	mg/L	1	3/11/2022 12:10:49 PM	B86418
Lead	0.00010	0.000057	0.00050	J	mg/L	1	3/16/2022 1:00:59 PM	B86537
Nickel	0.011	0.00048	0.0010		mg/L	1	3/16/2022 1:00:59 PM	B86537
Selenium	0.0011	0.00034	0.0010		mg/L	1	3/16/2022 1:00:59 PM	B86537
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00010	0.000091	0.00020	J	mg/L	1	3/18/2022 2:57:30 PM	66259

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-50
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 9:25:00 AM
Lab ID: 2203496-004A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	3/11/2022 4:58:00 PM	B86433
Toluene	ND	0.20	1.0		µg/L	1	3/11/2022 4:58:00 PM	B86433
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/11/2022 4:58:00 PM	B86433
Methyl tert-butyl ether (MTBE)	53	0.39	1.0		µg/L	1	3/11/2022 4:58:00 PM	B86433
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/11/2022 4:58:00 PM	B86433
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/11/2022 4:58:00 PM	B86433
1,2-Dichloroethane (EDC)	0.52	0.25	1.0	J	µg/L	1	3/11/2022 4:58:00 PM	B86433
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/11/2022 4:58:00 PM	B86433
Acetone	ND	2.5	10		µg/L	1	3/11/2022 4:58:00 PM	B86433
Bromomethane	ND	0.85	3.0		µg/L	1	3/11/2022 4:58:00 PM	B86433
2-Butanone	ND	2.0	10		µg/L	1	3/11/2022 4:58:00 PM	B86433
Carbon disulfide	ND	0.59	10		µg/L	1	3/11/2022 4:58:00 PM	B86433
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/11/2022 4:58:00 PM	B86433
Chloroform	ND	0.13	1.0		µg/L	1	3/11/2022 4:58:00 PM	B86433
Chloromethane	ND	0.41	3.0		µg/L	1	3/11/2022 4:58:00 PM	B86433
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/11/2022 4:58:00 PM	B86433
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/11/2022 4:58:00 PM	B86433
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/11/2022 4:58:00 PM	B86433
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/11/2022 4:58:00 PM	B86433
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/11/2022 4:58:00 PM	B86433
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/11/2022 4:58:00 PM	B86433
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/11/2022 4:58:00 PM	B86433
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/11/2022 4:58:00 PM	B86433
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/11/2022 4:58:00 PM	B86433
Styrene	ND	0.14	1.0		µg/L	1	3/11/2022 4:58:00 PM	B86433
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/11/2022 4:58:00 PM	B86433
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/11/2022 4:58:00 PM	B86433
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/11/2022 4:58:00 PM	B86433
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/11/2022 4:58:00 PM	B86433
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/11/2022 4:58:00 PM	B86433
Surr: 1,2-Dichloroethane-d4	99.0	0	70-130		%Rec	1	3/11/2022 4:58:00 PM	B86433
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	3/11/2022 4:58:00 PM	B86433
Surr: Dibromofluoromethane	99.1	0	70-130		%Rec	1	3/11/2022 4:58:00 PM	B86433
Surr: Toluene-d8	91.5	0	70-130		%Rec	1	3/11/2022 4:58:00 PM	B86433
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.085	0.012	0.050		mg/L	1	3/17/2022 3:49:41 PM	R86565
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	3/17/2022 3:49:41 PM	R86565

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-50
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 9:25:00 AM
Lab ID: 2203496-004B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	3/15/2022 2:50:02 PM	66148

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** OW-50
Project: 2022 Quarterly Sampling 1st Qtr **Collection Date:** 3/8/2022 9:25:00 AM
Lab ID: 2203496-004C **Matrix:** Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **TOM**	
Diesel Range Organics (DRO)	0.030	0.016	0.064	J	mg/L	1	3/11/2022 6:08:41 PM	66084
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/11/2022 6:08:41 PM	66084
Surr: DNOP	95.9	0	42.2-138		%Rec	1	3/11/2022 6:08:41 PM	66084
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	1.1	20		µg/L	1	3/15/2022 7:42:27 PM	66091
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/15/2022 7:42:27 PM	66091
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/15/2022 7:42:27 PM	66091
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/15/2022 7:42:27 PM	66091
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/15/2022 7:42:27 PM	66091
Diethyl phthalate	ND	3.9	10		µg/L	1	3/15/2022 7:42:27 PM	66091
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/15/2022 7:42:27 PM	66091
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/15/2022 7:42:27 PM	66091
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/15/2022 7:42:27 PM	66091
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/15/2022 7:42:27 PM	66091
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/15/2022 7:42:27 PM	66091
Phenol	ND	0.33	5.0		µg/L	1	3/15/2022 7:42:27 PM	66091
Pyridine	ND	10	10		µg/L	1	3/15/2022 7:42:27 PM	66091
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/15/2022 7:42:27 PM	66091
Surr: 2-Fluorophenol	0	0	29.4-87.7	S	%Rec	1	3/15/2022 7:42:27 PM	66091
Surr: Phenol-d5	1.71	0	28.5-64.7	S	%Rec	1	3/15/2022 7:42:27 PM	66091
Surr: 2,4,6-Tribromophenol	53.6	0	18.6-129		%Rec	1	3/15/2022 7:42:27 PM	66091
Surr: Nitrobenzene-d5	0	0	36.9-103	S	%Rec	1	3/15/2022 7:42:27 PM	66091
Surr: 2-Fluorobiphenyl	11.5	0	38.1-99.9	S	%Rec	1	3/15/2022 7:42:27 PM	66091
Surr: 4-Terphenyl-d14	96.2	0	48-155		%Rec	1	3/15/2022 7:42:27 PM	66091
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.048	1.0		µg/L	1	3/16/2022 5:38:00 PM	66057
Naphthalene	ND	0.034	0.10		µg/L	1	3/16/2022 5:38:00 PM	66057
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/16/2022 5:38:00 PM	66057
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/16/2022 5:38:00 PM	66057
Acenaphthene	ND	0.031	0.10		µg/L	1	3/16/2022 5:38:00 PM	66057
Fluorene	ND	0.031	0.10		µg/L	1	3/16/2022 5:38:00 PM	66057
Phenanthrene	ND	0.057	0.10		µg/L	1	3/16/2022 5:38:00 PM	66057
Anthracene	ND	0.034	0.10		µg/L	1	3/16/2022 5:38:00 PM	66057
Fluoranthene	ND	0.10	0.20		µg/L	1	3/16/2022 5:38:00 PM	66057
Pyrene	ND	0.16	0.20		µg/L	1	3/16/2022 5:38:00 PM	66057
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/16/2022 5:38:00 PM	66057
Chrysene	ND	0.024	0.10		µg/L	1	3/16/2022 5:38:00 PM	66057
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/16/2022 5:38:00 PM	66057
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/16/2022 5:38:00 PM	66057

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-50
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 9:25:00 AM
Lab ID: 2203496-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	55.0	0	31.6-100		%Rec	1	3/16/2022 5:38:00 PM	66057
Surr: 2-Fluorobiphenyl	45.5	0	26.7-90.1		%Rec	1	3/16/2022 5:38:00 PM	66057
Surr: 4-Terphenyl-d14	94.0	0	72.3-147		%Rec	1	3/16/2022 5:38:00 PM	66057

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-50
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 9:25:00 AM
Lab ID: 2203496-004D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **bcv**	
Cobalt	ND	0.00017	0.0010		mg/L	1	3/17/2022 3:10:59 PM	66191
Vanadium	ND	0.00058	0.0010		mg/L	1	3/17/2022 3:10:59 PM	66191
Antimony	ND	0.00044	0.0010		mg/L	1	3/17/2022 3:10:59 PM	66191
Arsenic	0.0022	0.00013	0.0010		mg/L	1	3/17/2022 3:10:59 PM	66191
Barium	0.055	0.0023	0.0050		mg/L	5	3/17/2022 6:12:20 PM	66191
Beryllium	ND	0.00025	0.0010		mg/L	1	3/17/2022 3:10:59 PM	66191
Cadmium	ND	0.000080	0.00050		mg/L	1	3/17/2022 3:10:59 PM	66191
Chromium	ND	0.00056	0.0010		mg/L	1	3/17/2022 3:10:59 PM	66191
Lead	ND	0.000061	0.00050		mg/L	1	3/17/2022 3:10:59 PM	66191
Nickel	0.0013	0.00048	0.0010		mg/L	1	3/17/2022 3:10:59 PM	66191
Selenium	ND	0.00037	0.0010		mg/L	1	3/17/2022 3:10:59 PM	66191
Silver	ND	0.00022	0.00050		mg/L	1	3/17/2022 3:10:59 PM	66191
Zinc	ND	0.0038	0.010		mg/L	1	3/17/2022 3:10:59 PM	66191
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/16/2022 5:57:47 PM	66216

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-50
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 9:25:00 AM
Lab ID: 2203496-004E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Cobalt	ND	0.0024	0.0060		mg/L	1	3/11/2022 11:53:40 AM	C86413
Silver	ND	0.0013	0.0050		mg/L	1	3/11/2022 11:53:40 AM	C86413
Vanadium	ND	0.0017	0.050		mg/L	1	3/11/2022 11:53:40 AM	C86413
Zinc	0.0086	0.0032	0.010	J	mg/L	1	3/11/2022 11:53:40 AM	C86413
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/11/2022 12:13:31 PM	B86418
Arsenic	0.0018	0.00012	0.0010		mg/L	1	3/11/2022 12:13:31 PM	B86418
Barium	0.050	0.00046	0.0010		mg/L	1	3/16/2022 1:11:46 PM	B86537
Beryllium	ND	0.00020	0.0010		mg/L	1	3/11/2022 12:13:31 PM	B86418
Cadmium	ND	0.000066	0.00050		mg/L	1	3/16/2022 1:11:46 PM	B86537
Chromium	0.00025	0.00014	0.0010	J	mg/L	1	3/11/2022 12:13:31 PM	B86418
Lead	ND	0.000057	0.00050		mg/L	1	3/11/2022 12:13:31 PM	B86418
Nickel	0.0011	0.00048	0.0010		mg/L	1	3/16/2022 1:11:46 PM	B86537
Selenium	ND	0.00034	0.0010		mg/L	1	3/16/2022 1:11:46 PM	B86537
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/18/2022 3:01:46 PM	66259

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-52
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 9:50:00 AM
Lab ID: 2203496-005A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	3/11/2022 5:25:02 PM	B86433
Toluene	ND	0.20	1.0		µg/L	1	3/11/2022 5:25:02 PM	B86433
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/11/2022 5:25:02 PM	B86433
Methyl tert-butyl ether (MTBE)	4.7	0.39	1.0		µg/L	1	3/11/2022 5:25:02 PM	B86433
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/11/2022 5:25:02 PM	B86433
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/11/2022 5:25:02 PM	B86433
1,2-Dichloroethane (EDC)	0.51	0.25	1.0	J	µg/L	1	3/11/2022 5:25:02 PM	B86433
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/11/2022 5:25:02 PM	B86433
Acetone	ND	2.5	10		µg/L	1	3/11/2022 5:25:02 PM	B86433
Bromomethane	ND	0.85	3.0		µg/L	1	3/11/2022 5:25:02 PM	B86433
2-Butanone	ND	2.0	10		µg/L	1	3/11/2022 5:25:02 PM	B86433
Carbon disulfide	ND	0.59	10		µg/L	1	3/11/2022 5:25:02 PM	B86433
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/11/2022 5:25:02 PM	B86433
Chloroform	ND	0.13	1.0		µg/L	1	3/11/2022 5:25:02 PM	B86433
Chloromethane	ND	0.41	3.0		µg/L	1	3/11/2022 5:25:02 PM	B86433
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/11/2022 5:25:02 PM	B86433
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/11/2022 5:25:02 PM	B86433
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/11/2022 5:25:02 PM	B86433
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/11/2022 5:25:02 PM	B86433
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/11/2022 5:25:02 PM	B86433
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/11/2022 5:25:02 PM	B86433
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/11/2022 5:25:02 PM	B86433
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/11/2022 5:25:02 PM	B86433
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/11/2022 5:25:02 PM	B86433
Styrene	ND	0.14	1.0		µg/L	1	3/11/2022 5:25:02 PM	B86433
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/11/2022 5:25:02 PM	B86433
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/11/2022 5:25:02 PM	B86433
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/11/2022 5:25:02 PM	B86433
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/11/2022 5:25:02 PM	B86433
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/11/2022 5:25:02 PM	B86433
Surr: 1,2-Dichloroethane-d4	98.0	0	70-130		%Rec	1	3/11/2022 5:25:02 PM	B86433
Surr: 4-Bromofluorobenzene	99.3	0	70-130		%Rec	1	3/11/2022 5:25:02 PM	B86433
Surr: Dibromofluoromethane	101	0	70-130		%Rec	1	3/11/2022 5:25:02 PM	B86433
Surr: Toluene-d8	95.1	0	70-130		%Rec	1	3/11/2022 5:25:02 PM	B86433
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.049	0.012	0.050	J	mg/L	1	3/17/2022 4:18:09 PM	R86565
Surr: 4-Bromofluorobenzene	105	0	70-130		%Rec	1	3/17/2022 4:18:09 PM	R86565

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-52
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 9:50:00 AM
Lab ID: 2203496-005B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	3/15/2022 3:05:08 PM	66148

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-52
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 9:50:00 AM
Lab ID: 2203496-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **TOM**	
Diesel Range Organics (DRO)	0.026	0.016	0.064	J	mg/L	1	3/11/2022 6:32:47 PM	66084
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/11/2022 6:32:47 PM	66084
Surr: DNOP	95.0	0	42.2-138		%Rec	1	3/11/2022 6:32:47 PM	66084
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	1.1	20		µg/L	1	3/15/2022 8:24:27 PM	66091
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/15/2022 8:24:27 PM	66091
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/15/2022 8:24:27 PM	66091
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/15/2022 8:24:27 PM	66091
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/15/2022 8:24:27 PM	66091
Diethyl phthalate	ND	3.9	10		µg/L	1	3/15/2022 8:24:27 PM	66091
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/15/2022 8:24:27 PM	66091
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/15/2022 8:24:27 PM	66091
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/15/2022 8:24:27 PM	66091
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/15/2022 8:24:27 PM	66091
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/15/2022 8:24:27 PM	66091
Phenol	ND	0.33	5.0		µg/L	1	3/15/2022 8:24:27 PM	66091
Pyridine	ND	10	10		µg/L	1	3/15/2022 8:24:27 PM	66091
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/15/2022 8:24:27 PM	66091
Surr: 2-Fluorophenol	1.39	0	29.4-87.7	S	%Rec	1	3/15/2022 8:24:27 PM	66091
Surr: Phenol-d5	2.12	0	28.5-64.7	S	%Rec	1	3/15/2022 8:24:27 PM	66091
Surr: 2,4,6-Tribromophenol	37.1	0	18.6-129		%Rec	1	3/15/2022 8:24:27 PM	66091
Surr: Nitrobenzene-d5	1.97	0	36.9-103	S	%Rec	1	3/15/2022 8:24:27 PM	66091
Surr: 2-Fluorobiphenyl	5.36	0	38.1-99.9	S	%Rec	1	3/15/2022 8:24:27 PM	66091
Surr: 4-Terphenyl-d14	74.6	0	48-155		%Rec	1	3/15/2022 8:24:27 PM	66091
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.048	1.0		µg/L	1	3/16/2022 6:29:00 PM	66057
Naphthalene	ND	0.034	0.10		µg/L	1	3/16/2022 6:29:00 PM	66057
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/16/2022 6:29:00 PM	66057
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/16/2022 6:29:00 PM	66057
Acenaphthene	ND	0.031	0.10		µg/L	1	3/16/2022 6:29:00 PM	66057
Fluorene	ND	0.031	0.10		µg/L	1	3/16/2022 6:29:00 PM	66057
Phenanthrene	ND	0.057	0.10		µg/L	1	3/16/2022 6:29:00 PM	66057
Anthracene	ND	0.034	0.10		µg/L	1	3/16/2022 6:29:00 PM	66057
Fluoranthene	ND	0.10	0.20		µg/L	1	3/16/2022 6:29:00 PM	66057
Pyrene	ND	0.16	0.20		µg/L	1	3/16/2022 6:29:00 PM	66057
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/16/2022 6:29:00 PM	66057
Chrysene	ND	0.024	0.10		µg/L	1	3/16/2022 6:29:00 PM	66057
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/16/2022 6:29:00 PM	66057
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/16/2022 6:29:00 PM	66057

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-52
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 9:50:00 AM
Lab ID: 2203496-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	63.5	0	31.6-100		%Rec	1	3/16/2022 6:29:00 PM	66057
Surr: 2-Fluorobiphenyl	54.0	0	26.7-90.1		%Rec	1	3/16/2022 6:29:00 PM	66057
Surr: 4-Terphenyl-d14	110	0	72.3-147		%Rec	1	3/16/2022 6:29:00 PM	66057

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-52
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 9:50:00 AM
Lab ID: 2203496-005D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **bcv**	
Cobalt	0.00048	0.00017	0.0010	J	mg/L	1	3/15/2022 7:18:02 PM	66151
Vanadium	0.0067	0.00058	0.0010		mg/L	1	3/15/2022 7:18:02 PM	66151
Antimony	ND	0.00044	0.0010		mg/L	1	3/15/2022 7:18:02 PM	66151
Arsenic	0.00075	0.00013	0.0010	J	mg/L	1	3/15/2022 7:18:02 PM	66151
Barium	0.035	0.00046	0.0010		mg/L	1	3/15/2022 7:18:02 PM	66151
Beryllium	ND	0.00025	0.0010		mg/L	1	3/15/2022 7:18:02 PM	66151
Cadmium	ND	0.000080	0.00050		mg/L	1	3/15/2022 7:18:02 PM	66151
Chromium	0.0014	0.00056	0.0010		mg/L	1	3/15/2022 7:18:02 PM	66151
Lead	0.00023	0.000061	0.00050	J	mg/L	1	3/15/2022 7:18:02 PM	66151
Nickel	0.00092	0.00048	0.0010	J	mg/L	1	3/15/2022 7:18:02 PM	66151
Selenium	ND	0.00037	0.0010		mg/L	1	3/15/2022 7:18:02 PM	66151
Silver	ND	0.00022	0.00050		mg/L	1	3/15/2022 7:18:02 PM	66151
Zinc	ND	0.0038	0.010		mg/L	1	3/15/2022 7:18:02 PM	66151
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/16/2022 6:04:11 PM	66216

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-52
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 9:50:00 AM
Lab ID: 2203496-005E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Cobalt	ND	0.0024	0.0060		mg/L	1	3/11/2022 12:01:48 PM	C86413
Silver	ND	0.0013	0.0050		mg/L	1	3/11/2022 12:01:48 PM	C86413
Vanadium	0.011	0.0017	0.050	J	mg/L	1	3/11/2022 12:01:48 PM	C86413
Zinc	0.0049	0.0032	0.010	J	mg/L	1	3/11/2022 12:01:48 PM	C86413
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/11/2022 2:37:04 PM	C86418
Arsenic	0.00079	0.00012	0.0010	J	mg/L	1	3/11/2022 2:37:04 PM	C86418
Barium	0.043	0.00046	0.0010		mg/L	1	3/11/2022 2:37:04 PM	C86418
Beryllium	ND	0.00020	0.0010		mg/L	1	3/11/2022 2:37:04 PM	C86418
Cadmium	ND	0.000066	0.00050		mg/L	1	3/16/2022 1:17:09 PM	B86537
Chromium	0.00041	0.00014	0.0010	J	mg/L	1	3/11/2022 2:37:04 PM	C86418
Lead	ND	0.000057	0.00050		mg/L	1	3/16/2022 1:17:09 PM	B86537
Nickel	0.00057	0.00048	0.0010	J	mg/L	1	3/11/2022 2:37:04 PM	C86418
Selenium	ND	0.00034	0.0010		mg/L	1	3/11/2022 2:37:04 PM	C86418
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/18/2022 3:03:55 PM	66259

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-29
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 10:15:00 AM
Lab ID: 2203496-006A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	3/11/2022 5:52:07 PM	B86433
Toluene	ND	0.20	1.0		µg/L	1	3/11/2022 5:52:07 PM	B86433
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/11/2022 5:52:07 PM	B86433
Methyl tert-butyl ether (MTBE)	3300	39	100		µg/L	100	3/14/2022 1:06:27 PM	B86459
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/11/2022 5:52:07 PM	B86433
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/11/2022 5:52:07 PM	B86433
1,2-Dichloroethane (EDC)	0.53	0.25	1.0	J	µg/L	1	3/11/2022 5:52:07 PM	B86433
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/11/2022 5:52:07 PM	B86433
Acetone	3.0	2.5	10	J	µg/L	1	3/11/2022 5:52:07 PM	B86433
Bromomethane	ND	0.85	3.0		µg/L	1	3/11/2022 5:52:07 PM	B86433
2-Butanone	ND	2.0	10		µg/L	1	3/11/2022 5:52:07 PM	B86433
Carbon disulfide	ND	0.59	10		µg/L	1	3/11/2022 5:52:07 PM	B86433
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/11/2022 5:52:07 PM	B86433
Chloroform	ND	0.13	1.0		µg/L	1	3/11/2022 5:52:07 PM	B86433
Chloromethane	ND	0.41	3.0		µg/L	1	3/11/2022 5:52:07 PM	B86433
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/11/2022 5:52:07 PM	B86433
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/11/2022 5:52:07 PM	B86433
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/11/2022 5:52:07 PM	B86433
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/11/2022 5:52:07 PM	B86433
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/11/2022 5:52:07 PM	B86433
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/11/2022 5:52:07 PM	B86433
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/11/2022 5:52:07 PM	B86433
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/11/2022 5:52:07 PM	B86433
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/11/2022 5:52:07 PM	B86433
Styrene	ND	0.14	1.0		µg/L	1	3/11/2022 5:52:07 PM	B86433
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/11/2022 5:52:07 PM	B86433
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/11/2022 5:52:07 PM	B86433
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/11/2022 5:52:07 PM	B86433
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/11/2022 5:52:07 PM	B86433
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/11/2022 5:52:07 PM	B86433
Surr: 1,2-Dichloroethane-d4	93.9	0	70-130		%Rec	1	3/11/2022 5:52:07 PM	B86433
Surr: 4-Bromofluorobenzene	97.0	0	70-130		%Rec	1	3/11/2022 5:52:07 PM	B86433
Surr: Dibromofluoromethane	96.6	0	70-130		%Rec	1	3/11/2022 5:52:07 PM	B86433
Surr: Toluene-d8	94.7	0	70-130		%Rec	1	3/11/2022 5:52:07 PM	B86433
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	3.0	0.061	0.25		mg/L	5	3/17/2022 4:46:35 PM	R86565
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	5	3/17/2022 4:46:35 PM	R86565

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-29
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 10:15:00 AM
Lab ID: 2203496-006B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0035	0.0095		µg/L	1	3/15/2022 3:20:16 PM	66148

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-29
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 10:15:00 AM
Lab ID: 2203496-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **TOM**	
Diesel Range Organics (DRO)	0.42	0.016	0.064		mg/L	1	3/11/2022 6:56:49 PM	66084
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/11/2022 6:56:49 PM	66084
Surr: DNOP	100	0	42.2-138		%Rec	1	3/11/2022 6:56:49 PM	66084
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	1.1	20		µg/L	1	3/16/2022 12:49:58 PM	66091
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/16/2022 12:49:58 PM	66091
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/16/2022 12:49:58 PM	66091
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/16/2022 12:49:58 PM	66091
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/16/2022 12:49:58 PM	66091
Diethyl phthalate	ND	3.9	10		µg/L	1	3/16/2022 12:49:58 PM	66091
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/16/2022 12:49:58 PM	66091
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/16/2022 12:49:58 PM	66091
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/16/2022 12:49:58 PM	66091
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/16/2022 12:49:58 PM	66091
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/16/2022 12:49:58 PM	66091
Phenol	ND	0.33	5.0		µg/L	1	3/16/2022 12:49:58 PM	66091
Pyridine	ND	10	10		µg/L	1	3/16/2022 12:49:58 PM	66091
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/16/2022 12:49:58 PM	66091
Surr: 2-Fluorophenol	2.05	0	29.4-87.7	S	%Rec	1	3/16/2022 12:49:58 PM	66091
Surr: Phenol-d5	6.86	0	28.5-64.7	S	%Rec	1	3/16/2022 12:49:58 PM	66091
Surr: 2,4,6-Tribromophenol	52.1	0	18.6-129		%Rec	1	3/16/2022 12:49:58 PM	66091
Surr: Nitrobenzene-d5	3.05	0	36.9-103	S	%Rec	1	3/16/2022 12:49:58 PM	66091
Surr: 2-Fluorobiphenyl	15.5	0	38.1-99.9	S	%Rec	1	3/16/2022 12:49:58 PM	66091
Surr: 4-Terphenyl-d14	78.5	0	48-155		%Rec	1	3/16/2022 12:49:58 PM	66091
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	0.64	0.048	1.0	J	µg/L	1	3/16/2022 7:19:00 PM	66057
Naphthalene	ND	0.034	0.10		µg/L	1	3/16/2022 7:19:00 PM	66057
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/16/2022 7:19:00 PM	66057
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/16/2022 7:19:00 PM	66057
Acenaphthene	ND	0.031	0.10		µg/L	1	3/16/2022 7:19:00 PM	66057
Fluorene	ND	0.031	0.10		µg/L	1	3/16/2022 7:19:00 PM	66057
Phenanthrene	ND	0.057	0.10		µg/L	1	3/16/2022 7:19:00 PM	66057
Anthracene	ND	0.034	0.10		µg/L	1	3/16/2022 7:19:00 PM	66057
Fluoranthene	ND	0.10	0.20		µg/L	1	3/16/2022 7:19:00 PM	66057
Pyrene	ND	0.16	0.20		µg/L	1	3/16/2022 7:19:00 PM	66057
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/16/2022 7:19:00 PM	66057
Chrysene	ND	0.024	0.10		µg/L	1	3/16/2022 7:19:00 PM	66057
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/16/2022 7:19:00 PM	66057
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/16/2022 7:19:00 PM	66057

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-29
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 10:15:00 AM
Lab ID: 2203496-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	56.5	0	31.6-100		%Rec	1	3/16/2022 7:19:00 PM	66057
Surr: 2-Fluorobiphenyl	45.0	0	26.7-90.1		%Rec	1	3/16/2022 7:19:00 PM	66057
Surr: 4-Terphenyl-d14	100	0	72.3-147		%Rec	1	3/16/2022 7:19:00 PM	66057

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-29
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 10:15:00 AM
Lab ID: 2203496-006D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **bcv**	
Cobalt	0.00089	0.00017	0.0010	J	mg/L	1	3/15/2022 7:25:23 PM	66151
Vanadium	0.0015	0.00058	0.0010		mg/L	1	3/17/2022 3:23:12 PM	66151
Antimony	ND	0.00044	0.0010		mg/L	1	3/15/2022 7:25:23 PM	66151
Arsenic	0.00076	0.00013	0.0010	J	mg/L	1	3/15/2022 7:25:23 PM	66151
Barium	0.10	0.0023	0.0050		mg/L	5	3/17/2022 3:25:39 PM	66151
Beryllium	ND	0.00025	0.0010		mg/L	1	3/15/2022 7:25:23 PM	66151
Cadmium	ND	0.000080	0.00050		mg/L	1	3/15/2022 7:25:23 PM	66151
Chromium	0.0017	0.00056	0.0010		mg/L	1	3/15/2022 7:25:23 PM	66151
Lead	0.00028	0.000061	0.00050	J	mg/L	1	3/15/2022 7:25:23 PM	66151
Nickel	0.027	0.00048	0.0010		mg/L	1	3/15/2022 7:25:23 PM	66151
Selenium	ND	0.00037	0.0010		mg/L	1	3/15/2022 7:25:23 PM	66151
Silver	ND	0.00022	0.00050		mg/L	1	3/15/2022 7:25:23 PM	66151
Zinc	ND	0.0038	0.010		mg/L	1	3/15/2022 7:25:23 PM	66151
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/16/2022 6:10:36 PM	66216

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-29
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 10:15:00 AM
Lab ID: 2203496-006E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Cobalt	ND	0.0024	0.0060		mg/L	1	3/11/2022 12:04:53 PM	C86413
Silver	ND	0.0013	0.0050		mg/L	1	3/11/2022 12:04:53 PM	C86413
Vanadium	ND	0.0017	0.050		mg/L	1	3/11/2022 12:04:53 PM	C86413
Zinc	0.010	0.0032	0.010		mg/L	1	3/11/2022 12:04:53 PM	C86413
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/11/2022 2:39:46 PM	C86418
Arsenic	0.00059	0.00012	0.0010	J	mg/L	1	3/11/2022 2:39:46 PM	C86418
Barium	0.092	0.0023	0.0050		mg/L	5	3/16/2022 1:22:32 PM	B86537
Beryllium	ND	0.00020	0.0010		mg/L	1	3/11/2022 2:39:46 PM	C86418
Cadmium	ND	0.00033	0.0025		mg/L	5	3/16/2022 1:22:32 PM	B86537
Chromium	0.00048	0.00014	0.0010	J	mg/L	1	3/11/2022 2:39:46 PM	C86418
Lead	ND	0.00028	0.0025		mg/L	5	3/16/2022 1:22:32 PM	B86537
Nickel	0.024	0.00048	0.0010		mg/L	1	3/11/2022 2:39:46 PM	C86418
Selenium	ND	0.00034	0.0010		mg/L	1	3/11/2022 2:39:46 PM	C86418
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/18/2022 3:10:19 PM	66259

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-43
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 10:45:00 AM
Lab ID: 2203496-007A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	3/11/2022 6:19:11 PM	B86433
Toluene	ND	0.20	1.0		µg/L	1	3/11/2022 6:19:11 PM	B86433
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/11/2022 6:19:11 PM	B86433
Methyl tert-butyl ether (MTBE)	0.51	0.39	1.0	J	µg/L	1	3/11/2022 6:19:11 PM	B86433
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/11/2022 6:19:11 PM	B86433
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/11/2022 6:19:11 PM	B86433
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	3/11/2022 6:19:11 PM	B86433
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/11/2022 6:19:11 PM	B86433
Acetone	ND	2.5	10		µg/L	1	3/11/2022 6:19:11 PM	B86433
Bromomethane	ND	0.85	3.0		µg/L	1	3/11/2022 6:19:11 PM	B86433
2-Butanone	ND	2.0	10		µg/L	1	3/11/2022 6:19:11 PM	B86433
Carbon disulfide	ND	0.59	10		µg/L	1	3/11/2022 6:19:11 PM	B86433
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/11/2022 6:19:11 PM	B86433
Chloroform	ND	0.13	1.0		µg/L	1	3/11/2022 6:19:11 PM	B86433
Chloromethane	ND	0.41	3.0		µg/L	1	3/11/2022 6:19:11 PM	B86433
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/11/2022 6:19:11 PM	B86433
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/11/2022 6:19:11 PM	B86433
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/11/2022 6:19:11 PM	B86433
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/11/2022 6:19:11 PM	B86433
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/11/2022 6:19:11 PM	B86433
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/11/2022 6:19:11 PM	B86433
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/11/2022 6:19:11 PM	B86433
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/11/2022 6:19:11 PM	B86433
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/11/2022 6:19:11 PM	B86433
Styrene	ND	0.14	1.0		µg/L	1	3/11/2022 6:19:11 PM	B86433
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/11/2022 6:19:11 PM	B86433
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/11/2022 6:19:11 PM	B86433
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/11/2022 6:19:11 PM	B86433
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/11/2022 6:19:11 PM	B86433
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/11/2022 6:19:11 PM	B86433
Surr: 1,2-Dichloroethane-d4	98.9	0	70-130		%Rec	1	3/11/2022 6:19:11 PM	B86433
Surr: 4-Bromofluorobenzene	97.3	0	70-130		%Rec	1	3/11/2022 6:19:11 PM	B86433
Surr: Dibromofluoromethane	92.1	0	70-130		%Rec	1	3/11/2022 6:19:11 PM	B86433
Surr: Toluene-d8	94.2	0	70-130		%Rec	1	3/11/2022 6:19:11 PM	B86433
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.039	0.012	0.050	J	mg/L	1	3/17/2022 5:15:11 PM	R86565
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	3/17/2022 5:15:11 PM	R86565

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-43
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 10:45:00 AM
Lab ID: 2203496-007B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0093		µg/L	1	3/15/2022 3:35:18 PM	66148

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-43
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 10:45:00 AM
Lab ID: 2203496-007C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **TOM**	
Diesel Range Organics (DRO)	0.13	0.016	0.064		mg/L	1	3/11/2022 7:20:49 PM	66084
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/11/2022 7:20:49 PM	66084
Surr: DNOP	96.5	0	42.2-138		%Rec	1	3/11/2022 7:20:49 PM	66084
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	1.1	20		µg/L	1	3/16/2022 1:31:56 PM	66091
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/16/2022 1:31:56 PM	66091
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/16/2022 1:31:56 PM	66091
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/16/2022 1:31:56 PM	66091
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/16/2022 1:31:56 PM	66091
Diethyl phthalate	ND	3.9	10		µg/L	1	3/16/2022 1:31:56 PM	66091
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/16/2022 1:31:56 PM	66091
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/16/2022 1:31:56 PM	66091
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/16/2022 1:31:56 PM	66091
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/16/2022 1:31:56 PM	66091
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/16/2022 1:31:56 PM	66091
Phenol	ND	0.33	5.0		µg/L	1	3/16/2022 1:31:56 PM	66091
Pyridine	ND	10	10		µg/L	1	3/16/2022 1:31:56 PM	66091
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/16/2022 1:31:56 PM	66091
Surr: 2-Fluorophenol	0	0	29.4-87.7	S	%Rec	1	3/16/2022 1:31:56 PM	66091
Surr: Phenol-d5	2.13	0	28.5-64.7	S	%Rec	1	3/16/2022 1:31:56 PM	66091
Surr: 2,4,6-Tribromophenol	2.33	0	18.6-129	S	%Rec	1	3/16/2022 1:31:56 PM	66091
Surr: Nitrobenzene-d5	0	0	36.9-103	S	%Rec	1	3/16/2022 1:31:56 PM	66091
Surr: 2-Fluorobiphenyl	2.98	0	38.1-99.9	S	%Rec	1	3/16/2022 1:31:56 PM	66091
Surr: 4-Terphenyl-d14	77.7	0	48-155		%Rec	1	3/16/2022 1:31:56 PM	66091
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.048	1.0		µg/L	1	3/16/2022 9:08:00 PM	66057
Naphthalene	ND	0.034	0.10		µg/L	1	3/16/2022 9:08:00 PM	66057
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/16/2022 9:08:00 PM	66057
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/16/2022 9:08:00 PM	66057
Acenaphthene	ND	0.031	0.10		µg/L	1	3/16/2022 9:08:00 PM	66057
Fluorene	ND	0.031	0.10		µg/L	1	3/16/2022 9:08:00 PM	66057
Phenanthrene	ND	0.057	0.10		µg/L	1	3/16/2022 9:08:00 PM	66057
Anthracene	ND	0.034	0.10		µg/L	1	3/16/2022 9:08:00 PM	66057
Fluoranthene	ND	0.10	0.20		µg/L	1	3/16/2022 9:08:00 PM	66057
Pyrene	ND	0.16	0.20		µg/L	1	3/16/2022 9:08:00 PM	66057
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/16/2022 9:08:00 PM	66057
Chrysene	ND	0.024	0.10		µg/L	1	3/16/2022 9:08:00 PM	66057
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/16/2022 9:08:00 PM	66057
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/16/2022 9:08:00 PM	66057

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-43
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 10:45:00 AM
Lab ID: 2203496-007C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	63.5	0	31.6-100		%Rec	1	3/16/2022 9:08:00 PM	66057
Surr: 2-Fluorobiphenyl	57.0	0	26.7-90.1		%Rec	1	3/16/2022 9:08:00 PM	66057
Surr: 4-Terphenyl-d14	104	0	72.3-147		%Rec	1	3/16/2022 9:08:00 PM	66057

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-43
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 10:45:00 AM
Lab ID: 2203496-007D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **bcv**	
Cobalt	0.0021	0.0017	0.010	J	mg/L	10	3/17/2022 3:28:05 PM	66151
Vanadium	ND	0.0058	0.010		mg/L	10	3/17/2022 3:28:05 PM	66151
Antimony	ND	0.0044	0.010		mg/L	10	3/17/2022 3:28:05 PM	66151
Arsenic	0.0028	0.0013	0.010	J	mg/L	10	3/17/2022 3:28:05 PM	66151
Barium	0.060	0.0046	0.010		mg/L	10	3/17/2022 3:28:05 PM	66151
Beryllium	ND	0.0025	0.010		mg/L	10	3/17/2022 3:28:05 PM	66151
Cadmium	ND	0.00080	0.0050		mg/L	10	3/17/2022 3:28:05 PM	66151
Chromium	ND	0.0056	0.010		mg/L	10	3/17/2022 3:28:05 PM	66151
Lead	0.0015	0.00061	0.0050	J	mg/L	10	3/17/2022 3:28:05 PM	66151
Nickel	0.0082	0.0048	0.010	J	mg/L	10	3/17/2022 3:28:05 PM	66151
Selenium	ND	0.0037	0.010		mg/L	10	3/17/2022 3:28:05 PM	66151
Silver	ND	0.0022	0.0050		mg/L	10	3/17/2022 3:28:05 PM	66151
Zinc	ND	0.038	0.10		mg/L	10	3/17/2022 3:28:05 PM	66151
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/16/2022 6:12:44 PM	66216

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-43
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 10:45:00 AM
Lab ID: 2203496-007E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Cobalt	0.023	0.012	0.030	J	mg/L	5	3/11/2022 12:13:33 PM	C86413
Silver	ND	0.0063	0.025		mg/L	5	3/11/2022 12:13:33 PM	C86413
Vanadium	ND	0.0086	0.25		mg/L	5	3/11/2022 12:13:33 PM	C86413
Zinc	0.020	0.016	0.050	J	mg/L	5	3/11/2022 12:13:33 PM	C86413
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0089	0.020		mg/L	20	3/21/2022 4:30:49 PM	A86624
Arsenic	ND	0.0024	0.020		mg/L	20	3/18/2022 1:30:57 PM	B86600
Barium	0.052	0.0092	0.020		mg/L	20	3/18/2022 1:30:57 PM	B86600
Beryllium	ND	0.0040	0.020		mg/L	20	3/18/2022 1:30:57 PM	B86600
Cadmium	0.0030	0.0013	0.010	J	mg/L	20	3/18/2022 1:30:57 PM	B86600
Chromium	ND	0.0028	0.020		mg/L	20	3/18/2022 1:30:57 PM	B86600
Lead	ND	0.0011	0.010		mg/L	20	3/18/2022 1:30:57 PM	B86600
Nickel	ND	0.0095	0.020		mg/L	20	3/18/2022 1:30:57 PM	B86600
Selenium	ND	0.0069	0.020		mg/L	20	3/18/2022 1:30:57 PM	B86600
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/18/2022 3:12:28 PM	66259

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-10
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 11:00:00 AM
Lab ID: 2203496-008A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	3/11/2022 6:46:13 PM	B86433
Toluene	ND	0.20	1.0		µg/L	1	3/11/2022 6:46:13 PM	B86433
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/11/2022 6:46:13 PM	B86433
Methyl tert-butyl ether (MTBE)	5.7	0.39	1.0		µg/L	1	3/11/2022 6:46:13 PM	B86433
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/11/2022 6:46:13 PM	B86433
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/11/2022 6:46:13 PM	B86433
1,2-Dichloroethane (EDC)	0.51	0.25	1.0	J	µg/L	1	3/11/2022 6:46:13 PM	B86433
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/11/2022 6:46:13 PM	B86433
Acetone	ND	2.5	10		µg/L	1	3/11/2022 6:46:13 PM	B86433
Bromomethane	ND	0.85	3.0		µg/L	1	3/11/2022 6:46:13 PM	B86433
2-Butanone	ND	2.0	10		µg/L	1	3/11/2022 6:46:13 PM	B86433
Carbon disulfide	ND	0.59	10		µg/L	1	3/11/2022 6:46:13 PM	B86433
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/11/2022 6:46:13 PM	B86433
Chloroform	ND	0.13	1.0		µg/L	1	3/11/2022 6:46:13 PM	B86433
Chloromethane	ND	0.41	3.0		µg/L	1	3/11/2022 6:46:13 PM	B86433
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/11/2022 6:46:13 PM	B86433
1,1-Dichloroethane	0.73	0.27	1.0	J	µg/L	1	3/11/2022 6:46:13 PM	B86433
1,1-Dichloroethene	0.47	0.20	1.0	J	µg/L	1	3/11/2022 6:46:13 PM	B86433
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/11/2022 6:46:13 PM	B86433
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/11/2022 6:46:13 PM	B86433
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/11/2022 6:46:13 PM	B86433
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/11/2022 6:46:13 PM	B86433
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/11/2022 6:46:13 PM	B86433
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/11/2022 6:46:13 PM	B86433
Styrene	ND	0.14	1.0		µg/L	1	3/11/2022 6:46:13 PM	B86433
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/11/2022 6:46:13 PM	B86433
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/11/2022 6:46:13 PM	B86433
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/11/2022 6:46:13 PM	B86433
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/11/2022 6:46:13 PM	B86433
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/11/2022 6:46:13 PM	B86433
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%Rec	1	3/11/2022 6:46:13 PM	B86433
Surr: 4-Bromofluorobenzene	98.0	0	70-130		%Rec	1	3/11/2022 6:46:13 PM	B86433
Surr: Dibromofluoromethane	98.7	0	70-130		%Rec	1	3/11/2022 6:46:13 PM	B86433
Surr: Toluene-d8	94.7	0	70-130		%Rec	1	3/11/2022 6:46:13 PM	B86433
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.042	0.012	0.050	J	mg/L	1	3/17/2022 5:43:45 PM	R86565
Surr: 4-Bromofluorobenzene	99.3	0	70-130		%Rec	1	3/17/2022 5:43:45 PM	R86565

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-10
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 11:00:00 AM
Lab ID: 2203496-008B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0035	0.0095		µg/L	1	3/15/2022 3:50:25 PM	66148

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-10
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 11:00:00 AM
Lab ID: 2203496-008C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **TOM**	
Diesel Range Organics (DRO)	0.080	0.016	0.064		mg/L	1	3/11/2022 7:44:51 PM	66084
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/11/2022 7:44:51 PM	66084
Surr: DNOP	101	0	42.2-138		%Rec	1	3/11/2022 7:44:51 PM	66084
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	1.1	20		µg/L	1	3/16/2022 2:14:27 PM	66091
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/16/2022 2:14:27 PM	66091
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/16/2022 2:14:27 PM	66091
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/16/2022 2:14:27 PM	66091
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/16/2022 2:14:27 PM	66091
Diethyl phthalate	ND	3.9	10		µg/L	1	3/16/2022 2:14:27 PM	66091
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/16/2022 2:14:27 PM	66091
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/16/2022 2:14:27 PM	66091
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/16/2022 2:14:27 PM	66091
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/16/2022 2:14:27 PM	66091
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/16/2022 2:14:27 PM	66091
Phenol	ND	0.33	5.0		µg/L	1	3/16/2022 2:14:27 PM	66091
Pyridine	ND	10	10		µg/L	1	3/16/2022 2:14:27 PM	66091
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/16/2022 2:14:27 PM	66091
Surr: 2-Fluorophenol	0	0	29.4-87.7	S	%Rec	1	3/16/2022 2:14:27 PM	66091
Surr: Phenol-d5	1.31	0	28.5-64.7	S	%Rec	1	3/16/2022 2:14:27 PM	66091
Surr: 2,4,6-Tribromophenol	37.8	0	18.6-129		%Rec	1	3/16/2022 2:14:27 PM	66091
Surr: Nitrobenzene-d5	0	0	36.9-103	S	%Rec	1	3/16/2022 2:14:27 PM	66091
Surr: 2-Fluorobiphenyl	3.37	0	38.1-99.9	S	%Rec	1	3/16/2022 2:14:27 PM	66091
Surr: 4-Terphenyl-d14	81.4	0	48-155		%Rec	1	3/16/2022 2:14:27 PM	66091
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	1.3	0.048	1.0		µg/L	1	3/16/2022 9:56:00 PM	66057
Naphthalene	ND	0.034	0.10		µg/L	1	3/16/2022 9:56:00 PM	66057
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/16/2022 9:56:00 PM	66057
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/16/2022 9:56:00 PM	66057
Acenaphthene	ND	0.031	0.10		µg/L	1	3/16/2022 9:56:00 PM	66057
Fluorene	ND	0.031	0.10		µg/L	1	3/16/2022 9:56:00 PM	66057
Phenanthrene	ND	0.057	0.10		µg/L	1	3/16/2022 9:56:00 PM	66057
Anthracene	ND	0.034	0.10		µg/L	1	3/16/2022 9:56:00 PM	66057
Fluoranthene	ND	0.10	0.20		µg/L	1	3/16/2022 9:56:00 PM	66057
Pyrene	ND	0.16	0.20		µg/L	1	3/16/2022 9:56:00 PM	66057
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/16/2022 9:56:00 PM	66057
Chrysene	ND	0.024	0.10		µg/L	1	3/16/2022 9:56:00 PM	66057
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/16/2022 9:56:00 PM	66057
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/16/2022 9:56:00 PM	66057

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-10
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 11:00:00 AM
Lab ID: 2203496-008C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	58.0	0	31.6-100		%Rec	1	3/16/2022 9:56:00 PM	66057
Surr: 2-Fluorobiphenyl	41.5	0	26.7-90.1		%Rec	1	3/16/2022 9:56:00 PM	66057
Surr: 4-Terphenyl-d14	102	0	72.3-147		%Rec	1	3/16/2022 9:56:00 PM	66057

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-10
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 11:00:00 AM
Lab ID: 2203496-008D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **bcv**	
Cobalt	ND	0.00017	0.0010		mg/L	1	3/17/2022 3:15:53 PM	66191
Vanadium	0.0080	0.00058	0.0010		mg/L	1	3/17/2022 3:15:53 PM	66191
Antimony	ND	0.00044	0.0010		mg/L	1	3/17/2022 3:15:53 PM	66191
Arsenic	0.00065	0.00013	0.0010	J	mg/L	1	3/17/2022 3:15:53 PM	66191
Barium	0.049	0.00046	0.0010		mg/L	1	3/17/2022 3:15:53 PM	66191
Beryllium	ND	0.00025	0.0010		mg/L	1	3/17/2022 3:15:53 PM	66191
Cadmium	ND	0.000080	0.00050		mg/L	1	3/17/2022 3:15:53 PM	66191
Chromium	ND	0.00056	0.0010		mg/L	1	3/17/2022 3:15:53 PM	66191
Lead	0.00011	0.000061	0.00050	J	mg/L	1	3/17/2022 3:15:53 PM	66191
Nickel	0.0012	0.00048	0.0010		mg/L	1	3/17/2022 3:15:53 PM	66191
Selenium	0.010	0.00037	0.0010		mg/L	1	3/17/2022 3:15:53 PM	66191
Silver	ND	0.00022	0.00050		mg/L	1	3/17/2022 3:15:53 PM	66191
Zinc	ND	0.0038	0.010		mg/L	1	3/17/2022 3:15:53 PM	66191
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/16/2022 6:14:53 PM	66216

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-10
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 11:00:00 AM
Lab ID: 2203496-008E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Cobalt	0.0032	0.0024	0.0060	J	mg/L	1	3/11/2022 12:15:11 PM	C86413
Silver	ND	0.0013	0.0050		mg/L	1	3/11/2022 12:15:11 PM	C86413
Vanadium	0.0051	0.0017	0.050	J	mg/L	1	3/11/2022 12:15:11 PM	C86413
Zinc	0.0094	0.0032	0.010	J	mg/L	1	3/11/2022 12:15:11 PM	C86413
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	3/21/2022 4:33:30 PM	A86624
Arsenic	ND	0.00061	0.0050		mg/L	5	3/18/2022 1:33:39 PM	B86600
Barium	0.051	0.0023	0.0050		mg/L	5	3/18/2022 1:33:39 PM	B86600
Beryllium	ND	0.0010	0.0050		mg/L	5	3/18/2022 1:33:39 PM	B86600
Cadmium	ND	0.00033	0.0025		mg/L	5	3/18/2022 1:33:39 PM	B86600
Chromium	ND	0.00069	0.0050		mg/L	5	3/18/2022 1:33:39 PM	B86600
Lead	ND	0.00028	0.0025		mg/L	5	3/18/2022 1:33:39 PM	B86600
Nickel	ND	0.0024	0.0050		mg/L	5	3/18/2022 1:33:39 PM	B86600
Selenium	0.0095	0.0017	0.0050		mg/L	5	3/18/2022 1:33:39 PM	B86600
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/18/2022 3:14:37 PM	66259

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-8-22
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022
Lab ID: 2203496-009A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	3/11/2022 7:13:16 PM	B86433
Toluene	ND	0.20	1.0		µg/L	1	3/11/2022 7:13:16 PM	B86433
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/11/2022 7:13:16 PM	B86433
Methyl tert-butyl ether (MTBE)	25	0.39	1.0		µg/L	1	3/11/2022 7:13:16 PM	B86433
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/11/2022 7:13:16 PM	B86433
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/11/2022 7:13:16 PM	B86433
1,2-Dichloroethane (EDC)	0.67	0.25	1.0	J	µg/L	1	3/11/2022 7:13:16 PM	B86433
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/11/2022 7:13:16 PM	B86433
Acetone	ND	2.5	10		µg/L	1	3/11/2022 7:13:16 PM	B86433
Bromomethane	ND	0.85	3.0		µg/L	1	3/11/2022 7:13:16 PM	B86433
2-Butanone	ND	2.0	10		µg/L	1	3/11/2022 7:13:16 PM	B86433
Carbon disulfide	ND	0.59	10		µg/L	1	3/11/2022 7:13:16 PM	B86433
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/11/2022 7:13:16 PM	B86433
Chloroform	ND	0.13	1.0		µg/L	1	3/11/2022 7:13:16 PM	B86433
Chloromethane	ND	0.41	3.0		µg/L	1	3/11/2022 7:13:16 PM	B86433
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/11/2022 7:13:16 PM	B86433
1,1-Dichloroethane	0.81	0.27	1.0	J	µg/L	1	3/11/2022 7:13:16 PM	B86433
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/11/2022 7:13:16 PM	B86433
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/11/2022 7:13:16 PM	B86433
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/11/2022 7:13:16 PM	B86433
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/11/2022 7:13:16 PM	B86433
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/11/2022 7:13:16 PM	B86433
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/11/2022 7:13:16 PM	B86433
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/11/2022 7:13:16 PM	B86433
Styrene	ND	0.14	1.0		µg/L	1	3/11/2022 7:13:16 PM	B86433
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/11/2022 7:13:16 PM	B86433
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/11/2022 7:13:16 PM	B86433
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/11/2022 7:13:16 PM	B86433
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/11/2022 7:13:16 PM	B86433
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/11/2022 7:13:16 PM	B86433
Surr: 1,2-Dichloroethane-d4	105	0	70-130		%Rec	1	3/11/2022 7:13:16 PM	B86433
Surr: 4-Bromofluorobenzene	96.4	0	70-130		%Rec	1	3/11/2022 7:13:16 PM	B86433
Surr: Dibromofluoromethane	104	0	70-130		%Rec	1	3/11/2022 7:13:16 PM	B86433
Surr: Toluene-d8	95.9	0	70-130		%Rec	1	3/11/2022 7:13:16 PM	B86433
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.060	0.012	0.050		mg/L	1	3/17/2022 6:12:12 PM	R86565
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	3/17/2022 6:12:12 PM	R86565

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-8-22
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022
Lab ID: 2203496-009B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	3/15/2022 4:05:27 PM	66148

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-8-22
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022
Lab ID: 2203496-009C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **TOM**	
Diesel Range Organics (DRO)	0.071	0.016	0.064		mg/L	1	3/11/2022 8:08:51 PM	66084
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/11/2022 8:08:51 PM	66084
Surr: DNOP	88.1	0	42.2-138		%Rec	1	3/11/2022 8:08:51 PM	66084
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	1.1	20		µg/L	1	3/16/2022 2:57:27 PM	66091
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/16/2022 2:57:27 PM	66091
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/16/2022 2:57:27 PM	66091
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/16/2022 2:57:27 PM	66091
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/16/2022 2:57:27 PM	66091
Diethyl phthalate	ND	3.9	10		µg/L	1	3/16/2022 2:57:27 PM	66091
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/16/2022 2:57:27 PM	66091
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/16/2022 2:57:27 PM	66091
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/16/2022 2:57:27 PM	66091
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/16/2022 2:57:27 PM	66091
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/16/2022 2:57:27 PM	66091
Phenol	ND	0.33	5.0		µg/L	1	3/16/2022 2:57:27 PM	66091
Pyridine	ND	10	10		µg/L	1	3/16/2022 2:57:27 PM	66091
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/16/2022 2:57:27 PM	66091
Surr: 2-Fluorophenol	0	0	29.4-87.7	S	%Rec	1	3/16/2022 2:57:27 PM	66091
Surr: Phenol-d5	1.98	0	28.5-64.7	S	%Rec	1	3/16/2022 2:57:27 PM	66091
Surr: 2,4,6-Tribromophenol	52.6	0	18.6-129		%Rec	1	3/16/2022 2:57:27 PM	66091
Surr: Nitrobenzene-d5	0	0	36.9-103	S	%Rec	1	3/16/2022 2:57:27 PM	66091
Surr: 2-Fluorobiphenyl	8.31	0	38.1-99.9	S	%Rec	1	3/16/2022 2:57:27 PM	66091
Surr: 4-Terphenyl-d14	79.2	0	48-155		%Rec	1	3/16/2022 2:57:27 PM	66091
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	2.4	0.048	1.0		µg/L	1	3/16/2022 10:43:00 PM	66057
Naphthalene	ND	0.034	0.10		µg/L	1	3/16/2022 10:43:00 PM	66057
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/16/2022 10:43:00 PM	66057
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/16/2022 10:43:00 PM	66057
Acenaphthene	ND	0.031	0.10		µg/L	1	3/16/2022 10:43:00 PM	66057
Fluorene	ND	0.031	0.10		µg/L	1	3/16/2022 10:43:00 PM	66057
Phenanthrene	ND	0.057	0.10		µg/L	1	3/16/2022 10:43:00 PM	66057
Anthracene	ND	0.034	0.10		µg/L	1	3/16/2022 10:43:00 PM	66057
Fluoranthene	ND	0.10	0.20		µg/L	1	3/16/2022 10:43:00 PM	66057
Pyrene	ND	0.16	0.20		µg/L	1	3/16/2022 10:43:00 PM	66057
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/16/2022 10:43:00 PM	66057
Chrysene	ND	0.024	0.10		µg/L	1	3/16/2022 10:43:00 PM	66057
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/16/2022 10:43:00 PM	66057
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/16/2022 10:43:00 PM	66057

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-8-22
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022
Lab ID: 2203496-009C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	68.0	0	31.6-100		%Rec	1	3/16/2022 10:43:00 PM	66057
Surr: 2-Fluorobiphenyl	61.5	0	26.7-90.1		%Rec	1	3/16/2022 10:43:00 PM	66057
Surr: 4-Terphenyl-d14	104	0	72.3-147		%Rec	1	3/16/2022 10:43:00 PM	66057

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-8-22
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022
Lab ID: 2203496-009D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **bcv**	
Cobalt	0.012	0.00017	0.0010		mg/L	1	3/15/2022 7:30:16 PM	66151
Vanadium	0.049	0.00058	0.0010		mg/L	1	3/17/2022 3:30:32 PM	66151
Antimony	ND	0.00044	0.0010		mg/L	1	3/15/2022 7:30:16 PM	66151
Arsenic	0.0025	0.00013	0.0010		mg/L	1	3/15/2022 7:30:16 PM	66151
Barium	1.6	0.023	0.050		mg/L	50	3/17/2022 3:37:53 PM	66151
Beryllium	0.0022	0.0012	0.0050	J	mg/L	5	3/17/2022 6:17:12 PM	66151
Cadmium	ND	0.000080	0.00050		mg/L	1	3/15/2022 7:30:16 PM	66151
Chromium	0.049	0.00056	0.0010		mg/L	1	3/15/2022 7:30:16 PM	66151
Lead	0.014	0.000061	0.00050		mg/L	1	3/15/2022 7:30:16 PM	66151
Nickel	0.035	0.00048	0.0010		mg/L	1	3/15/2022 7:30:16 PM	66151
Selenium	0.0027	0.00037	0.0010		mg/L	1	3/15/2022 7:30:16 PM	66151
Silver	0.00033	0.00022	0.00050	J	mg/L	1	3/15/2022 7:30:16 PM	66151
Zinc	0.046	0.0038	0.010		mg/L	1	3/15/2022 7:30:16 PM	66151
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00042	0.000091	0.00020		mg/L	1	3/16/2022 6:21:17 PM	66216

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-8-22
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022
Lab ID: 2203496-009E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Cobalt	0.0035	0.0024	0.0060	J	mg/L	1	3/11/2022 12:18:31 PM	C86413
Silver	ND	0.0013	0.0050		mg/L	1	3/11/2022 12:18:31 PM	C86413
Vanadium	ND	0.0017	0.050		mg/L	1	3/11/2022 12:18:31 PM	C86413
Zinc	0.0069	0.0032	0.010	J	mg/L	1	3/11/2022 12:18:31 PM	C86413
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	3/21/2022 4:36:11 PM	A86624
Arsenic	ND	0.00061	0.0050		mg/L	5	3/18/2022 1:41:43 PM	B86600
Barium	0.12	0.0023	0.0050		mg/L	5	3/18/2022 1:41:43 PM	B86600
Beryllium	ND	0.0010	0.0050		mg/L	5	3/18/2022 1:41:43 PM	B86600
Cadmium	ND	0.00033	0.0025		mg/L	5	3/18/2022 1:41:43 PM	B86600
Chromium	0.0015	0.00069	0.0050	J	mg/L	5	3/18/2022 1:41:43 PM	B86600
Lead	ND	0.00028	0.0025		mg/L	5	3/18/2022 1:41:43 PM	B86600
Nickel	ND	0.0024	0.0050		mg/L	5	3/18/2022 1:41:43 PM	B86600
Selenium	ND	0.0017	0.0050		mg/L	5	3/18/2022 1:41:43 PM	B86600
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00012	0.000091	0.00020	J	mg/L	1	3/18/2022 3:16:46 PM	66259

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB 3-8-22
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/8/2022 11:00:00 AM
Lab ID: 2203496-010A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	3/11/2022 7:40:16 PM	B86433
Toluene	ND	0.20	1.0		µg/L	1	3/11/2022 7:40:16 PM	B86433
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/11/2022 7:40:16 PM	B86433
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/11/2022 7:40:16 PM	B86433
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/11/2022 7:40:16 PM	B86433
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/11/2022 7:40:16 PM	B86433
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	3/11/2022 7:40:16 PM	B86433
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/11/2022 7:40:16 PM	B86433
Acetone	ND	2.5	10		µg/L	1	3/11/2022 7:40:16 PM	B86433
Bromomethane	ND	0.85	3.0		µg/L	1	3/11/2022 7:40:16 PM	B86433
2-Butanone	ND	2.0	10		µg/L	1	3/11/2022 7:40:16 PM	B86433
Carbon disulfide	ND	0.59	10		µg/L	1	3/11/2022 7:40:16 PM	B86433
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/11/2022 7:40:16 PM	B86433
Chloroform	ND	0.13	1.0		µg/L	1	3/11/2022 7:40:16 PM	B86433
Chloromethane	ND	0.41	3.0		µg/L	1	3/11/2022 7:40:16 PM	B86433
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/11/2022 7:40:16 PM	B86433
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/11/2022 7:40:16 PM	B86433
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/11/2022 7:40:16 PM	B86433
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/11/2022 7:40:16 PM	B86433
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/11/2022 7:40:16 PM	B86433
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/11/2022 7:40:16 PM	B86433
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/11/2022 7:40:16 PM	B86433
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/11/2022 7:40:16 PM	B86433
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/11/2022 7:40:16 PM	B86433
Styrene	ND	0.14	1.0		µg/L	1	3/11/2022 7:40:16 PM	B86433
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/11/2022 7:40:16 PM	B86433
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/11/2022 7:40:16 PM	B86433
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/11/2022 7:40:16 PM	B86433
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/11/2022 7:40:16 PM	B86433
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/11/2022 7:40:16 PM	B86433
Surr: 1,2-Dichloroethane-d4	99.0	0	70-130		%Rec	1	3/11/2022 7:40:16 PM	B86433
Surr: 4-Bromofluorobenzene	97.5	0	70-130		%Rec	1	3/11/2022 7:40:16 PM	B86433
Surr: Dibromofluoromethane	102	0	70-130		%Rec	1	3/11/2022 7:40:16 PM	B86433
Surr: Toluene-d8	95.9	0	70-130		%Rec	1	3/11/2022 7:40:16 PM	B86433

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date:
Lab ID: 2203496-011A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	3/11/2022 8:07:15 PM	B86433
Toluene	ND	0.20	1.0		µg/L	1	3/11/2022 8:07:15 PM	B86433
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/11/2022 8:07:15 PM	B86433
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/11/2022 8:07:15 PM	B86433
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/11/2022 8:07:15 PM	B86433
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/11/2022 8:07:15 PM	B86433
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	3/11/2022 8:07:15 PM	B86433
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/11/2022 8:07:15 PM	B86433
Acetone	ND	2.5	10		µg/L	1	3/11/2022 8:07:15 PM	B86433
Bromomethane	ND	0.85	3.0		µg/L	1	3/11/2022 8:07:15 PM	B86433
2-Butanone	ND	2.0	10		µg/L	1	3/11/2022 8:07:15 PM	B86433
Carbon disulfide	ND	0.59	10		µg/L	1	3/11/2022 8:07:15 PM	B86433
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/11/2022 8:07:15 PM	B86433
Chloroform	ND	0.13	1.0		µg/L	1	3/11/2022 8:07:15 PM	B86433
Chloromethane	ND	0.41	3.0		µg/L	1	3/11/2022 8:07:15 PM	B86433
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/11/2022 8:07:15 PM	B86433
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/11/2022 8:07:15 PM	B86433
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/11/2022 8:07:15 PM	B86433
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/11/2022 8:07:15 PM	B86433
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/11/2022 8:07:15 PM	B86433
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/11/2022 8:07:15 PM	B86433
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/11/2022 8:07:15 PM	B86433
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/11/2022 8:07:15 PM	B86433
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/11/2022 8:07:15 PM	B86433
Styrene	ND	0.14	1.0		µg/L	1	3/11/2022 8:07:15 PM	B86433
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/11/2022 8:07:15 PM	B86433
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/11/2022 8:07:15 PM	B86433
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/11/2022 8:07:15 PM	B86433
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/11/2022 8:07:15 PM	B86433
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/11/2022 8:07:15 PM	B86433
Surr: 1,2-Dichloroethane-d4	105	0	70-130		%Rec	1	3/11/2022 8:07:15 PM	B86433
Surr: 4-Bromofluorobenzene	97.2	0	70-130		%Rec	1	3/11/2022 8:07:15 PM	B86433
Surr: Dibromofluoromethane	103	0	70-130		%Rec	1	3/11/2022 8:07:15 PM	B86433
Surr: Toluene-d8	95.4	0	70-130		%Rec	1	3/11/2022 8:07:15 PM	B86433

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203496**
Date Reported: **3/23/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date:
Lab ID: 2203496-011B
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0035	0.0094		µg/L	1	3/15/2022 4:20:30 PM	66148

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

ANALYTICAL REPORT

March 17, 2022

Hall Environmental Analysis Laboratory

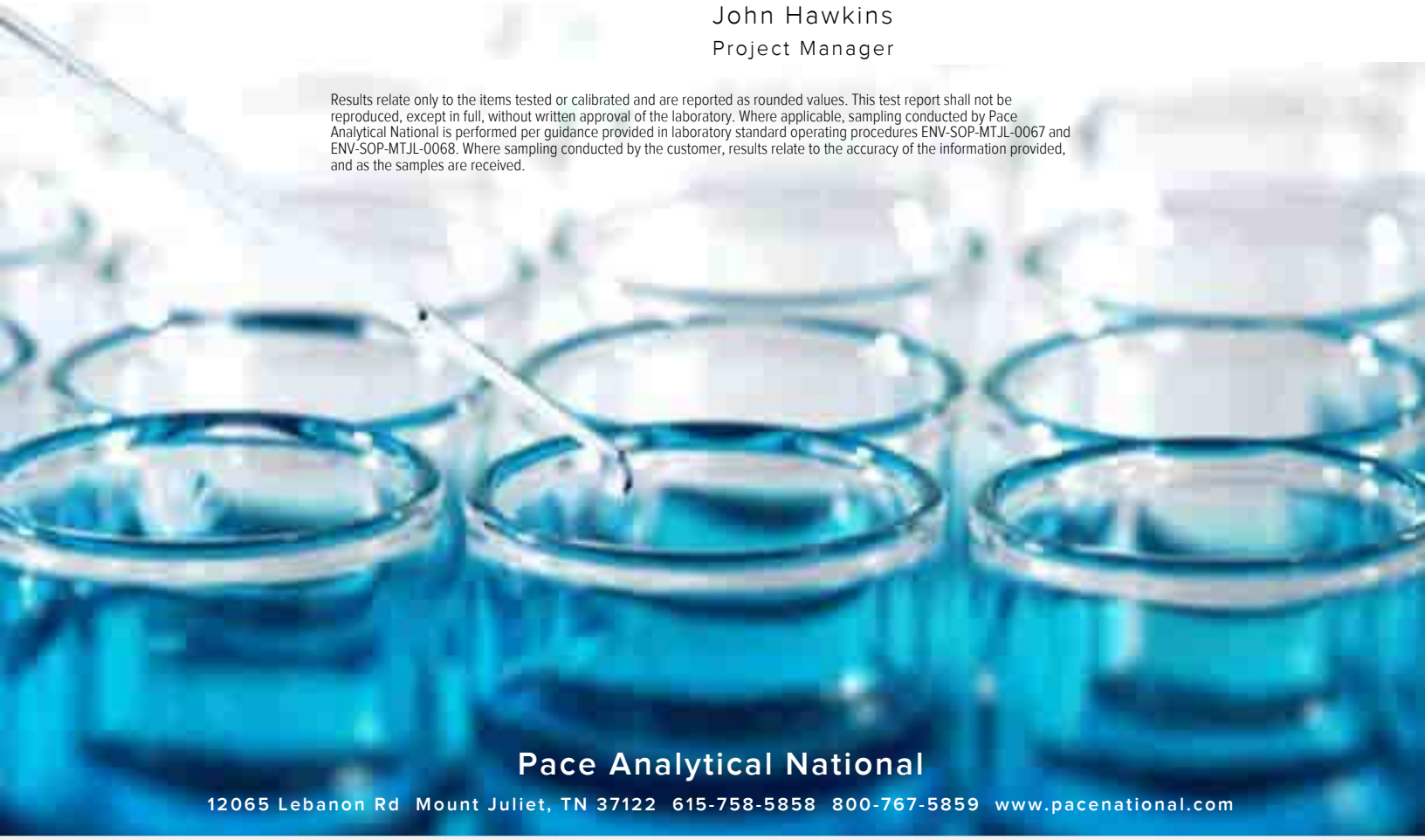
Sample Delivery Group:	L1469917
Samples Received:	03/10/2022
Project Number:	
Description:	

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By: John V Hawkins

John Hawkins
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 5

Sr: Sample Results 6

2203496-001F EB-3-8-22 L1469917-01 6

2203496-002F BW-5C L1469917-02 7

2203496-003F BW-5B L1469917-03 8

2203496-004F OW-50 L1469917-04 9

2203496-005F OW-52 L1469917-05 10

2203496-006F OW-29 L1469917-06 11

2203496-007F MKTF-43 L1469917-07 12

2203496-008F OW-10 L1469917-08 13

2203496-009F DUP-3-8-22 L1469917-09 14

Qc: Quality Control Summary 15

Wet Chemistry by Method 4500CN E-2016 15

Gl: Glossary of Terms 17

Al: Accreditations & Locations 18

Sc: Sample Chain of Custody 19

SAMPLE SUMMARY

2203496-001F EB-3-8-22 L1469917-01 GW

Collected by | Collected date/time 03/08/22 08:20 | Received date/time 03/10/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1831850	1	03/14/22 21:54	03/16/22 13:29	KEG	Mt. Juliet, TN

2203496-002F BW-5C L1469917-02 GW

Collected by | Collected date/time 03/08/22 08:20 | Received date/time 03/10/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1831850	1	03/14/22 21:54	03/16/22 13:34	KEG	Mt. Juliet, TN

2203496-003F BW-5B L1469917-03 GW

Collected by | Collected date/time 03/08/22 09:00 | Received date/time 03/10/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1831850	1	03/14/22 21:54	03/16/22 13:35	KEG	Mt. Juliet, TN

2203496-004F OW-50 L1469917-04 GW

Collected by | Collected date/time 03/08/22 09:25 | Received date/time 03/10/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1831850	1	03/14/22 21:54	03/16/22 13:36	KEG	Mt. Juliet, TN

2203496-005F OW-52 L1469917-05 GW

Collected by | Collected date/time 03/08/22 09:50 | Received date/time 03/10/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1831850	1	03/14/22 21:54	03/16/22 13:37	KEG	Mt. Juliet, TN

2203496-006F OW-29 L1469917-06 GW

Collected by | Collected date/time 03/08/22 10:15 | Received date/time 03/10/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1831850	1	03/14/22 21:54	03/16/22 13:38	KEG	Mt. Juliet, TN

2203496-007F MKTF-43 L1469917-07 GW

Collected by | Collected date/time 03/08/22 10:45 | Received date/time 03/10/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1831850	1	03/14/22 21:54	03/16/22 13:39	KEG	Mt. Juliet, TN

2203496-008F OW-10 L1469917-08 GW

Collected by | Collected date/time 03/08/22 11:00 | Received date/time 03/10/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1832545	1	03/15/22 16:11	03/16/22 11:56	KEG	Mt. Juliet, TN

SAMPLE SUMMARY

2203496-009F DUP-3-8-22 L1469917-09 GW

			Collected by	Collected date/time	Received date/time
				03/08/22 00:00	03/10/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1832545	1	03/15/22 16:11	03/16/22 11:58	KEG	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	U		1.80	5.00	1	03/16/2022 13:29	WG1831850

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	U		1.80	5.00	1	03/16/2022 13:34	WG1831850

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	U		1.80	5.00	1	03/16/2022 13:35	WG1831850

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	3.29	J	1.80	5.00	1	03/16/2022 13:36	WG1831850

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	U		1.80	5.00	1	03/16/2022 13:37	WG1831850

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	5.32		1.80	5.00	1	03/16/2022 13:38	WG1831850

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	U		1.80	5.00	1	03/16/2022 13:39	WG1831850

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	U		1.80	5.00	1	03/16/2022 11:56	WG1832545

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	U		1.80	5.00	1	03/16/2022 11:58	WG1832545

Method Blank (MB)

(MB) R3770448-1 03/16/22 13:08

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Cyanide	U		1.80	5.00

L1469831-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1469831-05 03/16/22 13:14 • (DUP) R3770448-3 03/16/22 13:15

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Cyanide	U	U	1	0.000		20

L1469832-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1469832-02 03/16/22 13:21 • (DUP) R3770448-6 03/16/22 13:22

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Cyanide	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3770448-2 03/16/22 13:09

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Cyanide	100	101	101	87.1-120	

L1469832-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1469832-01 03/16/22 13:16 • (MS) R3770448-4 03/16/22 13:17 • (MSD) R3770448-5 03/16/22 13:20

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Cyanide	100	U	100	98.8	100	98.8	1	90.0-110			1.21	20

L1469917-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1469917-01 03/16/22 13:29 • (MS) R3770448-7 03/16/22 13:30 • (MSD) R3770448-8 03/16/22 13:33

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Cyanide	100	U	92.1	98.8	92.1	98.8	1	90.0-110			7.02	20

Method Blank (MB)

(MB) R3770388-1 03/16/22 11:41

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Cyanide	U		1.80	5.00

L1469320-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1469320-02 03/16/22 11:47 • (DUP) R3770388-3 03/16/22 11:48

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	U	U	1	0.000		20

L1469917-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1469917-08 03/16/22 11:56 • (DUP) R3770388-6 03/16/22 11:57

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3770388-2 03/16/22 11:42

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	100	103	103	87.1-120	

L1469325-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1469325-02 03/16/22 11:49 • (MS) R3770388-4 03/16/22 11:50 • (MSD) R3770388-5 03/16/22 11:53

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	100	U	51.2	54.9	51.2	54.9	1	90.0-110	J6	J6	6.97	20

L1469917-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1469917-09 03/16/22 11:58 • (MS) R3770388-7 03/16/22 11:59 • (MSD) R3770388-8 03/16/22 12:00

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	100	U	92.2	96.9	92.2	96.9	1	90.0-110			4.97	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

H227

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: clients.hallenvironmental.com

SUB CONTRATOR	Pace TN	COMPANY	PACE TN	PHONE	(800) 767-5859
ADDRESS	12065 Lebanon Rd			ACCOUNT #	
CITY, STATE, ZIP	Mt. Juliet, TN 37122			EMAIL	

FAX (615) 758-5859

L1469917

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	2203496-001F	EB-3-8-22	500AMBHDP F-NAOH	Groundwater	3/8/2022 8:20:00 AM	1	Cyanide -01
2	2203496-002F	BW-5C	500AMBHDP F-NAOH	Groundwater	3/8/2022 8:20:00 AM	1	Cyanide -02 712
3	2203496-003F	BW-5B	500AMBHDP F-NAOH	Groundwater	3/8/2022 9:00:00 AM	1	Cyanide -03 RCV
4	2203496-004F	OW-50	500AMBHDP F-NAOH	Groundwater	3/8/2022 9:25:00 AM	1	Cyanide -04
5	2203496-005F	OW-52	500AMBHDP F-NAOH	Groundwater	3/8/2022 9:50:00 AM	1	Cyanide -05
6	2203496-006F	OW-29	500AMBHDP F-NAOH	Groundwater	3/8/2022 10:15:00 AM	1	Cyanide -06
7	2203496-007F	MKTF-43	500AMBHDP F-NAOH	Groundwater	3/8/2022 10:45:00 AM	1	Cyanide -07
8	2203496-008F	OW-10	500AMBHDP F-NAOH	Groundwater	3/8/2022 11:00:00 AM	1	Cyanide -08
9	2203496-009F	DUP-3-8-22	500AMBHDP F-NAOH	Groundwater	3/8/2022	1	Cyanide -09

Sample Receipt Checklist

COC Seal Present/Intact: ✓Y N
COC Signed/Accurate: ✓Y N
Bottles arrive intact: ✓Y N
Correct bottles used: ✓Y N
Sufficient volume sent: ✓Y N
RAD Screen <0.5 mR/hr: ✓Y N

If Applicable
VOA Zero Headspace: Y N
Pres.Correct/Check: ✓Y N

5.8+0=5.8

fedex: 5528 5947 9341

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

OK

Relinquished By		Date: 3/9/2022	Time: 10:51 AM	Received By		Date: 3/10/22	Time: 915
Relinquished By		Date	Time	Received By		Date	Time
Relinquished By		Date	Time	Received By		Date	Time

TAT: Standard ✓ RUSH Next BD 2nd BD 3rd BD

REPORT TRANSMITTAL DESIRED:
HARDCOPY (extra cost) FAX EMAIL ONLINE

FOR LAB USE ONLY
Temp of samples °C Attempt to Cool ?
Comments

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203496**

23-Mar-22

Client: Marathon

Project: 2022 Quarterly Sampling 1st Qtr

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **C86413**	RunNo: **86413**
Prep Date:	Analysis Date: **3/11/2022**	SeqNo: **3048353** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	ND	0.0060								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **C86413**	RunNo: **86413**
Prep Date:	Analysis Date: **3/11/2022**	SeqNo: **3048354** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	0.0062	0.0060	0.006000	0	103	50	150			
Silver	0.0053	0.0050	0.005000	0	105	50	150			
Vanadium	0.011	0.050	0.01000	0	107	50	150			J
Zinc	0.011	0.010	0.01000	0	109	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **C86413**	RunNo: **86413**
Prep Date:	Analysis Date: **3/11/2022**	SeqNo: **3048355** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	0.50	0.0060	0.5000	0	99.7	85	115			
Silver	0.10	0.0050	0.1000	0	102	85	115			
Vanadium	0.51	0.050	0.5000	0	103	85	115			
Zinc	0.51	0.010	0.5000	0	103	85	115			

Sample ID: **2203496-001EMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB-3-8-22**	Batch ID: **C86413**	RunNo: **86413**
Prep Date:	Analysis Date: **3/11/2022**	SeqNo: **3048463** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	0.50	0.0060	0.5000	0	99.1	70	130			
Silver	0.098	0.0050	0.1000	0	98.4	70	130			
Vanadium	0.51	0.050	0.5000	0	101	70	130			
Zinc	0.49	0.010	0.5000	0.005351	97.0	70	130			

Sample ID: **2203496-001EMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB-3-8-22**	Batch ID: **C86413**	RunNo: **86413**
Prep Date:	Analysis Date: **3/11/2022**	SeqNo: **3048464** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203496**
23-Mar-22

Client: Marathon
Project: 2022 Quarterly Sampling 1st Qtr

Sample ID: **2203496-001EMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB-3-8-22** Batch ID: **C86413** RunNo: **86413**
Prep Date: Analysis Date: **3/11/2022** SeqNo: **3048464** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	0.51	0.0060	0.5000	0	102	70	130	2.64	20	
Silver	0.10	0.0050	0.1000	0	101	70	130	2.62	20	
Vanadium	0.51	0.050	0.5000	0	102	70	130	1.20	20	
Zinc	0.50	0.010	0.5000	0.005351	99.1	70	130	2.13	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203496**

23-Mar-22

Client: Marathon

Project: 2022 Quarterly Sampling 1st Qtr

Sample ID: **MB-66151**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **66151**	RunNo: **86510**
Prep Date: **3/14/2022**	Analysis Date: **3/15/2022**	SeqNo: **3052849** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Barium	ND	0.0010								
Beryllium	ND	0.0010								
Cadmium	ND	0.00050								
Chromium	ND	0.0010								
Lead	ND	0.00050								
Nickel	ND	0.0010								
Selenium	ND	0.0010								
Silver	ND	0.00050								
Zinc	ND	0.010								

Sample ID: **MSLLLCS-66151**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **66151**	RunNo: **86510**
Prep Date: **3/14/2022**	Analysis Date: **3/15/2022**	SeqNo: **3052850** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0010	0.0010	0.001000	0	102	50	150			
Arsenic	0.00098	0.0010	0.001000	0	97.6	50	150			J
Barium	0.00085	0.0010	0.001000	0	85.5	50	150			J
Beryllium	0.0011	0.0010	0.001000	0	106	50	150			
Cadmium	0.00055	0.00050	0.0005000	0	110	50	150			
Chromium	0.0011	0.0010	0.001000	0	107	50	150			
Lead	0.00049	0.00050	0.0005000	0	97.5	50	150			J
Nickel	0.00098	0.0010	0.001000	0	98.3	50	150			J
Selenium	0.00087	0.0010	0.001000	0	86.7	50	150			J
Silver	0.00049	0.00050	0.0005000	0	98.2	50	150			J
Zinc	0.0099	0.010	0.01000	0	99.3	50	150			J

Sample ID: **MSLCS-66151**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **66151**	RunNo: **86510**
Prep Date: **3/14/2022**	Analysis Date: **3/15/2022**	SeqNo: **3052851** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	102	85	115			
Arsenic	0.026	0.0010	0.02500	0	105	85	115			
Barium	0.025	0.0010	0.02500	0	102	85	115			
Beryllium	0.028	0.0010	0.02500	0	111	85	115			
Cadmium	0.013	0.00050	0.01250	0	103	85	115			
Chromium	0.026	0.0010	0.02500	0	106	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203496**

23-Mar-22

Client: Marathon

Project: 2022 Quarterly Sampling 1st Qtr

Sample ID: **MSLCS-66151**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **66151**	RunNo: **86510**
Prep Date: **3/14/2022**	Analysis Date: **3/15/2022**	SeqNo: **3052851** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.013	0.00050	0.01250	0	103	85	115			
Nickel	0.026	0.0010	0.02500	0	104	85	115			
Selenium	0.024	0.0010	0.02500	0	96.0	85	115			
Silver	0.013	0.00050	0.01250	0	103	85	115			
Zinc	0.26	0.010	0.2500	0	103	85	115			

Sample ID: **MB-66191**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **66191**	RunNo: **86564**
Prep Date: **3/15/2022**	Analysis Date: **3/17/2022**	SeqNo: **3055017** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Barium	ND	0.0010								
Beryllium	ND	0.0010								
Cadmium	ND	0.00050								
Chromium	ND	0.0010								
Lead	ND	0.00050								
Nickel	ND	0.0010								
Selenium	ND	0.0010								
Silver	ND	0.00050								
Zinc	ND	0.010								

Sample ID: **MSLLLCS-66191**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **66191**	RunNo: **86564**
Prep Date: **3/15/2022**	Analysis Date: **3/17/2022**	SeqNo: **3055018** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0012	0.0010	0.001000	0	120	50	150			
Arsenic	0.0012	0.0010	0.001000	0	117	50	150			
Barium	0.0011	0.0010	0.001000	0	114	50	150			
Beryllium	0.0011	0.0010	0.001000	0	110	50	150			
Cadmium	0.00047	0.00050	0.0005000	0	94.2	50	150			J
Chromium	0.0012	0.0010	0.001000	0	124	50	150			
Lead	0.00051	0.00050	0.0005000	0	103	50	150			
Nickel	0.0010	0.0010	0.001000	0	103	50	150			
Silver	0.00053	0.00050	0.0005000	0	107	50	150			
Zinc	0.0097	0.010	0.01000	0	97.4	50	150			J

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203496**

23-Mar-22

Client: Marathon

Project: 2022 Quarterly Sampling 1st Qtr

Sample ID: **MSLCS-66191** SampType: **LCS** TestCode: **EPA 200.8: Metals**

Client ID: **LCSW** Batch ID: **66191** RunNo: **86564**

Prep Date: **3/15/2022** Analysis Date: **3/17/2022** SeqNo: **3055019** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	105	85	115			
Arsenic	0.026	0.0010	0.02500	0	103	85	115			
Barium	0.025	0.0010	0.02500	0	99.7	85	115			
Beryllium	0.028	0.0010	0.02500	0	111	85	115			
Cadmium	0.012	0.00050	0.01250	0	99.6	85	115			
Chromium	0.027	0.0010	0.02500	0	107	85	115			
Lead	0.013	0.00050	0.01250	0	101	85	115			
Nickel	0.026	0.0010	0.02500	0	103	85	115			
Selenium	0.027	0.0010	0.02500	0	107	85	115			
Silver	0.013	0.00050	0.01250	0	104	85	115			
Zinc	0.25	0.010	0.2500	0	101	85	115			

Sample ID: **2203496-001DMSLL** SampType: **MS** TestCode: **EPA 200.8: Metals**

Client ID: **EB-3-8-22** Batch ID: **66191** RunNo: **86564**

Prep Date: **3/15/2022** Analysis Date: **3/17/2022** SeqNo: **3055048** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	0.025	0.0010	0.02500	0	101	70	130			
Vanadium	0.026	0.0010	0.02500	0	104	70	130			
Antimony	0.025	0.0010	0.02500	0	99.4	70	130			
Arsenic	0.024	0.0010	0.02500	0	97.5	70	130			
Barium	0.024	0.0010	0.02500	0	96.6	70	130			
Beryllium	0.026	0.0010	0.02500	0	102	70	130			
Cadmium	0.012	0.00050	0.01250	0	92.9	70	130			
Chromium	0.025	0.0010	0.02500	0	101	70	130			
Lead	0.012	0.00050	0.01250	0	95.6	70	130			
Nickel	0.025	0.0010	0.02500	0	100	70	130			
Selenium	0.025	0.0010	0.02500	0	102	70	130			
Silver	0.012	0.00050	0.01250	0	99.5	70	130			
Zinc	0.23	0.010	0.2500	0	93.1	70	130			

Sample ID: **2203496-001DMSDL** SampType: **MSD** TestCode: **EPA 200.8: Metals**

Client ID: **EB-3-8-22** Batch ID: **66191** RunNo: **86564**

Prep Date: **3/15/2022** Analysis Date: **3/17/2022** SeqNo: **3055049** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	0.025	0.0010	0.02500	0	101	70	130	0.295	20	
Vanadium	0.025	0.0010	0.02500	0	101	70	130	2.93	20	
Antimony	0.024	0.0010	0.02500	0	97.1	70	130	2.33	20	
Arsenic	0.025	0.0010	0.02500	0	99.0	70	130	1.54	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203496**
23-Mar-22

Client: Marathon
Project: 2022 Quarterly Sampling 1st Qtr

Sample ID: **2203496-001DMSDL** SampType: **MSD** TestCode: **EPA 200.8: Metals**
Client ID: **EB-3-8-22** Batch ID: **66191** RunNo: **86564**
Prep Date: **3/15/2022** Analysis Date: **3/17/2022** SeqNo: **3055049** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.024	0.0010	0.02500	0	96.2	70	130	0.435	20	
Beryllium	0.026	0.0010	0.02500	0	103	70	130	0.528	22	
Cadmium	0.012	0.00050	0.01250	0	96.3	70	130	3.60	20	
Chromium	0.025	0.0010	0.02500	0	101	70	130	0.269	20	
Lead	0.012	0.00050	0.01250	0	95.1	70	130	0.516	20	
Nickel	0.025	0.0010	0.02500	0	101	70	130	0.811	20	
Selenium	0.024	0.0010	0.02500	0	97.9	70	130	3.79	20	
Silver	0.012	0.00050	0.01250	0	97.2	70	130	2.33	20	
Zinc	0.23	0.010	0.2500	0	93.0	70	130	0.152	20	

Sample ID: **MSLLLCS-66191** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **66191** RunNo: **86564**
Prep Date: **3/15/2022** Analysis Date: **3/17/2022** SeqNo: **3055052** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.00078	0.0010	0.001000	0	78.5	50	150			J

Sample ID: **2203496-004DMSLL** SampType: **MS** TestCode: **EPA 200.8: Metals**
Client ID: **OW-50** Batch ID: **66191** RunNo: **86564**
Prep Date: **3/15/2022** Analysis Date: **3/17/2022** SeqNo: **3055055** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	0.026	0.0010	0.02500	0	103	70	130			
Vanadium	0.030	0.0010	0.02500	0	119	70	130			
Antimony	0.025	0.0010	0.02500	0	99.6	70	130			
Arsenic	0.029	0.0010	0.02500	0.002159	107	70	130			
Beryllium	0.026	0.0010	0.02500	0	104	70	130			
Cadmium	0.010	0.00050	0.01250	0	83.4	70	130			
Chromium	0.027	0.0010	0.02500	0	108	70	130			
Lead	0.011	0.00050	0.01250	0	85.3	70	130			
Nickel	0.026	0.0010	0.02500	0.001317	99.8	70	130			
Selenium	0.029	0.0010	0.02500	0	115	70	130			
Silver	0.010	0.00050	0.01250	0	79.7	70	130			
Zinc	0.22	0.010	0.2500	0	88.7	70	130			

Sample ID: **2203496-004DMSLL** SampType: **MS** TestCode: **EPA 200.8: Metals**
Client ID: **OW-50** Batch ID: **66191** RunNo: **86564**
Prep Date: **3/15/2022** Analysis Date: **3/17/2022** SeqNo: **3055106** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203496**
23-Mar-22

Client: Marathon
Project: 2022 Quarterly Sampling 1st Qtr

Sample ID: **2203496-004DMSLL** SampType: **MS** TestCode: **EPA 200.8: Metals**
Client ID: **OW-50** Batch ID: **66191** RunNo: **86564**
Prep Date: **3/15/2022** Analysis Date: **3/17/2022** SeqNo: **3055106** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.076	0.0050	0.02500	0.05470	84.4	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203496**
23-Mar-22

Client: Marathon
Project: 2022 Quarterly Sampling 1st Qtr

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B86418**	RunNo: **86418**
Prep Date:	Analysis Date: **3/11/2022**	SeqNo: **3051273** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Barium	ND	0.0010								
Beryllium	ND	0.0010								
Cadmium	ND	0.00050								
Chromium	ND	0.0010								
Lead	ND	0.00050								
Nickel	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B86418**	RunNo: **86418**
Prep Date:	Analysis Date: **3/11/2022**	SeqNo: **3051274** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0011	0.0010	0.001000	0	109	50	150			
Arsenic	0.0010	0.0010	0.001000	0	99.9	50	150			J
Barium	0.0010	0.0010	0.001000	0	100	50	150			
Beryllium	0.0011	0.0010	0.001000	0	106	50	150			
Cadmium	0.00055	0.00050	0.0005000	0	110	50	150			
Chromium	0.0010	0.0010	0.001000	0	104	50	150			
Lead	0.00053	0.00050	0.0005000	0	105	50	150			
Nickel	0.0010	0.0010	0.001000	0	101	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B86418**	RunNo: **86418**
Prep Date:	Analysis Date: **3/11/2022**	SeqNo: **3051275** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.7	85	115			
Arsenic	0.025	0.0010	0.02500	0	100	85	115			
Barium	0.025	0.0010	0.02500	0	99.7	85	115			
Beryllium	0.025	0.0010	0.02500	0	99.4	85	115			
Cadmium	0.013	0.00050	0.01250	0	105	85	115			
Chromium	0.025	0.0010	0.02500	0	100	85	115			
Lead	0.012	0.00050	0.01250	0	99.8	85	115			
Nickel	0.025	0.0010	0.02500	0	99.1	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203496**
23-Mar-22

Client: Marathon
Project: 2022 Quarterly Sampling 1st Qtr

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **C86418** RunNo: **86418**
Prep Date: Analysis Date: **3/11/2022** SeqNo: **3051334** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Barium	ND	0.0010								
Beryllium	ND	0.0010								
Chromium	ND	0.0010								
Nickel	ND	0.0010								
Selenium	ND	0.0010								

Sample ID: **LCSLL** SampType: **LCSLL** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **C86418** RunNo: **86418**
Prep Date: Analysis Date: **3/11/2022** SeqNo: **3051335** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0012	0.0010	0.001000	0	115	50	150			
Arsenic	0.0010	0.0010	0.001000	0	105	50	150			
Barium	0.0010	0.0010	0.001000	0	105	50	150			
Beryllium	0.0011	0.0010	0.001000	0	113	50	150			
Chromium	0.0011	0.0010	0.001000	0	112	50	150			
Nickel	0.00091	0.0010	0.001000	0	90.7	50	150			J
Selenium	0.00087	0.0010	0.001000	0	87.4	50	150			J

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **C86418** RunNo: **86418**
Prep Date: Analysis Date: **3/11/2022** SeqNo: **3051336** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	98.8	85	115			
Arsenic	0.024	0.0010	0.02500	0	97.5	85	115			
Barium	0.024	0.0010	0.02500	0	97.8	85	115			
Beryllium	0.024	0.0010	0.02500	0	96.4	85	115			
Chromium	0.025	0.0010	0.02500	0	102	85	115			
Nickel	0.025	0.0010	0.02500	0	100	85	115			
Selenium	0.025	0.0010	0.02500	0	101	85	115			

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **B86537** RunNo: **86537**
Prep Date: Analysis Date: **3/16/2022** SeqNo: **3053959** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203496**

23-Mar-22

Client: Marathon

Project: 2022 Quarterly Sampling 1st Qtr

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B86537**	RunNo: **86537**
Prep Date:	Analysis Date: **3/16/2022**	SeqNo: **3053959** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.00050								
Lead	ND	0.00050								
Nickel	ND	0.0010								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B86537**	RunNo: **86537**
Prep Date:	Analysis Date: **3/16/2022**	SeqNo: **3053960** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0010	0.0010	0.001000	0	100	50	150			
Cadmium	0.00049	0.00050	0.0005000	0	97.6	50	150			J
Lead	0.00048	0.00050	0.0005000	0	96.2	50	150			J
Nickel	0.00080	0.0010	0.001000	0	80.1	50	150			J
Selenium	0.0010	0.0010	0.001000	0	102	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B86537**	RunNo: **86537**
Prep Date:	Analysis Date: **3/16/2022**	SeqNo: **3053961** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.024	0.0010	0.02500	0	97.7	85	115			
Cadmium	0.013	0.00050	0.01250	0	101	85	115			
Lead	0.012	0.00050	0.01250	0	97.7	85	115			
Nickel	0.025	0.0010	0.02500	0	98.6	85	115			
Selenium	0.024	0.0010	0.02500	0	97.2	85	115			

Sample ID: **2203496-001EMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **EB-3-8-22**	Batch ID: **B86537**	RunNo: **86537**
Prep Date:	Analysis Date: **3/16/2022**	SeqNo: **3053973** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.025	0.0010	0.02500	0	102	70	130			

Sample ID: **2203496-001EMSDL**	SampType: **MSD**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **EB-3-8-22**	Batch ID: **B86537**	RunNo: **86537**
Prep Date:	Analysis Date: **3/16/2022**	SeqNo: **3053974** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.025	0.0010	0.02500	0	101	70	130	1.31	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203496**
23-Mar-22

Client: Marathon
Project: 2022 Quarterly Sampling 1st Qtr

Sample ID: **2203496-005EMSLL** SampType: **MS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **OW-52** Batch ID: **B86537** RunNo: **86537**
Prep Date: Analysis Date: **3/16/2022** SeqNo: **3053984** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.011	0.00050	0.01250	0	89.6	70	130			
Lead	0.011	0.00050	0.01250	0	86.6	70	130			

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **B86600** RunNo: **86600**
Prep Date: Analysis Date: **3/18/2022** SeqNo: **3056942** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Barium	ND	0.0010								
Beryllium	ND	0.0010								
Cadmium	ND	0.00050								
Chromium	ND	0.0010								
Lead	ND	0.00050								
Nickel	ND	0.0010								
Selenium	ND	0.0010								

Sample ID: **LCSLL** SampType: **LCSLL** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **B86600** RunNo: **86600**
Prep Date: Analysis Date: **3/18/2022** SeqNo: **3056943** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.0011	0.0010	0.001000	0	110	50	150			
Barium	0.0012	0.0010	0.001000	0	120	50	150			
Beryllium	0.0011	0.0010	0.001000	0	107	50	150			
Cadmium	0.00054	0.00050	0.0005000	0	108	50	150			
Chromium	0.0011	0.0010	0.001000	0	107	50	150			
Lead	0.00054	0.00050	0.0005000	0	109	50	150			
Nickel	0.0011	0.0010	0.001000	0	106	50	150			
Selenium	0.0012	0.0010	0.001000	0	116	50	150			

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **B86600** RunNo: **86600**
Prep Date: Analysis Date: **3/18/2022** SeqNo: **3056944** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.026	0.0010	0.02500	0	103	85	115			
Barium	0.025	0.0010	0.02500	0	102	85	115			
Beryllium	0.026	0.0010	0.02500	0	105	85	115			
Cadmium	0.014	0.00050	0.01250	0	108	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203496**

23-Mar-22

Client: Marathon

Project: 2022 Quarterly Sampling 1st Qtr

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B86600**	RunNo: **86600**
Prep Date:	Analysis Date: **3/18/2022**	SeqNo: **3056944** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	0.026	0.0010	0.02500	0	103	85	115			
Lead	0.013	0.00050	0.01250	0	106	85	115			
Nickel	0.026	0.0010	0.02500	0	105	85	115			
Selenium	0.028	0.0010	0.02500	0	113	85	115			

Sample ID: **2203496-008EMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **OW-10**	Batch ID: **B86600**	RunNo: **86600**
Prep Date:	Analysis Date: **3/18/2022**	SeqNo: **3056955** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.13	0.0050	0.1250	0	104	70	130			
Barium	0.19	0.0050	0.1250	0.05110	110	70	130			
Beryllium	0.12	0.0050	0.1250	0	93.2	70	130			
Cadmium	0.058	0.0025	0.06250	0	93.4	70	130			
Chromium	0.13	0.0050	0.1250	0	105	70	130			
Lead	0.058	0.0025	0.06250	0	93.0	70	130			
Nickel	0.13	0.0050	0.1250	0	104	70	130			
Selenium	0.13	0.0050	0.1250	0.009469	98.8	70	130			

Sample ID: **2203496-008EMSDL**	SampType: **MSD**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **OW-10**	Batch ID: **B86600**	RunNo: **86600**
Prep Date:	Analysis Date: **3/18/2022**	SeqNo: **3056956** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.13	0.0050	0.1250	0	104	70	130	0.151	20	
Barium	0.18	0.0050	0.1250	0.05110	105	70	130	3.32	20	
Beryllium	0.12	0.0050	0.1250	0	95.6	70	130	2.53	20	
Cadmium	0.061	0.0025	0.06250	0	97.6	70	130	4.42	20	
Chromium	0.13	0.0050	0.1250	0	102	70	130	2.57	20	
Lead	0.059	0.0025	0.06250	0	93.9	70	130	0.939	20	
Nickel	0.13	0.0050	0.1250	0	103	70	130	0.468	20	
Selenium	0.14	0.0050	0.1250	0.009469	104	70	130	4.62	20	

Sample ID: **2203496-009EMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **DUP-3-8-22**	Batch ID: **B86600**	RunNo: **86600**
Prep Date:	Analysis Date: **3/18/2022**	SeqNo: **3056958** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.14	0.0050	0.1250	0	109	70	130			
Barium	0.24	0.0050	0.1250	0.1185	97.9	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203496**

23-Mar-22

Client: Marathon

Project: 2022 Quarterly Sampling 1st Qtr

Sample ID: **2203496-009EMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **DUP-3-8-22**	Batch ID: **B86600**	RunNo: **86600**
Prep Date:	Analysis Date: **3/18/2022**	SeqNo: **3056958** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.12	0.0050	0.1250	0	97.7	70	130			
Cadmium	0.055	0.0025	0.06250	0	88.0	70	130			
Chromium	0.13	0.0050	0.1250	0.001466	104	70	130			
Lead	0.057	0.0025	0.06250	0	91.5	70	130			
Nickel	0.13	0.0050	0.1250	0	103	70	130			
Selenium	0.14	0.0050	0.1250	0	109	70	130			

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A86624**	RunNo: **86624**
Prep Date:	Analysis Date: **3/21/2022**	SeqNo: **3058028** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A86624**	RunNo: **86624**
Prep Date:	Analysis Date: **3/21/2022**	SeqNo: **3058029** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0011	0.0010	0.001000	0	115	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A86624**	RunNo: **86624**
Prep Date:	Analysis Date: **3/21/2022**	SeqNo: **3058030** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	102	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203496**
23-Mar-22

Client: Marathon
Project: 2022 Quarterly Sampling 1st Qtr

Sample ID: **MB-66216**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **PBW**	Batch ID: **66216**	RunNo: **86530**							
Prep Date: **3/16/2022**	Analysis Date: **3/16/2022**	SeqNo: **3053603**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-66216**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **BatchQC**	Batch ID: **66216**	RunNo: **86530**							
Prep Date: **3/16/2022**	Analysis Date: **3/16/2022**	SeqNo: **3053604**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00015	0.00020	0.0001500	0	96.8	50	150			J

Sample ID: **LCS-66216**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **LCSW**	Batch ID: **66216**	RunNo: **86530**							
Prep Date: **3/16/2022**	Analysis Date: **3/16/2022**	SeqNo: **3053605**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0048	0.00020	0.005000	0	95.1	85	115			

Sample ID: **2203496-005DMS**	SampType: **MS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **OW-52**	Batch ID: **66216**	RunNo: **86530**							
Prep Date: **3/16/2022**	Analysis Date: **3/16/2022**	SeqNo: **3053636**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0049	0.00020	0.005000	0	98.5	75	125			

Sample ID: **2203496-005DMSD**	SampType: **MSD**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **OW-52**	Batch ID: **66216**	RunNo: **86530**							
Prep Date: **3/16/2022**	Analysis Date: **3/16/2022**	SeqNo: **3053637**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0049	0.00020	0.005000	0	97.8	75	125	0.667	20	

Sample ID: **MB-66259**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **PBW**	Batch ID: **66259**	RunNo: **86582**							
Prep Date: **3/18/2022**	Analysis Date: **3/18/2022**	SeqNo: **3055992**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203496**
23-Mar-22

Client: Marathon
Project: 2022 Quarterly Sampling 1st Qtr

Sample ID: **LCSLL-66259**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC**	Batch ID: **66259**	RunNo: **86582**
Prep Date: **3/18/2022**	Analysis Date: **3/18/2022**	SeqNo: **3055993** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00021	0.00020	0.0001500	0	143	50	150			

Sample ID: **LCS-66259**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW**	Batch ID: **66259**	RunNo: **86582**
Prep Date: **3/18/2022**	Analysis Date: **3/18/2022**	SeqNo: **3055994** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0053	0.00020	0.005000	0	107	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203496**

23-Mar-22

Client: Marathon

Project: 2022 Quarterly Sampling 1st Qtr

Sample ID: **MB-66148**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **66148**	RunNo: **86477**
Prep Date: **3/15/2022**	Analysis Date: **3/15/2022**	SeqNo: **3052008** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **MB-66148**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **66148**	RunNo: **86477**
Prep Date: **3/15/2022**	Analysis Date: **3/15/2022**	SeqNo: **3052011** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-66148**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW**	Batch ID: **66148**	RunNo: **86477**
Prep Date: **3/15/2022**	Analysis Date: **3/15/2022**	SeqNo: **3052107** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.092	0.010	0.1000	0	92.0	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203496**

23-Mar-22

Client: Marathon

Project: 2022 Quarterly Sampling 1st Qtr

Sample ID: **MB-66084**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **PBW**	Batch ID: **66084**	RunNo: **86400**
Prep Date: **3/10/2022**	Analysis Date: **3/11/2022**	SeqNo: **3049367** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.030	0.064								J
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.039		0.03750		103	42.2	138			

Sample ID: **LCS-66084**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSW**	Batch ID: **66084**	RunNo: **86400**
Prep Date: **3/10/2022**	Analysis Date: **3/11/2022**	SeqNo: **3049368** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.11	0.064	0.1875	0	60.0	31.7	75.4			
Surr: DNOP	0.019		0.01875		102	42.2	138			

Sample ID: **LCSD-66084**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02**	Batch ID: **66084**	RunNo: **86400**
Prep Date: **3/10/2022**	Analysis Date: **3/11/2022**	SeqNo: **3049369** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.11	0.064	0.1875	0	59.7	31.7	75.4	0.465	20	
Surr: DNOP	0.019		0.01875		101	42.2	138	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203496**

23-Mar-22

Client: Marathon

Project: 2022 Quarterly Sampling 1st Qtr

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **B86433**	RunNo: **86433**
Prep Date:	Analysis Date: **3/11/2022**	SeqNo: **3049425** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	111	70	130			
Toluene	19	1.0	20.00	0	93.0	70	130			
Chlorobenzene	19	1.0	20.00	0	93.8	70	130			
1,1-Dichloroethene	20	1.0	20.00	0	101	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	91.0	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		100	70	130			
Surr: 4-Bromofluorobenzene	9.3		10.00		92.7	70	130			
Surr: Dibromofluoromethane	9.8		10.00		98.1	70	130			
Surr: Toluene-d8	9.6		10.00		95.6	70	130			

Sample ID: **2203496-002a ms**	SampType: **MS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **BW-5C**	Batch ID: **B86433**	RunNo: **86433**
Prep Date:	Analysis Date: **3/11/2022**	SeqNo: **3049440** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	23	1.0	20.00	0	114	70	130			
Toluene	18	1.0	20.00	0	91.8	70	130			
Chlorobenzene	20	1.0	20.00	0	97.7	70	130			
1,1-Dichloroethene	21	1.0	20.00	0	103	70	130			
Trichloroethene (TCE)	19	1.0	20.00	0	93.2	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		105	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	9.6		10.00		96.2	70	130			

Sample ID: **2203496-002a msd**	SampType: **MSD**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **BW-5C**	Batch ID: **B86433**	RunNo: **86433**
Prep Date:	Analysis Date: **3/12/2022**	SeqNo: **3049441** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	23	1.0	20.00	0	115	70	130	0.590	20	
Toluene	18	1.0	20.00	0	89.7	70	130	2.34	20	
Chlorobenzene	19	1.0	20.00	0	92.6	70	130	5.38	20	
1,1-Dichloroethene	21	1.0	20.00	0	104	70	130	0.872	20	
Trichloroethene (TCE)	19	1.0	20.00	0	95.1	70	130	1.96	20	
Surr: 1,2-Dichloroethane-d4	11		10.00		109	70	130	0	0	
Surr: 4-Bromofluorobenzene	9.7		10.00		97.1	70	130	0	0	
Surr: Dibromofluoromethane	11		10.00		108	70	130	0	0	
Surr: Toluene-d8	9.8		10.00		97.8	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203496**
23-Mar-22

Client: Marathon
Project: 2022 Quarterly Sampling 1st Qtr

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **B86433**	RunNo: **86433**
Prep Date:	Analysis Date: **3/11/2022**	SeqNo: **3049453** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		99.9	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		98.3	70	130			
Surr: Dibromofluoromethane	10		10.00		100	70	130			
Surr: Toluene-d8	9.2		10.00		92.1	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203496**

23-Mar-22

Client: Marathon

Project: 2022 Quarterly Sampling 1st Qtr

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**						
Client ID: **LCSW**	Batch ID: **B86459**	RunNo: **86459**						
Prep Date:	Analysis Date: **3/14/2022**	SeqNo: **3050525**	Units: **%Rec**					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		108	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	9.9		10.00		98.7	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**						
Client ID: **PBW**	Batch ID: **B86459**	RunNo: **86459**						
Prep Date:	Analysis Date: **3/14/2022**	SeqNo: **3050554**	Units: **µg/L**					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	1.0								
Surr: 1,2-Dichloroethane-d4	9.8		10.00		98.0	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	10		10.00		100	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**						
Client ID: **LCSW**	Batch ID: **R86565**	RunNo: **86565**						
Prep Date:	Analysis Date: **3/17/2022**	SeqNo: **3055126**	Units: **%Rec**					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	9.3		10.00		93.5	70	130			
Surr: 4-Bromofluorobenzene	9.7		10.00		97.2	70	130			
Surr: Dibromofluoromethane	9.4		10.00		93.7	70	130			
Surr: Toluene-d8	9.9		10.00		98.9	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**						
Client ID: **PBW**	Batch ID: **R86565**	RunNo: **86565**						
Prep Date:	Analysis Date: **3/17/2022**	SeqNo: **3055141**	Units: **%Rec**					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	8.8		10.00		88.0	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		100	70	130			
Surr: Dibromofluoromethane	9.2		10.00		91.7	70	130			
Surr: Toluene-d8	10		10.00		104	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203496**

23-Mar-22

Client: Marathon

Project: 2022 Quarterly Sampling 1st Qtr

Sample ID: **MB-66091**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **66091**	RunNo: **86487**
Prep Date: **3/10/2022**	Analysis Date: **3/15/2022**	SeqNo: **3051811** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	5.0								
2,4-Dinitrophenol	ND	5.0								
2-Methylphenol	ND	5.0								
3+4-Methylphenol	ND	5.0								
Phenol	ND	5.0								
Pyridine	ND	10								
2,4,6-Trichlorophenol	ND	5.0								
Surr: 2-Fluorophenol	87		200.0		43.4	29.4	87.7			
Surr: Phenol-d5	68		200.0		34.0	28.5	64.7			
Surr: 2,4,6-Tribromophenol	120		200.0		59.9	18.6	129			
Surr: Nitrobenzene-d5	52		100.0		52.0	36.9	103			
Surr: 2-Fluorobiphenyl	55		100.0		55.4	38.1	99.9			
Surr: 4-Terphenyl-d14	87		100.0		86.8	48	155			

Sample ID: **LCS-66091**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **66091**	RunNo: **86487**
Prep Date: **3/10/2022**	Analysis Date: **3/15/2022**	SeqNo: **3051812** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	37	5.0	100.0	0	36.6	15	87.6			
Phenol	56	5.0	200.0	0	27.8	16.8	70.5			
Surr: 2-Fluorophenol	69		200.0		34.4	29.4	87.7			
Surr: Phenol-d5	54		200.0		27.2	28.5	64.7			S
Surr: 2,4,6-Tribromophenol	100		200.0		51.5	18.6	129			
Surr: Nitrobenzene-d5	46		100.0		45.8	36.9	103			
Surr: 2-Fluorobiphenyl	47		100.0		47.2	38.1	99.9			
Surr: 4-Terphenyl-d14	85		100.0		85.3	48	155			

Sample ID: **LCSD-66091**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **66091**	RunNo: **86487**
Prep Date: **3/10/2022**	Analysis Date: **3/15/2022**	SeqNo: **3051813** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203496**
23-Mar-22

Client: Marathon
Project: 2022 Quarterly Sampling 1st Qtr

Sample ID: **LCSD-66091** SampType: **LCSD** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02** Batch ID: **66091** RunNo: **86487**
Prep Date: **3/10/2022** Analysis Date: **3/15/2022** SeqNo: **3051813** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	47	5.0	100.0	0	47.3	15	87.6	25.6	30.4	
Phenol	62	5.0	200.0	0	31.2	16.8	70.5	11.4	37.2	
Surr: 2-Fluorophenol	81		200.0		40.7	29.4	87.7	0	0	
Surr: Phenol-d5	64		200.0		32.1	28.5	64.7	0	0	
Surr: 2,4,6-Tribromophenol	110		200.0		56.5	18.6	129	0	0	
Surr: Nitrobenzene-d5	51		100.0		50.7	36.9	103	0	0	
Surr: 2-Fluorobiphenyl	52		100.0		52.3	38.1	99.9	0	0	
Surr: 4-Terphenyl-d14	79		100.0		79.4	48	155	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203496**

23-Mar-22

Client: Marathon

Project: 2022 Quarterly Sampling 1st Qtr

Sample ID: **mb-66057**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **66057**	RunNo: **86533**
Prep Date: **3/9/2022**	Analysis Date: **3/16/2022**	SeqNo: **3053769** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.10								
2-Methylnaphthalene	ND	0.10								
Acenaphthene	ND	0.10								
Fluorene	ND	0.10								
Phenanthrene	ND	0.10								
Anthracene	ND	0.10								
Fluoranthene	ND	0.20								
Pyrene	ND	0.20								
Benz(a)anthracene	ND	0.10								
Chrysene	ND	0.10								
Benzo(b)fluoranthene	ND	0.10								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	1.6		4.000		39.5	31.6	100			
Surr: 2,4,6-Tribromophenol	3.0		8.000		37.2	22	101			
Surr: 2-Fluorobiphenyl	1.2		4.000		29.5	26.7	90.1			
Surr: 4-Terphenyl-d14	4.1		4.000		103	72.3	147			

Sample ID: **lcs-66057**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **66057**	RunNo: **86533**
Prep Date: **3/9/2022**	Analysis Date: **3/16/2022**	SeqNo: **3053770** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.74	0.10	2.000	0	37.0	20.2	48.4			
Naphthalene	0.84	0.10	2.000	0	42.0	21.3	79.9			
1-Methylnaphthalene	0.86	0.10	2.000	0	43.0	22.2	80.3			
2-Methylnaphthalene	0.82	0.10	2.000	0	41.0	20.6	80.1			
Acenaphthene	1.2	0.10	2.000	0	59.0	29.8	82.7			
Fluorene	1.3	0.10	2.000	0	65.0	33.3	86			
Phenanthrene	1.5	0.10	2.000	0	75.0	38.2	93.9			
Anthracene	1.5	0.10	2.000	0	73.0	41.1	95.6			
Fluoranthene	1.7	0.20	2.000	0	83.0	52.9	123			
Pyrene	1.6	0.20	2.000	0	82.0	51	113			
Benz(a)anthracene	1.8	0.10	2.000	0	91.0	51	147			
Chrysene	1.7	0.10	2.000	0	86.0	55.3	115			
Benzo(b)fluoranthene	1.7	0.10	2.000	0	86.0	44.4	136			
Indeno(1,2,3-cd)pyrene	1.9	0.30	2.000	0	94.0	31.4	165			
Surr: Nitrobenzene-d5	3.7		5.000		73.6	31.6	100			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203496**

23-Mar-22

Client: Marathon

Project: 2022 Quarterly Sampling 1st Qtr

Sample ID: **lcs-66057**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**							
Client ID: **LCSW**	Batch ID: **66057**	RunNo: **86533**							
Prep Date: **3/9/2022**	Analysis Date: **3/16/2022**	SeqNo: **3053770**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	5.7		10.00		56.8	22	101			
Surr: 2-Fluorobiphenyl	3.5		5.000		70.8	26.7	90.1			
Surr: 4-Terphenyl-d14	6.1		5.000		122	72.3	147			

Sample ID: **lcsd-66057**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**							
Client ID: **LCSS02**	Batch ID: **66057**	RunNo: **86533**							
Prep Date: **3/9/2022**	Analysis Date: **3/16/2022**	SeqNo: **3053771**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.58	0.10	2.000	0	29.0	20.2	48.4	24.2	30.1	
Naphthalene	0.56	0.10	2.000	0	28.0	21.3	79.9	40.0	25.6	R
1-Methylnaphthalene	0.58	0.10	2.000	0	29.0	22.2	80.3	38.9	25	R
2-Methylnaphthalene	0.56	0.10	2.000	0	28.0	20.6	80.1	37.7	25	R
Acenaphthene	0.86	0.10	2.000	0	43.0	29.8	82.7	31.4	27.8	R
Fluorene	1.0	0.10	2.000	0	50.0	33.3	86	26.1	26.4	
Phenanthrene	1.2	0.10	2.000	0	60.0	38.2	93.9	22.2	27.9	
Anthracene	1.1	0.10	2.000	0	57.0	41.1	95.6	24.6	25.6	
Fluoranthene	1.5	0.20	2.000	0	73.0	52.9	123	12.8	22.8	
Pyrene	1.5	0.20	2.000	0	75.0	51	113	8.92	20	
Benz(a)anthracene	1.7	0.10	2.000	0	87.0	51	147	4.49	24.1	
Chrysene	1.8	0.10	2.000	0	92.0	55.3	115	6.74	20	
Benzo(b)fluoranthene	1.8	0.10	2.000	0	89.0	44.4	136	3.43	24.5	
Indeno(1,2,3-cd)pyrene	1.9	0.30	2.000	0	95.0	31.4	165	1.06	21.1	
Surr: Nitrobenzene-d5	2.9		5.000		58.0	31.6	100	0	0	
Surr: 2,4,6-Tribromophenol	4.5		10.00		45.0	22	101	0	0	
Surr: 2-Fluorobiphenyl	2.6		5.000		51.2	26.7	90.1	0	0	
Surr: 4-Terphenyl-d14	6.3		5.000		126	72.3	147	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203496**

23-Mar-22

Client: Marathon

Project: 2022 Quarterly Sampling 1st Qtr

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **A86433**	RunNo: **86433**
Prep Date:	Analysis Date: **3/11/2022**	SeqNo: **3049397** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **A86433**	RunNo: **86433**
Prep Date:	Analysis Date: **3/11/2022**	SeqNo: **3049422** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	9.7		10.00		96.8	70	130			

Sample ID: **2.5ug lcs gro**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **R86565**	RunNo: **86565**
Prep Date:	Analysis Date: **3/17/2022**	SeqNo: **3055144** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.43	0.050	0.5000	0	86.8	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			

Sample ID: **2203496-001ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **EB-3-8-22**	Batch ID: **R86565**	RunNo: **86565**
Prep Date:	Analysis Date: **3/17/2022**	SeqNo: **3055146** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.42	0.050	0.5000	0	84.0	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			

Sample ID: **2203496-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **EB-3-8-22**	Batch ID: **R86565**	RunNo: **86565**
Prep Date:	Analysis Date: **3/17/2022**	SeqNo: **3055147** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.42	0.050	0.5000	0	83.4	70	130	6.90	20	
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130	0	0	

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **R86565**	RunNo: **86565**
Prep Date:	Analysis Date: **3/17/2022**	SeqNo: **3055166** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.042	0.050								J
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: Marathon | Work Order Number: 2203496 | RcptNo: 1

Received By: Tracy Casarrubias 3/9/2022 8:00:00 AM

Completed By: Tracy Casarrubias 3/9/2022 8:25:26 AM

Reviewed By: Sac 3/9/22

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	KPG 3/9/22
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☑	No ☒	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: 18 9 (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted? KPG 3/9/22 yes
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by: KPG 3/9/22

Labeled by: JR 3/9/22

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks: Added 0.5ml of HNO_3 to sample 006D for proper pH <2 - KPG 3/9/22

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.1	Good	Yes			
2	1.6	Good	Yes			
3	0	Good	Yes			
4	0.1	Good	Yes			

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: Marathon

Work Order Number: 2203496

RcptNo: 1

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
5	1.0	Good	Yes			

Released to Imaging: 4/21/2023 9:40:26 AM
Received by OCD: 4/21/2023 9:21:57 AM

Chain of Custody Record

Client:	Marathon Gallup Refinery
Mailing Address:	92 Giant Crossing Road, Jamestown, NM,87347
Phone #:	808-640-1823
email or Fax#:	
QA/QC Package:	X Standard ☐ Level 4 (Full Validation)
Accreditation:	☐ Az Compliance ☐ NELAC ☐ Other
EDD (Type)	

X Standard Rush

Project Name: **2022 GW Sampling 1st Quarter**

Project #: **697-080-001**

Project Manager: Lesli Alexander/Mackensie Swift

Sampler: Hilario Trejo

On Ice: ☒ Yes ☐ No

# of Coolers: 5

Cooler Temp(including CF): See Remarks

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2203496	See Analyte List	8260B: VOC	8270C: SVOC	8270C SIM: PAH, 1,4 Dioxane	8015: TPH GRO/DRO/MRO	E200.7: Metals	E200.7: Dissolved Metals	E245.1 Mercury	E504.1: EDB	E335.4: Cyanide Subbed		537.1: PFAS	SM 5201B: BOD	410.4: COD	SM9223B E. Coli
3/8/2022	8:20	GW	EB-3-8-22	13		001	X	X	X	X	X	X	X	X	X	X					
3/8/2022	8:20	GW	BW-5C	13		002	X	X	X	X	X	X	X	X	X	X					
3/8/2022	9:00	GW	BW-5B	13		003	X	X	X	X	X	X	X	X	X	X					
3/8/2022	9:25	GW	OW-50	13		004	X	X	X	X	X	X	X	X	X	X					
3/8/2022	9:50	GW	OW-52	13		005	X	X	X	X	X	X	X	X	X	X					
3/8/2022	10:15	GW	OW-29	13		006	X	X	X	X	X	X	X	X	X	X					
3/8/2022	10:45	GW	MWTF-43	13		007	X	X	X	X	X	X	X	X	X	X					
3/8/2022	11:00	GW	OW-10	13		008	X	X	X	X	X	X	X	X	X	X					
3/8/2022	[illegible]	GW	FB DUP-3-8-22	13		009	X	X	X	X	X	X	X	X	X	X					
3/8/2022	11:00	water	FB 3-8-22	2		010		X													
			Trip Blank			011															

Date	Time:	Relinquished by:	Received by:	Via:	Date	Time
3-8-22	1:00	Hilario Trejo		Courier	3/9/22	8:00
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

1.) 0.1 - 0 = 0.1
2.) 1.6 - 0 = 1.6
3.) 0 - 0 = 0
4.) 0.1 - 0 = 0.1
5.) 1.0 - 0 = 1.0

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

March 21, 2022

Brian McLoughlin

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX:

RE: 2022 GW Sampling 1St Quarter OrderNo.: 2203571

Dear Brian McLoughlin:

Hall Environmental Analysis Laboratory received 3 sample(s) on 3/10/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2203571**
Date Reported: **3/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-41
Project: 2022 GW Sampling 1St Quarter
Collection Date: 3/9/2022 9:35:00 AM
Lab ID: 2203571-001
Matrix: GROUNDWA
Received Date: 3/10/2022 8:00:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
SM 2540D: TSS							Analyst: **KS**	
Suspended Solids	ND	4.0	4.0		mg/L	1	3/17/2022 7:22:00 AM	66210

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2203571**
Date Reported: **3/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-32
Project: 2022 GW Sampling 1St Quarter
Collection Date: 3/9/2022 10:00:00 AM
Lab ID: 2203571-002
Matrix: GROUNDWA
Received Date: 3/10/2022 8:00:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
SM 2540D: TSS							Analyst: **KS**	
Suspended Solids	91	4.0	4.0		mg/L	1	3/17/2022 7:22:00 AM	66210

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2203571**
Date Reported: **3/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-34
Project: 2022 GW Sampling 1St Quarter
Collection Date: 3/9/2022 10:20:00 AM
Lab ID: 2203571-003
Matrix: GROUNDWA
Received Date: 3/10/2022 8:00:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
SM 2540D: TSS							Analyst: **KS**	
Suspended Solids	27	4.0	4.0		mg/L	1	3/17/2022 7:22:00 AM	66210

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203571**

21-Mar-22

Client: Marathon

Project: 2022 GW Sampling 1St Quarter

Sample ID: **MB-66210**	SampType: **MBLK**	TestCode: **SM 2540D: TSS**							
Client ID: **PBW**	Batch ID: **66210**	RunNo: **86525**							
Prep Date: **3/16/2022**	Analysis Date: **3/17/2022**	SeqNo: **3053365**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Suspended Solids	ND	4.0								

Sample ID: **LCS-66210**	SampType: **LCS**	TestCode: **SM 2540D: TSS**							
Client ID: **LCSW**	Batch ID: **66210**	RunNo: **86525**							
Prep Date: **3/16/2022**	Analysis Date: **3/17/2022**	SeqNo: **3053366**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Suspended Solids	92	4.0	92.40	0	99.6	83.44	119.05			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: Marathon Work Order Number: 2203571 RcptNo: 1

Received By: Cheyenne Cason 3/10/2022 8:00:00 AM
Completed By: Cheyenne Cason 3/10/2022 8:35:08 AM
Reviewed By: TMC 3/10/22

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☐ No ☐ NA ☑
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: (<2 or >12 unless noted)
Adjusted?
Checked by: CM 3/10/22

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.8	Good	Yes			
2	3.5	Good	Yes			
3	0.9	Good	Yes			
4	0.9	Good	Yes			

Received by OCD: 4/21/2023 9:21:57 AM
Page 479 of 508

Chain of Custody Record

Client: Marathon Gallup Refinery

Mailing Address: 92 Giant Crossing Road
Jamestown, NM,87347

Phone #: 808-640-1823

email or Fax#:

QA/QC Package:
X Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

X EDD (Type)

X Standard Rush

Project Name:
2022 GW Sampling 1st Quarter

Project #: **697-080-001**

Project Manager:
James Hageman/Brian McLoughlin

Sampler:

On Ice: ☒ Yes ☐ No

# of Coolers: 4

Cooler Temp(including CF): See Remark

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2203571	Analysis Request: TSS
3-5-22	9:35	GW	MKTF-41	1		001	X
3-5-22	10:00	GW	MKTF-32	1		002	X
3-5-22	10:20	GW	MKTF-34	1		003	X

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
3/9/22	13:00		Cmc Courier		3/10/22	0800

2.8-0=2.8
3.5-0=3.5
0.9-0=0.9
0.9-0=0.9

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Released to Imaging: 4/21/2023 9:40:26 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

March 24, 2022

Lesli Alexander

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX (505) 632-3911

RE: 2022 Quarterly Sampling 1st Qtr OrderNo.: 2203574

Dear Lesli Alexander:

Hall Environmental Analysis Laboratory received 10 sample(s) on 3/10/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Case Narrative

WO#: **2203574**
Date: **3/24/2022**

CLIENT: Marathon
Project: 2022 Quarterly Sampling 1st Qtr

Analytical Notes Regarding EPA Method 8270 and EPA Method 8015D:
"S" flagged surrogates are due to sample dilution and/or matrix interferences.

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-42
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022 9:00:00 AM
Lab ID: 2203574-001A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	9.5	0.23	1.0		µg/L	1	3/17/2022 6:40:56 PM	R86565
Toluene	0.43	0.20	1.0	J	µg/L	1	3/17/2022 6:40:56 PM	R86565
Ethylbenzene	1.2	0.21	1.0		µg/L	1	3/17/2022 6:40:56 PM	R86565
Methyl tert-butyl ether (MTBE)	1.2	0.39	1.0		µg/L	1	3/17/2022 6:40:56 PM	R86565
1,2,4-Trimethylbenzene	6.3	0.12	1.0		µg/L	1	3/17/2022 6:40:56 PM	R86565
1,3,5-Trimethylbenzene	2.1	0.18	1.0		µg/L	1	3/17/2022 6:40:56 PM	R86565
1,2-Dichloroethane (EDC)	1.3	0.25	1.0		µg/L	1	3/17/2022 6:40:56 PM	R86565
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/17/2022 6:40:56 PM	R86565
Acetone	ND	2.5	10		µg/L	1	3/17/2022 6:40:56 PM	R86565
Bromomethane	ND	0.85	3.0		µg/L	1	3/17/2022 6:40:56 PM	R86565
2-Butanone	ND	2.0	10		µg/L	1	3/17/2022 6:40:56 PM	R86565
Carbon disulfide	ND	0.59	10		µg/L	1	3/17/2022 6:40:56 PM	R86565
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/17/2022 6:40:56 PM	R86565
Chloroform	ND	0.13	1.0		µg/L	1	3/17/2022 6:40:56 PM	R86565
Chloromethane	0.68	0.41	3.0	J	µg/L	1	3/17/2022 6:40:56 PM	R86565
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/17/2022 6:40:56 PM	R86565
1,1-Dichloroethane	0.68	0.27	1.0	J	µg/L	1	3/17/2022 6:40:56 PM	R86565
1,1-Dichloroethene	1.1	0.20	1.0		µg/L	1	3/17/2022 6:40:56 PM	R86565
Isopropylbenzene	1.5	0.18	1.0		µg/L	1	3/17/2022 6:40:56 PM	R86565
4-Isopropyltoluene	0.37	0.20	1.0	J	µg/L	1	3/17/2022 6:40:56 PM	R86565
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/17/2022 6:40:56 PM	R86565
n-Butylbenzene	0.46	0.25	3.0	J	µg/L	1	3/17/2022 6:40:56 PM	R86565
n-Propylbenzene	1.6	0.18	1.0		µg/L	1	3/17/2022 6:40:56 PM	R86565
sec-Butylbenzene	0.38	0.14	1.0	J	µg/L	1	3/17/2022 6:40:56 PM	R86565
Styrene	ND	0.14	1.0		µg/L	1	3/17/2022 6:40:56 PM	R86565
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/17/2022 6:40:56 PM	R86565
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/17/2022 6:40:56 PM	R86565
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/17/2022 6:40:56 PM	R86565
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/17/2022 6:40:56 PM	R86565
Xylenes, Total	26	0.37	1.5		µg/L	1	3/17/2022 6:40:56 PM	R86565
Surr: 1,2-Dichloroethane-d4	91.0	0	70-130		%Rec	1	3/17/2022 6:40:56 PM	R86565
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	3/17/2022 6:40:56 PM	R86565
Surr: Dibromofluoromethane	93.0	0	70-130		%Rec	1	3/17/2022 6:40:56 PM	R86565
Surr: Toluene-d8	105	0	70-130		%Rec	1	3/17/2022 6:40:56 PM	R86565
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.21	0.012	0.050		mg/L	1	3/17/2022 6:40:56 PM	R86565
Surr: 4-Bromofluorobenzene	106	0	70-130		%Rec	1	3/17/2022 6:40:56 PM	R86565

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-42
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022 9:00:00 AM
Lab ID: 2203574-001B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	0.12	0.035	0.095	D	µg/L	10	3/17/2022 11:28:00 AM	66232

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-42
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022 9:00:00 AM
Lab ID: 2203574-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	23	0.32	1.3		mg/L	20	3/15/2022 11:52:48 AM	66129
Motor Oil Range Organics (MRO)	ND	1.0	1.6	D	mg/L	20	3/15/2022 11:52:48 AM	66129
Surr: DNOP	0	0	42.2-138	S	%Rec	20	3/15/2022 11:52:48 AM	66129
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	11	200	D	µg/L	10	3/16/2022 3:40:23 PM	66111
Bis(2-ethylhexyl)phthalate	ND	45	100	D	µg/L	10	3/16/2022 3:40:23 PM	66111
Di-n-butyl phthalate	ND	65	100	D	µg/L	10	3/16/2022 3:40:23 PM	66111
Di-n-octyl phthalate	ND	31	200	D	µg/L	10	3/16/2022 3:40:23 PM	66111
1,4-Dichlorobenzene	ND	7.0	50	D	µg/L	10	3/16/2022 3:40:23 PM	66111
Diethyl phthalate	ND	39	100	D	µg/L	10	3/16/2022 3:40:23 PM	66111
Dimethyl phthalate	ND	20	100	D	µg/L	10	3/16/2022 3:40:23 PM	66111
2,4-Dimethylphenol	ND	9.7	50	D	µg/L	10	3/16/2022 3:40:23 PM	66111
2,4-Dinitrophenol	ND	5.0	50	D	µg/L	10	3/16/2022 3:40:23 PM	66111
2-Methylphenol	ND	5.1	50	D	µg/L	10	3/16/2022 3:40:23 PM	66111
3+4-Methylphenol	ND	4.5	50	D	µg/L	10	3/16/2022 3:40:23 PM	66111
Phenol	ND	3.3	50	D	µg/L	10	3/16/2022 3:40:23 PM	66111
Pyridine	ND	100	100	D	µg/L	10	3/16/2022 3:40:23 PM	66111
2,4,6-Trichlorophenol	ND	4.3	50	D	µg/L	10	3/16/2022 3:40:23 PM	66111
Surr: 2-Fluorophenol	0	0	29.4-87.7	SD	%Rec	10	3/16/2022 3:40:23 PM	66111
Surr: Phenol-d5	0	0	28.5-64.7	SD	%Rec	10	3/16/2022 3:40:23 PM	66111
Surr: 2,4,6-Tribromophenol	0	0	18.6-129	SD	%Rec	10	3/16/2022 3:40:23 PM	66111
Surr: Nitrobenzene-d5	0	0	36.9-103	SD	%Rec	10	3/16/2022 3:40:23 PM	66111
Surr: 2-Fluorobiphenyl	0	0	38.1-99.9	SD	%Rec	10	3/16/2022 3:40:23 PM	66111
Surr: 4-Terphenyl-d14	0	0	48-155	SD	%Rec	10	3/16/2022 3:40:23 PM	66111
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.95	20	D	µg/L	20	3/17/2022 4:40:00 PM	66214
Naphthalene	ND	0.67	2.0	D	µg/L	20	3/17/2022 4:40:00 PM	66214
1-Methylnaphthalene	ND	0.48	2.0	D	µg/L	20	3/17/2022 4:40:00 PM	66214
2-Methylnaphthalene	ND	0.67	2.0	D	µg/L	20	3/17/2022 4:40:00 PM	66214
Acenaphthene	ND	0.61	2.0	D	µg/L	20	3/17/2022 4:40:00 PM	66214
Fluorene	ND	0.61	2.0	D	µg/L	20	3/17/2022 4:40:00 PM	66214
Phenanthrene	ND	1.1	2.0	D	µg/L	20	3/17/2022 4:40:00 PM	66214
Anthracene	ND	0.67	2.0	D	µg/L	20	3/17/2022 4:40:00 PM	66214
Fluoranthene	ND	2.0	4.0	D	µg/L	20	3/17/2022 4:40:00 PM	66214
Pyrene	ND	3.2	4.0	D	µg/L	20	3/17/2022 4:40:00 PM	66214
Benz(a)anthracene	ND	0.73	2.0	D	µg/L	20	3/17/2022 4:40:00 PM	66214
Chrysene	ND	0.48	2.0	D	µg/L	20	3/17/2022 4:40:00 PM	66214
Benzo(b)fluoranthene	ND	1.1	2.0	D	µg/L	20	3/17/2022 4:40:00 PM	66214
Indeno(1,2,3-cd)pyrene	ND	0.87	6.0	D	µg/L	20	3/17/2022 4:40:00 PM	66214

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-42
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022 9:00:00 AM
Lab ID: 2203574-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	0	0	31.6-100	SD	%Rec	20	3/17/2022 4:40:00 PM	66214
Surr: 2-Fluorobiphenyl	0	0	26.7-90.1	SD	%Rec	20	3/17/2022 4:40:00 PM	66214
Surr: 4-Terphenyl-d14	0	0	72.3-147	SD	%Rec	20	3/17/2022 4:40:00 PM	66214

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-42
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022 9:00:00 AM
Lab ID: 2203574-001D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **bcv**	
Cobalt	0.00028	0.00017	0.0010	J	mg/L	1	3/17/2022 3:40:20 PM	66151
Vanadium	0.060	0.0029	0.0050		mg/L	5	3/21/2022 2:22:30 PM	66151
Antimony	ND	0.00044	0.0010		mg/L	1	3/17/2022 3:40:20 PM	66151
Arsenic	0.0024	0.00013	0.0010		mg/L	1	3/17/2022 3:40:20 PM	66151
Barium	0.059	0.0023	0.0050		mg/L	5	3/15/2022 7:44:55 PM	66151
Beryllium	ND	0.00025	0.0010		mg/L	1	3/17/2022 3:40:20 PM	66151
Cadmium	ND	0.000080	0.00050		mg/L	1	3/17/2022 3:40:20 PM	66151
Chromium	0.0096	0.00056	0.0010		mg/L	1	3/17/2022 3:40:20 PM	66151
Lead	0.00025	0.000061	0.00050	J	mg/L	1	3/17/2022 3:40:20 PM	66151
Nickel	0.00063	0.00048	0.0010	J	mg/L	1	3/17/2022 3:40:20 PM	66151
Selenium	0.00099	0.00037	0.0010	J	mg/L	1	3/17/2022 3:40:20 PM	66151
Silver	ND	0.00022	0.00050		mg/L	1	3/17/2022 3:40:20 PM	66151
Zinc	ND	0.0038	0.010		mg/L	1	3/17/2022 3:40:20 PM	66151
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.000092	0.000091	0.00020	J	mg/L	1	3/18/2022 3:18:56 PM	66259

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-42
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022 9:00:00 AM
Lab ID: 2203574-001E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Cobalt	ND	0.0024	0.0060		mg/L	1	3/11/2022 12:26:45 PM	C86413
Silver	ND	0.0013	0.0050		mg/L	1	3/11/2022 12:26:45 PM	C86413
Vanadium	0.058	0.0017	0.050		mg/L	1	3/11/2022 12:26:45 PM	C86413
Zinc	0.011	0.0032	0.010		mg/L	1	3/11/2022 12:26:45 PM	C86413
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	3/21/2022 4:38:52 PM	A86624
Arsenic	0.0023	0.00012	0.0010		mg/L	1	3/18/2022 1:52:29 PM	B86600
Barium	0.054	0.0023	0.0050		mg/L	5	3/18/2022 1:55:11 PM	B86600
Beryllium	ND	0.00020	0.0010		mg/L	1	3/18/2022 1:52:29 PM	B86600
Cadmium	ND	0.000066	0.00050		mg/L	1	3/18/2022 1:52:29 PM	B86600
Chromium	0.00030	0.00014	0.0010	J	mg/L	1	3/18/2022 1:52:29 PM	B86600
Lead	ND	0.000057	0.00050		mg/L	1	3/18/2022 1:52:29 PM	B86600
Nickel	ND	0.00048	0.0010		mg/L	1	3/18/2022 1:52:29 PM	B86600
Selenium	0.00083	0.00034	0.0010	J	mg/L	1	3/18/2022 1:52:29 PM	B86600
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.000092	0.000091	0.00020	J	mg/L	1	3/18/2022 3:21:07 PM	66259

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-41
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022 9:35:00 AM
Lab ID: 2203574-002A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	0.35	0.23	1.0	J	µg/L	1	3/17/2022 8:07:21 PM	R86565
Toluene	ND	0.20	1.0		µg/L	1	3/17/2022 8:07:21 PM	R86565
Ethylbenzene	0.80	0.21	1.0	J	µg/L	1	3/17/2022 8:07:21 PM	R86565
Methyl tert-butyl ether (MTBE)	0.56	0.39	1.0	J	µg/L	1	3/17/2022 8:07:21 PM	R86565
1,2,4-Trimethylbenzene	2.2	0.12	1.0		µg/L	1	3/17/2022 8:07:21 PM	R86565
1,3,5-Trimethylbenzene	0.91	0.18	1.0	J	µg/L	1	3/17/2022 8:07:21 PM	R86565
1,2-Dichloroethane (EDC)	2.1	0.25	1.0		µg/L	1	3/17/2022 8:07:21 PM	R86565
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/17/2022 8:07:21 PM	R86565
Acetone	ND	2.5	10		µg/L	1	3/17/2022 8:07:21 PM	R86565
Bromomethane	ND	0.85	3.0		µg/L	1	3/17/2022 8:07:21 PM	R86565
2-Butanone	ND	2.0	10		µg/L	1	3/17/2022 8:07:21 PM	R86565
Carbon disulfide	ND	0.59	10		µg/L	1	3/17/2022 8:07:21 PM	R86565
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/17/2022 8:07:21 PM	R86565
Chloroform	ND	0.13	1.0		µg/L	1	3/17/2022 8:07:21 PM	R86565
Chloromethane	0.67	0.41	3.0	J	µg/L	1	3/17/2022 8:07:21 PM	R86565
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/17/2022 8:07:21 PM	R86565
1,1-Dichloroethane	1.9	0.27	1.0		µg/L	1	3/17/2022 8:07:21 PM	R86565
1,1-Dichloroethene	4.1	0.20	1.0		µg/L	1	3/17/2022 8:07:21 PM	R86565
Isopropylbenzene	0.18	0.18	1.0	J	µg/L	1	3/17/2022 8:07:21 PM	R86565
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/17/2022 8:07:21 PM	R86565
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/17/2022 8:07:21 PM	R86565
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/17/2022 8:07:21 PM	R86565
n-Propylbenzene	0.34	0.18	1.0	J	µg/L	1	3/17/2022 8:07:21 PM	R86565
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/17/2022 8:07:21 PM	R86565
Styrene	ND	0.14	1.0		µg/L	1	3/17/2022 8:07:21 PM	R86565
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/17/2022 8:07:21 PM	R86565
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/17/2022 8:07:21 PM	R86565
Trichloroethene (TCE)	0.35	0.20	1.0	J	µg/L	1	3/17/2022 8:07:21 PM	R86565
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/17/2022 8:07:21 PM	R86565
Xylenes, Total	6.6	0.37	1.5		µg/L	1	3/17/2022 8:07:21 PM	R86565
Surr: 1,2-Dichloroethane-d4	89.4	0	70-130		%Rec	1	3/17/2022 8:07:21 PM	R86565
Surr: 4-Bromofluorobenzene	98.2	0	70-130		%Rec	1	3/17/2022 8:07:21 PM	R86565
Surr: Dibromofluoromethane	95.3	0	70-130		%Rec	1	3/17/2022 8:07:21 PM	R86565
Surr: Toluene-d8	106	0	70-130		%Rec	1	3/17/2022 8:07:21 PM	R86565
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.085	0.012	0.050		mg/L	1	3/17/2022 8:07:21 PM	R86565
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	3/17/2022 8:07:21 PM	R86565

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-41
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022 9:35:00 AM
Lab ID: 2203574-002B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.034	0.094	D	µg/L	10	3/17/2022 11:58:09 AM	66232

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-41
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022 9:35:00 AM
Lab ID: 2203574-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	1.7	0.016	0.064		mg/L	1	3/15/2022 12:16:54 PM	66129
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/15/2022 12:16:54 PM	66129
Surr: DNOP	93.7	0	42.2-138		%Rec	1	3/15/2022 12:16:54 PM	66129
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	1.1	20		µg/L	1	3/16/2022 4:23:30 PM	66111
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/16/2022 4:23:30 PM	66111
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/16/2022 4:23:30 PM	66111
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/16/2022 4:23:30 PM	66111
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/16/2022 4:23:30 PM	66111
Diethyl phthalate	ND	3.9	10		µg/L	1	3/16/2022 4:23:30 PM	66111
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/16/2022 4:23:30 PM	66111
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/16/2022 4:23:30 PM	66111
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/16/2022 4:23:30 PM	66111
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/16/2022 4:23:30 PM	66111
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/16/2022 4:23:30 PM	66111
Phenol	ND	0.33	5.0		µg/L	1	3/16/2022 4:23:30 PM	66111
Pyridine	ND	10	10		µg/L	1	3/16/2022 4:23:30 PM	66111
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/16/2022 4:23:30 PM	66111
Surr: 2-Fluorophenol	31.8	0	29.4-87.7		%Rec	1	3/16/2022 4:23:30 PM	66111
Surr: Phenol-d5	24.8	0	28.5-64.7	S	%Rec	1	3/16/2022 4:23:30 PM	66111
Surr: 2,4,6-Tribromophenol	77.7	0	18.6-129		%Rec	1	3/16/2022 4:23:30 PM	66111
Surr: Nitrobenzene-d5	42.4	0	36.9-103		%Rec	1	3/16/2022 4:23:30 PM	66111
Surr: 2-Fluorobiphenyl	40.2	0	38.1-99.9		%Rec	1	3/16/2022 4:23:30 PM	66111
Surr: 4-Terphenyl-d14	75.3	0	48-155		%Rec	1	3/16/2022 4:23:30 PM	66111
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.95	20	D	µg/L	20	3/17/2022 5:25:00 PM	66214
Naphthalene	ND	0.67	2.0	D	µg/L	20	3/17/2022 5:25:00 PM	66214
1-Methylnaphthalene	ND	0.48	2.0	D	µg/L	20	3/17/2022 5:25:00 PM	66214
2-Methylnaphthalene	ND	0.67	2.0	D	µg/L	20	3/17/2022 5:25:00 PM	66214
Acenaphthene	ND	0.61	2.0	D	µg/L	20	3/17/2022 5:25:00 PM	66214
Fluorene	ND	0.61	2.0	D	µg/L	20	3/17/2022 5:25:00 PM	66214
Phenanthrene	ND	1.1	2.0	D	µg/L	20	3/17/2022 5:25:00 PM	66214
Anthracene	ND	0.67	2.0	D	µg/L	20	3/17/2022 5:25:00 PM	66214
Fluoranthene	ND	2.0	4.0	D	µg/L	20	3/17/2022 5:25:00 PM	66214
Pyrene	ND	3.2	4.0	D	µg/L	20	3/17/2022 5:25:00 PM	66214
Benz(a)anthracene	ND	0.73	2.0	D	µg/L	20	3/17/2022 5:25:00 PM	66214
Chrysene	ND	0.48	2.0	D	µg/L	20	3/17/2022 5:25:00 PM	66214
Benzo(b)fluoranthene	ND	1.1	2.0	D	µg/L	20	3/17/2022 5:25:00 PM	66214
Indeno(1,2,3-cd)pyrene	ND	0.87	6.0	D	µg/L	20	3/17/2022 5:25:00 PM	66214

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-41
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022 9:35:00 AM
Lab ID: 2203574-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	0	0	31.6-100	SD	%Rec	20	3/17/2022 5:25:00 PM	66214
Surr: 2-Fluorobiphenyl	0	0	26.7-90.1	SD	%Rec	20	3/17/2022 5:25:00 PM	66214
Surr: 4-Terphenyl-d14	0	0	72.3-147	SD	%Rec	20	3/17/2022 5:25:00 PM	66214

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-41
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022 9:35:00 AM
Lab ID: 2203574-002D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **bcv**	
Cobalt	ND	0.00017	0.0010		mg/L	1	3/15/2022 7:47:22 PM	66151
Vanadium	0.034	0.00058	0.0010		mg/L	1	3/17/2022 3:42:46 PM	66151
Antimony	ND	0.00044	0.0010		mg/L	1	3/15/2022 7:47:22 PM	66151
Arsenic	0.0021	0.00013	0.0010		mg/L	1	3/15/2022 7:47:22 PM	66151
Barium	0.063	0.0023	0.0050		mg/L	5	3/17/2022 3:45:13 PM	66151
Beryllium	ND	0.00025	0.0010		mg/L	1	3/15/2022 7:47:22 PM	66151
Cadmium	ND	0.000080	0.00050		mg/L	1	3/15/2022 7:47:22 PM	66151
Chromium	0.0013	0.00056	0.0010		mg/L	1	3/15/2022 7:47:22 PM	66151
Lead	0.000066	0.000061	0.00050	J	mg/L	1	3/15/2022 7:47:22 PM	66151
Nickel	ND	0.00048	0.0010		mg/L	1	3/15/2022 7:47:22 PM	66151
Selenium	0.037	0.00037	0.0010		mg/L	1	3/15/2022 7:47:22 PM	66151
Silver	ND	0.00022	0.00050		mg/L	1	3/15/2022 7:47:22 PM	66151
Zinc	ND	0.0038	0.010		mg/L	1	3/15/2022 7:47:22 PM	66151
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00011	0.000091	0.00020	J	mg/L	1	3/18/2022 3:23:15 PM	66259

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-41
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022 9:35:00 AM
Lab ID: 2203574-002E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Cobalt	ND	0.0024	0.0060		mg/L	1	3/11/2022 12:30:02 PM	C86413
Silver	ND	0.0013	0.0050		mg/L	1	3/11/2022 12:30:02 PM	C86413
Vanadium	0.030	0.0017	0.050	J	mg/L	1	3/11/2022 12:30:02 PM	C86413
Zinc	0.0097	0.0032	0.010	J	mg/L	1	3/11/2022 12:30:02 PM	C86413
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/21/2022 4:46:57 PM	A86624
Arsenic	0.0023	0.00012	0.0010		mg/L	1	3/18/2022 1:57:52 PM	B86600
Barium	0.066	0.0023	0.0050		mg/L	5	3/18/2022 2:00:33 PM	B86600
Beryllium	ND	0.00020	0.0010		mg/L	1	3/18/2022 1:57:52 PM	B86600
Cadmium	ND	0.000066	0.00050		mg/L	1	3/18/2022 1:57:52 PM	B86600
Chromium	0.0013	0.00014	0.0010		mg/L	1	3/18/2022 1:57:52 PM	B86600
Lead	ND	0.000057	0.00050		mg/L	1	3/18/2022 1:57:52 PM	B86600
Nickel	ND	0.00048	0.0010		mg/L	1	3/18/2022 1:57:52 PM	B86600
Selenium	0.037	0.00034	0.0010		mg/L	1	3/18/2022 1:57:52 PM	B86600
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00016	0.000091	0.00020	J	mg/L	1	3/18/2022 3:29:36 PM	66259

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-32
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022 10:00:00 AM
Lab ID: 2203574-003A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.45	2.0		µg/L	2	3/17/2022 9:04:48 PM	R86565
Toluene	ND	0.40	2.0		µg/L	2	3/17/2022 9:04:48 PM	R86565
Ethylbenzene	ND	0.43	2.0		µg/L	2	3/17/2022 9:04:48 PM	R86565
Methyl tert-butyl ether (MTBE)	870	7.9	20		µg/L	20	3/17/2022 8:36:06 PM	R86565
1,2,4-Trimethylbenzene	ND	0.24	2.0		µg/L	2	3/17/2022 9:04:48 PM	R86565
1,3,5-Trimethylbenzene	ND	0.36	2.0		µg/L	2	3/17/2022 9:04:48 PM	R86565
1,2-Dichloroethane (EDC)	9.5	0.51	2.0		µg/L	2	3/17/2022 9:04:48 PM	R86565
1,2-Dibromoethane (EDB)	ND	0.61	2.0		µg/L	2	3/17/2022 9:04:48 PM	R86565
Acetone	ND	5.0	20		µg/L	2	3/17/2022 9:04:48 PM	R86565
Bromomethane	ND	1.7	6.0		µg/L	2	3/17/2022 9:04:48 PM	R86565
2-Butanone	ND	4.1	20		µg/L	2	3/17/2022 9:04:48 PM	R86565
Carbon disulfide	ND	1.2	20		µg/L	2	3/17/2022 9:04:48 PM	R86565
Chlorobenzene	ND	0.31	2.0		µg/L	2	3/17/2022 9:04:48 PM	R86565
Chloroform	ND	0.27	2.0		µg/L	2	3/17/2022 9:04:48 PM	R86565
Chloromethane	1.3	0.82	6.0	J	µg/L	2	3/17/2022 9:04:48 PM	R86565
cis-1,2-DCE	2.0	0.78	2.0		µg/L	2	3/17/2022 9:04:48 PM	R86565
1,1-Dichloroethane	8.4	0.55	2.0		µg/L	2	3/17/2022 9:04:48 PM	R86565
1,1-Dichloroethene	18	0.40	2.0		µg/L	2	3/17/2022 9:04:48 PM	R86565
Isopropylbenzene	ND	0.37	2.0		µg/L	2	3/17/2022 9:04:48 PM	R86565
4-Isopropyltoluene	ND	0.40	2.0		µg/L	2	3/17/2022 9:04:48 PM	R86565
Methylene Chloride	ND	1.0	6.0		µg/L	2	3/17/2022 9:04:48 PM	R86565
n-Butylbenzene	ND	0.51	6.0		µg/L	2	3/17/2022 9:04:48 PM	R86565
n-Propylbenzene	ND	0.36	2.0		µg/L	2	3/17/2022 9:04:48 PM	R86565
sec-Butylbenzene	0.33	0.29	2.0	J	µg/L	2	3/17/2022 9:04:48 PM	R86565
Styrene	ND	0.27	2.0		µg/L	2	3/17/2022 9:04:48 PM	R86565
Tetrachloroethene (PCE)	ND	0.71	2.0		µg/L	2	3/17/2022 9:04:48 PM	R86565
1,1,1-Trichloroethane	ND	0.60	2.0		µg/L	2	3/17/2022 9:04:48 PM	R86565
Trichloroethene (TCE)	0.52	0.41	2.0	J	µg/L	2	3/17/2022 9:04:48 PM	R86565
Vinyl chloride	ND	0.64	2.0		µg/L	2	3/17/2022 9:04:48 PM	R86565
Xylenes, Total	ND	0.74	3.0		µg/L	2	3/17/2022 9:04:48 PM	R86565
Surr: 1,2-Dichloroethane-d4	92.3	0	70-130		%Rec	2	3/17/2022 9:04:48 PM	R86565
Surr: 4-Bromofluorobenzene	98.4	0	70-130		%Rec	2	3/17/2022 9:04:48 PM	R86565
Surr: Dibromofluoromethane	94.3	0	70-130		%Rec	2	3/17/2022 9:04:48 PM	R86565
Surr: Toluene-d8	107	0	70-130		%Rec	2	3/17/2022 9:04:48 PM	R86565
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	1.1	0.024	0.10		mg/L	2	3/17/2022 9:04:48 PM	R86565
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	2	3/17/2022 9:04:48 PM	R86565

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-32
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022 10:00:00 AM
Lab ID: 2203574-003B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.034	0.094	D	µg/L	10	3/17/2022 12:28:11 PM	66232

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-32
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022 10:00:00 AM
Lab ID: 2203574-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.23	0.016	0.064		mg/L	1	3/15/2022 12:41:06 PM	66129
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/15/2022 12:41:06 PM	66129
Surr: DNOP	95.4	0	42.2-138		%Rec	1	3/15/2022 12:41:06 PM	66129
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	1.1	20		µg/L	1	3/16/2022 5:06:36 PM	66111
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/16/2022 5:06:36 PM	66111
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/16/2022 5:06:36 PM	66111
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/16/2022 5:06:36 PM	66111
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/16/2022 5:06:36 PM	66111
Diethyl phthalate	ND	3.9	10		µg/L	1	3/16/2022 5:06:36 PM	66111
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/16/2022 5:06:36 PM	66111
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/16/2022 5:06:36 PM	66111
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/16/2022 5:06:36 PM	66111
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/16/2022 5:06:36 PM	66111
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/16/2022 5:06:36 PM	66111
Phenol	ND	0.33	5.0		µg/L	1	3/16/2022 5:06:36 PM	66111
Pyridine	ND	10	10		µg/L	1	3/16/2022 5:06:36 PM	66111
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/16/2022 5:06:36 PM	66111
Surr: 2-Fluorophenol	35.5	0	29.4-87.7		%Rec	1	3/16/2022 5:06:36 PM	66111
Surr: Phenol-d5	27.0	0	28.5-64.7	S	%Rec	1	3/16/2022 5:06:36 PM	66111
Surr: 2,4,6-Tribromophenol	72.5	0	18.6-129		%Rec	1	3/16/2022 5:06:36 PM	66111
Surr: Nitrobenzene-d5	43.7	0	36.9-103		%Rec	1	3/16/2022 5:06:36 PM	66111
Surr: 2-Fluorobiphenyl	43.4	0	38.1-99.9		%Rec	1	3/16/2022 5:06:36 PM	66111
Surr: 4-Terphenyl-d14	83.4	0	48-155		%Rec	1	3/16/2022 5:06:36 PM	66111
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	34	0.48	10		µg/L	10	3/21/2022 7:40:00 PM	66214
Naphthalene	ND	0.034	0.10		µg/L	1	3/17/2022 6:11:00 PM	66214
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/17/2022 6:11:00 PM	66214
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/17/2022 6:11:00 PM	66214
Acenaphthene	ND	0.031	0.10		µg/L	1	3/17/2022 6:11:00 PM	66214
Fluorene	ND	0.031	0.10		µg/L	1	3/17/2022 6:11:00 PM	66214
Phenanthrene	ND	0.057	0.10		µg/L	1	3/17/2022 6:11:00 PM	66214
Anthracene	ND	0.034	0.10		µg/L	1	3/17/2022 6:11:00 PM	66214
Fluoranthene	ND	0.10	0.20		µg/L	1	3/17/2022 6:11:00 PM	66214
Pyrene	ND	0.16	0.20		µg/L	1	3/17/2022 6:11:00 PM	66214
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/17/2022 6:11:00 PM	66214
Chrysene	ND	0.024	0.10		µg/L	1	3/17/2022 6:11:00 PM	66214
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/17/2022 6:11:00 PM	66214
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/17/2022 6:11:00 PM	66214

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-32
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022 10:00:00 AM
Lab ID: 2203574-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	60.5	0	31.6-100		%Rec	1	3/17/2022 6:11:00 PM	66214
Surr: 2-Fluorobiphenyl	56.0	0	26.7-90.1		%Rec	1	3/17/2022 6:11:00 PM	66214
Surr: 4-Terphenyl-d14	106	0	72.3-147		%Rec	1	3/17/2022 6:11:00 PM	66214

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-32
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022 10:00:00 AM
Lab ID: 2203574-003D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **bcv**	
Cobalt	0.00072	0.00017	0.0010	J	mg/L	1	3/15/2022 7:54:43 PM	66151
Vanadium	0.011	0.00058	0.0010		mg/L	1	3/17/2022 3:47:39 PM	66151
Antimony	ND	0.00044	0.0010		mg/L	1	3/15/2022 7:54:43 PM	66151
Arsenic	0.0028	0.00013	0.0010		mg/L	1	3/15/2022 7:54:43 PM	66151
Barium	0.069	0.0023	0.0050		mg/L	5	3/17/2022 3:50:05 PM	66151
Beryllium	ND	0.00025	0.0010		mg/L	1	3/15/2022 7:54:43 PM	66151
Cadmium	ND	0.000080	0.00050		mg/L	1	3/15/2022 7:54:43 PM	66151
Chromium	0.0014	0.00056	0.0010		mg/L	1	3/15/2022 7:54:43 PM	66151
Lead	0.00095	0.000061	0.00050		mg/L	1	3/15/2022 7:54:43 PM	66151
Nickel	0.0047	0.00048	0.0010		mg/L	1	3/15/2022 7:54:43 PM	66151
Selenium	0.00041	0.00037	0.0010	J	mg/L	1	3/15/2022 7:54:43 PM	66151
Silver	ND	0.00022	0.00050		mg/L	1	3/15/2022 7:54:43 PM	66151
Zinc	0.0047	0.0038	0.010	J	mg/L	1	3/15/2022 7:54:43 PM	66151
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.000098	0.000091	0.00020	J	mg/L	1	3/18/2022 3:35:59 PM	66260

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-32
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022 10:00:00 AM
Lab ID: 2203574-003E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Cobalt	ND	0.0024	0.0060		mg/L	1	3/11/2022 12:33:20 PM	C86413
Silver	ND	0.0013	0.0050		mg/L	1	3/11/2022 12:33:20 PM	C86413
Vanadium	0.0063	0.0017	0.050	J	mg/L	1	3/11/2022 12:33:20 PM	C86413
Zinc	0.0046	0.0032	0.010	J	mg/L	1	3/11/2022 12:33:20 PM	C86413
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/21/2022 4:49:38 PM	A86624
Arsenic	0.0025	0.00012	0.0010		mg/L	1	3/18/2022 2:03:15 PM	B86600
Barium	0.056	0.0023	0.0050		mg/L	5	3/18/2022 2:05:56 PM	B86600
Beryllium	ND	0.00020	0.0010		mg/L	1	3/18/2022 2:03:15 PM	B86600
Cadmium	ND	0.000066	0.00050		mg/L	1	3/18/2022 2:03:15 PM	B86600
Chromium	0.00023	0.00014	0.0010	J	mg/L	1	3/18/2022 2:03:15 PM	B86600
Lead	0.000095	0.000057	0.00050	J	mg/L	1	3/18/2022 2:03:15 PM	B86600
Nickel	0.0033	0.00048	0.0010		mg/L	1	3/18/2022 2:03:15 PM	B86600
Selenium	ND	0.00034	0.0010		mg/L	1	3/18/2022 2:03:15 PM	B86600
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/18/2022 3:38:07 PM	66260

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-34
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022 10:20:00 AM
Lab ID: 2203574-004A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	5.3	0.23	1.0		µg/L	1	3/17/2022 9:33:30 PM	R86565
Toluene	1.5	0.20	1.0		µg/L	1	3/17/2022 9:33:30 PM	R86565
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/17/2022 9:33:30 PM	R86565
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/17/2022 9:33:30 PM	R86565
1,2,4-Trimethylbenzene	0.40	0.12	1.0	J	µg/L	1	3/17/2022 9:33:30 PM	R86565
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/17/2022 9:33:30 PM	R86565
1,2-Dichloroethane (EDC)	0.54	0.25	1.0	J	µg/L	1	3/17/2022 9:33:30 PM	R86565
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/17/2022 9:33:30 PM	R86565
Acetone	16	2.5	10		µg/L	1	3/17/2022 9:33:30 PM	R86565
Bromomethane	ND	0.85	3.0		µg/L	1	3/17/2022 9:33:30 PM	R86565
2-Butanone	6.8	2.0	10	J	µg/L	1	3/17/2022 9:33:30 PM	R86565
Carbon disulfide	ND	0.59	10		µg/L	1	3/17/2022 9:33:30 PM	R86565
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/17/2022 9:33:30 PM	R86565
Chloroform	10	0.13	1.0		µg/L	1	3/17/2022 9:33:30 PM	R86565
Chloromethane	ND	0.41	3.0		µg/L	1	3/17/2022 9:33:30 PM	R86565
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/17/2022 9:33:30 PM	R86565
1,1-Dichloroethane	0.55	0.27	1.0	J	µg/L	1	3/17/2022 9:33:30 PM	R86565
1,1-Dichloroethene	0.57	0.20	1.0	J	µg/L	1	3/17/2022 9:33:30 PM	R86565
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/17/2022 9:33:30 PM	R86565
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/17/2022 9:33:30 PM	R86565
Methylene Chloride	1.1	0.50	3.0	J	µg/L	1	3/17/2022 9:33:30 PM	R86565
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/17/2022 9:33:30 PM	R86565
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/17/2022 9:33:30 PM	R86565
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/17/2022 9:33:30 PM	R86565
Styrene	ND	0.14	1.0		µg/L	1	3/17/2022 9:33:30 PM	R86565
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/17/2022 9:33:30 PM	R86565
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/17/2022 9:33:30 PM	R86565
Trichloroethene (TCE)	0.69	0.20	1.0	J	µg/L	1	3/17/2022 9:33:30 PM	R86565
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/17/2022 9:33:30 PM	R86565
Xylenes, Total	4.9	0.37	1.5		µg/L	1	3/17/2022 9:33:30 PM	R86565
Surr: 1,2-Dichloroethane-d4	93.2	0	70-130		%Rec	1	3/17/2022 9:33:30 PM	R86565
Surr: 4-Bromofluorobenzene	99.9	0	70-130		%Rec	1	3/17/2022 9:33:30 PM	R86565
Surr: Dibromofluoromethane	93.0	0	70-130		%Rec	1	3/17/2022 9:33:30 PM	R86565
Surr: Toluene-d8	111	0	70-130		%Rec	1	3/17/2022 9:33:30 PM	R86565
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	1.1	0.012	0.050		mg/L	1	3/17/2022 9:33:30 PM	R86565
Surr: 4-Bromofluorobenzene	105	0	70-130		%Rec	1	3/17/2022 9:33:30 PM	R86565

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-34
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022 10:20:00 AM
Lab ID: 2203574-004B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.035	0.094	D	µg/L	10	3/17/2022 12:58:19 PM	66232

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-34
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022 10:20:00 AM
Lab ID: 2203574-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.19	0.016	0.064		mg/L	1	3/15/2022 1:05:20 PM	66129
Motor Oil Range Organics (MRO)	0.20	0.052	0.080		mg/L	1	3/15/2022 1:05:20 PM	66129
Surr: DNOP	81.4	0	42.2-138		%Rec	1	3/15/2022 1:05:20 PM	66129
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	1.1	20		µg/L	1	3/16/2022 5:49:36 PM	66111
Bis(2-ethylhexyl)phthalate	6.2	4.5	10	J	µg/L	1	3/16/2022 5:49:36 PM	66111
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/16/2022 5:49:36 PM	66111
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/16/2022 5:49:36 PM	66111
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/16/2022 5:49:36 PM	66111
Diethyl phthalate	ND	3.9	10		µg/L	1	3/16/2022 5:49:36 PM	66111
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/16/2022 5:49:36 PM	66111
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/16/2022 5:49:36 PM	66111
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/16/2022 5:49:36 PM	66111
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/16/2022 5:49:36 PM	66111
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/16/2022 5:49:36 PM	66111
Phenol	ND	0.33	5.0		µg/L	1	3/16/2022 5:49:36 PM	66111
Pyridine	ND	10	10		µg/L	1	3/16/2022 5:49:36 PM	66111
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/16/2022 5:49:36 PM	66111
Surr: 2-Fluorophenol	0	0	29.4-87.7	S	%Rec	1	3/16/2022 5:49:36 PM	66111
Surr: Phenol-d5	5.83	0	28.5-64.7	S	%Rec	1	3/16/2022 5:49:36 PM	66111
Surr: 2,4,6-Tribromophenol	55.2	0	18.6-129		%Rec	1	3/16/2022 5:49:36 PM	66111
Surr: Nitrobenzene-d5	40.1	0	36.9-103		%Rec	1	3/16/2022 5:49:36 PM	66111
Surr: 2-Fluorobiphenyl	35.8	0	38.1-99.9	S	%Rec	1	3/16/2022 5:49:36 PM	66111
Surr: 4-Terphenyl-d14	77.4	0	48-155		%Rec	1	3/16/2022 5:49:36 PM	66111
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.048	1.0		µg/L	1	3/17/2022 6:56:00 PM	66214
Naphthalene	ND	0.034	0.10		µg/L	1	3/17/2022 6:56:00 PM	66214
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/17/2022 6:56:00 PM	66214
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/17/2022 6:56:00 PM	66214
Acenaphthene	ND	0.031	0.10		µg/L	1	3/17/2022 6:56:00 PM	66214
Fluorene	ND	0.031	0.10		µg/L	1	3/17/2022 6:56:00 PM	66214
Phenanthrene	ND	0.057	0.10		µg/L	1	3/17/2022 6:56:00 PM	66214
Anthracene	ND	0.034	0.10		µg/L	1	3/17/2022 6:56:00 PM	66214
Fluoranthene	ND	0.10	0.20		µg/L	1	3/17/2022 6:56:00 PM	66214
Pyrene	ND	0.16	0.20		µg/L	1	3/17/2022 6:56:00 PM	66214
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/17/2022 6:56:00 PM	66214
Chrysene	ND	0.024	0.10		µg/L	1	3/17/2022 6:56:00 PM	66214
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/17/2022 6:56:00 PM	66214
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/17/2022 6:56:00 PM	66214

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-34
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022 10:20:00 AM
Lab ID: 2203574-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	46.5	0	31.6-100		%Rec	1	3/17/2022 6:56:00 PM	66214
Surr: 2-Fluorobiphenyl	34.5	0	26.7-90.1		%Rec	1	3/17/2022 6:56:00 PM	66214
Surr: 4-Terphenyl-d14	96.5	0	72.3-147		%Rec	1	3/17/2022 6:56:00 PM	66214

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-34
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022 10:20:00 AM
Lab ID: 2203574-004D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **bcv**	
Cobalt	0.0077	0.00017	0.0010		mg/L	1	3/15/2022 7:57:09 PM	66151
Vanadium	0.0023	0.00058	0.0010		mg/L	1	3/17/2022 3:52:32 PM	66151
Antimony	ND	0.00044	0.0010		mg/L	1	3/15/2022 7:57:09 PM	66151
Arsenic	0.0030	0.00013	0.0010		mg/L	1	3/15/2022 7:57:09 PM	66151
Barium	0.17	0.0023	0.0050		mg/L	5	3/17/2022 6:19:39 PM	66151
Beryllium	ND	0.00025	0.0010		mg/L	1	3/15/2022 7:57:09 PM	66151
Cadmium	ND	0.000080	0.00050		mg/L	1	3/15/2022 7:57:09 PM	66151
Chromium	0.00074	0.00056	0.0010	J	mg/L	1	3/15/2022 7:57:09 PM	66151
Lead	0.0037	0.000061	0.00050		mg/L	1	3/15/2022 7:57:09 PM	66151
Nickel	0.0044	0.00048	0.0010		mg/L	1	3/15/2022 7:57:09 PM	66151
Selenium	0.00072	0.00037	0.0010	J	mg/L	1	3/15/2022 7:57:09 PM	66151
Silver	0.00041	0.00022	0.00050	J	mg/L	1	3/15/2022 7:57:09 PM	66151
Zinc	0.0086	0.0038	0.010	J	mg/L	1	3/15/2022 7:57:09 PM	66151
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00046	0.000091	0.00020		mg/L	1	3/18/2022 3:40:15 PM	66260

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-34
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022 10:20:00 AM
Lab ID: 2203574-004E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Cobalt	0.0080	0.0024	0.0060		mg/L	1	3/11/2022 12:36:39 PM	C86413
Silver	ND	0.0013	0.0050		mg/L	1	3/11/2022 12:36:39 PM	C86413
Vanadium	ND	0.0017	0.050		mg/L	1	3/11/2022 12:36:39 PM	C86413
Zinc	0.013	0.0032	0.010		mg/L	1	3/11/2022 12:36:39 PM	C86413
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	3/21/2022 4:52:20 PM	A86624
Arsenic	0.0020	0.00061	0.0050	J	mg/L	5	3/18/2022 2:08:37 PM	B86600
Barium	0.18	0.0023	0.0050		mg/L	5	3/18/2022 2:08:37 PM	B86600
Beryllium	ND	0.0010	0.0050		mg/L	5	3/18/2022 2:08:37 PM	B86600
Cadmium	ND	0.00033	0.0025		mg/L	5	3/18/2022 2:08:37 PM	B86600
Chromium	ND	0.00069	0.0050		mg/L	5	3/18/2022 2:08:37 PM	B86600
Lead	0.0014	0.00028	0.0025	J	mg/L	5	3/18/2022 2:08:37 PM	B86600
Nickel	ND	0.0024	0.0050		mg/L	5	3/18/2022 2:08:37 PM	B86600
Selenium	ND	0.0017	0.0050		mg/L	5	3/18/2022 2:08:37 PM	B86600
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00023	0.000091	0.00020		mg/L	1	3/18/2022 3:42:23 PM	66260

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-3
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022 10:40:00 AM
Lab ID: 2203574-005A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	3/17/2022 10:02:13 PM	R86565
Toluene	ND	0.20	1.0		µg/L	1	3/17/2022 10:02:13 PM	R86565
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/17/2022 10:02:13 PM	R86565
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/17/2022 10:02:13 PM	R86565
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/17/2022 10:02:13 PM	R86565
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/17/2022 10:02:13 PM	R86565
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	3/17/2022 10:02:13 PM	R86565
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/17/2022 10:02:13 PM	R86565
Acetone	ND	2.5	10		µg/L	1	3/17/2022 10:02:13 PM	R86565
Bromomethane	ND	0.85	3.0		µg/L	1	3/17/2022 10:02:13 PM	R86565
2-Butanone	ND	2.0	10		µg/L	1	3/17/2022 10:02:13 PM	R86565
Carbon disulfide	ND	0.59	10		µg/L	1	3/17/2022 10:02:13 PM	R86565
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/17/2022 10:02:13 PM	R86565
Chloroform	ND	0.13	1.0		µg/L	1	3/17/2022 10:02:13 PM	R86565
Chloromethane	0.80	0.41	3.0	J	µg/L	1	3/17/2022 10:02:13 PM	R86565
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/17/2022 10:02:13 PM	R86565
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/17/2022 10:02:13 PM	R86565
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/17/2022 10:02:13 PM	R86565
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/17/2022 10:02:13 PM	R86565
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/17/2022 10:02:13 PM	R86565
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/17/2022 10:02:13 PM	R86565
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/17/2022 10:02:13 PM	R86565
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/17/2022 10:02:13 PM	R86565
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/17/2022 10:02:13 PM	R86565
Styrene	ND	0.14	1.0		µg/L	1	3/17/2022 10:02:13 PM	R86565
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/17/2022 10:02:13 PM	R86565
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/17/2022 10:02:13 PM	R86565
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/17/2022 10:02:13 PM	R86565
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/17/2022 10:02:13 PM	R86565
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/17/2022 10:02:13 PM	R86565
Surr: 1,2-Dichloroethane-d4	89.8	0	70-130		%Rec	1	3/17/2022 10:02:13 PM	R86565
Surr: 4-Bromofluorobenzene	98.0	0	70-130		%Rec	1	3/17/2022 10:02:13 PM	R86565
Surr: Dibromofluoromethane	94.3	0	70-130		%Rec	1	3/17/2022 10:02:13 PM	R86565
Surr: Toluene-d8	108	0	70-130		%Rec	1	3/17/2022 10:02:13 PM	R86565
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.041	0.012	0.050	J	mg/L	1	3/17/2022 10:02:13 PM	R86565
Surr: 4-Bromofluorobenzene	105	0	70-130		%Rec	1	3/17/2022 10:02:13 PM	R86565

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-3
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022 10:40:00 AM
Lab ID: 2203574-005B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.034	0.094	D	µg/L	10	3/17/2022 1:28:28 PM	66232

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-3
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022 10:40:00 AM
Lab ID: 2203574-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.030	0.016	0.064	J	mg/L	1	3/15/2022 1:29:16 PM	66129
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/15/2022 1:29:16 PM	66129
Surr: DNOP	92.2	0	42.2-138		%Rec	1	3/15/2022 1:29:16 PM	66129
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	1.1	20		µg/L	1	3/16/2022 6:32:11 PM	66111
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/16/2022 6:32:11 PM	66111
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/16/2022 6:32:11 PM	66111
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/16/2022 6:32:11 PM	66111
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/16/2022 6:32:11 PM	66111
Diethyl phthalate	ND	3.9	10		µg/L	1	3/16/2022 6:32:11 PM	66111
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/16/2022 6:32:11 PM	66111
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/16/2022 6:32:11 PM	66111
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/16/2022 6:32:11 PM	66111
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/16/2022 6:32:11 PM	66111
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/16/2022 6:32:11 PM	66111
Phenol	ND	0.33	5.0		µg/L	1	3/16/2022 6:32:11 PM	66111
Pyridine	ND	10	10		µg/L	1	3/16/2022 6:32:11 PM	66111
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/16/2022 6:32:11 PM	66111
Surr: 2-Fluorophenol	35.7	0	29.4-87.7		%Rec	1	3/16/2022 6:32:11 PM	66111
Surr: Phenol-d5	27.0	0	28.5-64.7	S	%Rec	1	3/16/2022 6:32:11 PM	66111
Surr: 2,4,6-Tribromophenol	53.6	0	18.6-129		%Rec	1	3/16/2022 6:32:11 PM	66111
Surr: Nitrobenzene-d5	45.0	0	36.9-103		%Rec	1	3/16/2022 6:32:11 PM	66111
Surr: 2-Fluorobiphenyl	40.7	0	38.1-99.9		%Rec	1	3/16/2022 6:32:11 PM	66111
Surr: 4-Terphenyl-d14	86.0	0	48-155		%Rec	1	3/16/2022 6:32:11 PM	66111
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.048	1.0		µg/L	1	3/17/2022 7:42:00 PM	66214
Naphthalene	ND	0.034	0.10		µg/L	1	3/17/2022 7:42:00 PM	66214
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/17/2022 7:42:00 PM	66214
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/17/2022 7:42:00 PM	66214
Acenaphthene	ND	0.031	0.10		µg/L	1	3/17/2022 7:42:00 PM	66214
Fluorene	ND	0.031	0.10		µg/L	1	3/17/2022 7:42:00 PM	66214
Phenanthrene	ND	0.057	0.10		µg/L	1	3/17/2022 7:42:00 PM	66214
Anthracene	ND	0.034	0.10		µg/L	1	3/17/2022 7:42:00 PM	66214
Fluoranthene	ND	0.10	0.20		µg/L	1	3/17/2022 7:42:00 PM	66214
Pyrene	ND	0.16	0.20		µg/L	1	3/17/2022 7:42:00 PM	66214
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/17/2022 7:42:00 PM	66214
Chrysene	ND	0.024	0.10		µg/L	1	3/17/2022 7:42:00 PM	66214
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/17/2022 7:42:00 PM	66214
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/17/2022 7:42:00 PM	66214

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-3
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022 10:40:00 AM
Lab ID: 2203574-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	55.0	0	31.6-100		%Rec	1	3/17/2022 7:42:00 PM	66214
Surr: 2-Fluorobiphenyl	37.0	0	26.7-90.1		%Rec	1	3/17/2022 7:42:00 PM	66214
Surr: 4-Terphenyl-d14	97.0	0	72.3-147		%Rec	1	3/17/2022 7:42:00 PM	66214

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-3
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022 10:40:00 AM
Lab ID: 2203574-005D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **bcv**	
Cobalt	ND	0.00017	0.0010		mg/L	1	3/17/2022 3:57:25 PM	66191
Vanadium	0.0038	0.00058	0.0010		mg/L	1	3/17/2022 3:57:25 PM	66191
Antimony	ND	0.00044	0.0010		mg/L	1	3/17/2022 3:57:25 PM	66191
Arsenic	0.0038	0.00013	0.0010		mg/L	1	3/17/2022 3:57:25 PM	66191
Barium	0.011	0.00046	0.0010		mg/L	1	3/17/2022 3:57:25 PM	66191
Beryllium	ND	0.00025	0.0010		mg/L	1	3/17/2022 3:57:25 PM	66191
Cadmium	ND	0.000080	0.00050		mg/L	1	3/17/2022 3:57:25 PM	66191
Chromium	ND	0.00056	0.0010		mg/L	1	3/17/2022 3:57:25 PM	66191
Lead	ND	0.000061	0.00050		mg/L	1	3/17/2022 3:57:25 PM	66191
Nickel	0.00097	0.00048	0.0010	J	mg/L	1	3/17/2022 3:57:25 PM	66191
Selenium	0.0012	0.00037	0.0010		mg/L	1	3/17/2022 3:57:25 PM	66191
Silver	ND	0.00022	0.00050		mg/L	1	3/17/2022 3:57:25 PM	66191
Zinc	0.0080	0.0038	0.010	J	mg/L	1	3/17/2022 3:57:25 PM	66191
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/18/2022 3:44:32 PM	66260

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-3
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022 10:40:00 AM
Lab ID: 2203574-005E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Cobalt	0.0032	0.0024	0.0060	J	mg/L	1	3/11/2022 12:39:28 PM	C86413
Silver	ND	0.0013	0.0050		mg/L	1	3/11/2022 12:39:28 PM	C86413
Vanadium	0.0026	0.0017	0.050	J	mg/L	1	3/11/2022 12:39:28 PM	C86413
Zinc	0.012	0.0032	0.010		mg/L	1	3/11/2022 12:39:28 PM	C86413
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	3/21/2022 4:55:01 PM	A86624
Arsenic	0.0037	0.00061	0.0050	J	mg/L	5	3/21/2022 4:55:01 PM	A86624
Barium	0.013	0.0023	0.0050		mg/L	5	3/21/2022 4:55:01 PM	A86624
Beryllium	ND	0.0010	0.0050		mg/L	5	3/21/2022 4:55:01 PM	A86624
Cadmium	ND	0.00033	0.0025		mg/L	5	3/21/2022 4:55:01 PM	A86624
Chromium	ND	0.00069	0.0050		mg/L	5	3/21/2022 4:55:01 PM	A86624
Lead	ND	0.00028	0.0025		mg/L	5	3/21/2022 4:55:01 PM	A86624
Nickel	ND	0.0024	0.0050		mg/L	5	3/21/2022 4:55:01 PM	A86624
Selenium	ND	0.0017	0.0050		mg/L	5	3/21/2022 4:55:01 PM	A86624
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.000093	0.000091	0.00020	J	mg/L	1	3/18/2022 3:46:42 PM	66260

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-4
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022 8:35:00 AM
Lab ID: 2203574-006A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	3/18/2022 1:22:05 AM	R86565
Toluene	ND	0.20	1.0		µg/L	1	3/18/2022 1:22:05 AM	R86565
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/18/2022 1:22:05 AM	R86565
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/18/2022 1:22:05 AM	R86565
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/18/2022 1:22:05 AM	R86565
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/18/2022 1:22:05 AM	R86565
1,2-Dichloroethane (EDC)	0.42	0.25	1.0	J	µg/L	1	3/18/2022 1:22:05 AM	R86565
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/18/2022 1:22:05 AM	R86565
Acetone	ND	2.5	10		µg/L	1	3/18/2022 1:22:05 AM	R86565
Bromomethane	ND	0.85	3.0		µg/L	1	3/18/2022 1:22:05 AM	R86565
2-Butanone	ND	2.0	10		µg/L	1	3/18/2022 1:22:05 AM	R86565
Carbon disulfide	0.68	0.59	10	J	µg/L	1	3/18/2022 1:22:05 AM	R86565
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/18/2022 1:22:05 AM	R86565
Chloroform	ND	0.13	1.0		µg/L	1	3/18/2022 1:22:05 AM	R86565
Chloromethane	0.71	0.41	3.0	J	µg/L	1	3/18/2022 1:22:05 AM	R86565
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/18/2022 1:22:05 AM	R86565
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/18/2022 1:22:05 AM	R86565
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/18/2022 1:22:05 AM	R86565
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/18/2022 1:22:05 AM	R86565
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/18/2022 1:22:05 AM	R86565
Methylene Chloride	0.53	0.50	3.0	J	µg/L	1	3/18/2022 1:22:05 AM	R86565
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/18/2022 1:22:05 AM	R86565
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/18/2022 1:22:05 AM	R86565
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/18/2022 1:22:05 AM	R86565
Styrene	ND	0.14	1.0		µg/L	1	3/18/2022 1:22:05 AM	R86565
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/18/2022 1:22:05 AM	R86565
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/18/2022 1:22:05 AM	R86565
Trichloroethene (TCE)	0.22	0.20	1.0	J	µg/L	1	3/18/2022 1:22:05 AM	R86565
Vinyl chloride	0.46	0.32	1.0	J	µg/L	1	3/18/2022 1:22:05 AM	R86565
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/18/2022 1:22:05 AM	R86565
Surr: 1,2-Dichloroethane-d4	89.7	0	70-130		%Rec	1	3/18/2022 1:22:05 AM	R86565
Surr: 4-Bromofluorobenzene	99.2	0	70-130		%Rec	1	3/18/2022 1:22:05 AM	R86565
Surr: Dibromofluoromethane	93.7	0	70-130		%Rec	1	3/18/2022 1:22:05 AM	R86565
Surr: Toluene-d8	103	0	70-130		%Rec	1	3/18/2022 1:22:05 AM	R86565
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.042	0.012	0.050	J	mg/L	1	3/18/2022 1:22:05 AM	R86565
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	3/18/2022 1:22:05 AM	R86565

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-4
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022 8:35:00 AM
Lab ID: 2203574-006B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.034	0.093	D	µg/L	10	3/17/2022 1:58:43 PM	66232

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-4
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022 8:35:00 AM
Lab ID: 2203574-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.022	0.016	0.064	J	mg/L	1	3/15/2022 1:52:55 PM	66129
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/15/2022 1:52:55 PM	66129
Surr: DNOP	102	0	42.2-138		%Rec	1	3/15/2022 1:52:55 PM	66129
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	1.1	20		µg/L	1	3/16/2022 7:14:55 PM	66111
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/16/2022 7:14:55 PM	66111
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/16/2022 7:14:55 PM	66111
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/16/2022 7:14:55 PM	66111
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/16/2022 7:14:55 PM	66111
Diethyl phthalate	ND	3.9	10		µg/L	1	3/16/2022 7:14:55 PM	66111
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/16/2022 7:14:55 PM	66111
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/16/2022 7:14:55 PM	66111
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/16/2022 7:14:55 PM	66111
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/16/2022 7:14:55 PM	66111
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/16/2022 7:14:55 PM	66111
Phenol	ND	0.33	5.0		µg/L	1	3/16/2022 7:14:55 PM	66111
Pyridine	ND	10	10		µg/L	1	3/16/2022 7:14:55 PM	66111
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/16/2022 7:14:55 PM	66111
Surr: 2-Fluorophenol	37.6	0	29.4-87.7		%Rec	1	3/16/2022 7:14:55 PM	66111
Surr: Phenol-d5	28.0	0	28.5-64.7	S	%Rec	1	3/16/2022 7:14:55 PM	66111
Surr: 2,4,6-Tribromophenol	57.0	0	18.6-129		%Rec	1	3/16/2022 7:14:55 PM	66111
Surr: Nitrobenzene-d5	45.5	0	36.9-103		%Rec	1	3/16/2022 7:14:55 PM	66111
Surr: 2-Fluorobiphenyl	46.2	0	38.1-99.9		%Rec	1	3/16/2022 7:14:55 PM	66111
Surr: 4-Terphenyl-d14	88.7	0	48-155		%Rec	1	3/16/2022 7:14:55 PM	66111
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.048	1.0		µg/L	1	3/17/2022 8:26:00 PM	66214
Naphthalene	ND	0.034	0.10		µg/L	1	3/17/2022 8:26:00 PM	66214
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/17/2022 8:26:00 PM	66214
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/17/2022 8:26:00 PM	66214
Acenaphthene	ND	0.031	0.10		µg/L	1	3/17/2022 8:26:00 PM	66214
Fluorene	ND	0.031	0.10		µg/L	1	3/17/2022 8:26:00 PM	66214
Phenanthrene	ND	0.057	0.10		µg/L	1	3/17/2022 8:26:00 PM	66214
Anthracene	ND	0.034	0.10		µg/L	1	3/17/2022 8:26:00 PM	66214
Fluoranthene	ND	0.10	0.20		µg/L	1	3/17/2022 8:26:00 PM	66214
Pyrene	ND	0.16	0.20		µg/L	1	3/17/2022 8:26:00 PM	66214
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/17/2022 8:26:00 PM	66214
Chrysene	ND	0.024	0.10		µg/L	1	3/17/2022 8:26:00 PM	66214
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/17/2022 8:26:00 PM	66214
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/17/2022 8:26:00 PM	66214

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-4
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022 8:35:00 AM
Lab ID: 2203574-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	52.5	0	31.6-100		%Rec	1	3/17/2022 8:26:00 PM	66214
Surr: 2-Fluorobiphenyl	34.0	0	26.7-90.1		%Rec	1	3/17/2022 8:26:00 PM	66214
Surr: 4-Terphenyl-d14	89.5	0	72.3-147		%Rec	1	3/17/2022 8:26:00 PM	66214

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-4
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022 8:35:00 AM
Lab ID: 2203574-006D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **bcv**	
Cobalt	ND	0.00017	0.0010		mg/L	1	3/17/2022 3:59:51 PM	66191
Vanadium	0.0012	0.00058	0.0010		mg/L	1	3/17/2022 3:59:51 PM	66191
Antimony	ND	0.00044	0.0010		mg/L	1	3/17/2022 3:59:51 PM	66191
Arsenic	0.0019	0.00013	0.0010		mg/L	1	3/17/2022 3:59:51 PM	66191
Barium	0.012	0.00046	0.0010		mg/L	1	3/17/2022 3:59:51 PM	66191
Beryllium	ND	0.00025	0.0010		mg/L	1	3/17/2022 3:59:51 PM	66191
Cadmium	ND	0.000080	0.00050		mg/L	1	3/17/2022 3:59:51 PM	66191
Chromium	ND	0.00056	0.0010		mg/L	1	3/17/2022 3:59:51 PM	66191
Lead	ND	0.000061	0.00050		mg/L	1	3/17/2022 3:59:51 PM	66191
Nickel	ND	0.00048	0.0010		mg/L	1	3/17/2022 3:59:51 PM	66191
Selenium	0.0013	0.00037	0.0010		mg/L	1	3/17/2022 3:59:51 PM	66191
Silver	ND	0.00022	0.00050		mg/L	1	3/17/2022 3:59:51 PM	66191
Zinc	0.014	0.0038	0.010		mg/L	1	3/17/2022 3:59:51 PM	66191
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00010	0.000091	0.00020	J	mg/L	1	3/18/2022 3:48:51 PM	66260

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-4
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022 8:35:00 AM
Lab ID: 2203574-006E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Cobalt	0.0025	0.0024	0.0060	J	mg/L	1	3/11/2022 12:47:48 PM	C86413
Silver	ND	0.0013	0.0050		mg/L	1	3/11/2022 12:47:48 PM	C86413
Vanadium	ND	0.0017	0.050		mg/L	1	3/11/2022 12:47:48 PM	C86413
Zinc	0.022	0.0032	0.010		mg/L	1	3/11/2022 12:47:48 PM	C86413
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	3/21/2022 4:57:42 PM	A86624
Arsenic	0.00094	0.00061	0.0050	J	mg/L	5	3/21/2022 4:57:42 PM	A86624
Barium	0.012	0.0023	0.0050		mg/L	5	3/21/2022 4:57:42 PM	A86624
Beryllium	ND	0.0010	0.0050		mg/L	5	3/21/2022 4:57:42 PM	A86624
Cadmium	ND	0.00033	0.0025		mg/L	5	3/21/2022 4:57:42 PM	A86624
Chromium	ND	0.00069	0.0050		mg/L	5	3/21/2022 4:57:42 PM	A86624
Lead	ND	0.00028	0.0025		mg/L	5	3/21/2022 4:57:42 PM	A86624
Nickel	ND	0.0024	0.0050		mg/L	5	3/21/2022 4:57:42 PM	A86624
Selenium	ND	0.0017	0.0050		mg/L	5	3/21/2022 4:57:42 PM	A86624
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.000093	0.000091	0.00020	J	mg/L	1	3/18/2022 3:51:02 PM	66260

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-9-22
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022
Lab ID: 2203574-007A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	21	0.45	2.0		µg/L	2	3/18/2022 1:50:31 AM	R86565
Toluene	1.2	0.40	2.0	J	µg/L	2	3/18/2022 1:50:31 AM	R86565
Ethylbenzene	2.7	0.43	2.0		µg/L	2	3/18/2022 1:50:31 AM	R86565
Methyl tert-butyl ether (MTBE)	2.5	0.79	2.0		µg/L	2	3/18/2022 1:50:31 AM	R86565
1,2,4-Trimethylbenzene	13	0.24	2.0		µg/L	2	3/18/2022 1:50:31 AM	R86565
1,3,5-Trimethylbenzene	4.6	0.36	2.0		µg/L	2	3/18/2022 1:50:31 AM	R86565
1,2-Dichloroethane (EDC)	2.6	0.51	2.0		µg/L	2	3/18/2022 1:50:31 AM	R86565
1,2-Dibromoethane (EDB)	ND	0.61	2.0		µg/L	2	3/18/2022 1:50:31 AM	R86565
Acetone	ND	5.0	20		µg/L	2	3/18/2022 1:50:31 AM	R86565
Bromomethane	ND	1.7	6.0		µg/L	2	3/18/2022 1:50:31 AM	R86565
2-Butanone	ND	4.1	20		µg/L	2	3/18/2022 1:50:31 AM	R86565
Carbon disulfide	ND	1.2	20		µg/L	2	3/18/2022 1:50:31 AM	R86565
Chlorobenzene	ND	0.31	2.0		µg/L	2	3/18/2022 1:50:31 AM	R86565
Chloroform	ND	0.27	2.0		µg/L	2	3/18/2022 1:50:31 AM	R86565
Chloromethane	1.3	0.82	6.0	J	µg/L	2	3/18/2022 1:50:31 AM	R86565
cis-1,2-DCE	ND	0.78	2.0		µg/L	2	3/18/2022 1:50:31 AM	R86565
1,1-Dichloroethane	1.4	0.55	2.0	J	µg/L	2	3/18/2022 1:50:31 AM	R86565
1,1-Dichloroethene	2.6	0.40	2.0		µg/L	2	3/18/2022 1:50:31 AM	R86565
Isopropylbenzene	3.3	0.37	2.0		µg/L	2	3/18/2022 1:50:31 AM	R86565
4-Isopropyltoluene	0.84	0.40	2.0	J	µg/L	2	3/18/2022 1:50:31 AM	R86565
Methylene Chloride	ND	1.0	6.0		µg/L	2	3/18/2022 1:50:31 AM	R86565
n-Butylbenzene	1.2	0.51	6.0	J	µg/L	2	3/18/2022 1:50:31 AM	R86565
n-Propylbenzene	3.5	0.36	2.0		µg/L	2	3/18/2022 1:50:31 AM	R86565
sec-Butylbenzene	0.85	0.29	2.0	J	µg/L	2	3/18/2022 1:50:31 AM	R86565
Styrene	ND	0.27	2.0		µg/L	2	3/18/2022 1:50:31 AM	R86565
Tetrachloroethene (PCE)	ND	0.71	2.0		µg/L	2	3/18/2022 1:50:31 AM	R86565
1,1,1-Trichloroethane	ND	0.60	2.0		µg/L	2	3/18/2022 1:50:31 AM	R86565
Trichloroethene (TCE)	ND	0.41	2.0		µg/L	2	3/18/2022 1:50:31 AM	R86565
Vinyl chloride	0.87	0.64	2.0	J	µg/L	2	3/18/2022 1:50:31 AM	R86565
Xylenes, Total	56	0.74	3.0		µg/L	2	3/18/2022 1:50:31 AM	R86565
Surr: 1,2-Dichloroethane-d4	90.3	0	70-130		%Rec	2	3/18/2022 1:50:31 AM	R86565
Surr: 4-Bromofluorobenzene	96.8	0	70-130		%Rec	2	3/18/2022 1:50:31 AM	R86565
Surr: Dibromofluoromethane	92.0	0	70-130		%Rec	2	3/18/2022 1:50:31 AM	R86565
Surr: Toluene-d8	106	0	70-130		%Rec	2	3/18/2022 1:50:31 AM	R86565
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.47	0.024	0.10		mg/L	2	3/18/2022 1:50:31 AM	R86565
Surr: 4-Bromofluorobenzene	105	0	70-130		%Rec	2	3/18/2022 1:50:31 AM	R86565

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-9-22
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022
Lab ID: 2203574-007B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	0.074	0.034	0.093	JD	µg/L	10	3/17/2022 2:28:53 PM	66232

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-9-22
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022
Lab ID: 2203574-007C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	21	0.32	1.3		mg/L	20	3/15/2022 2:16:31 PM	66129
Motor Oil Range Organics (MRO)	ND	1.0	1.6	D	mg/L	20	3/15/2022 2:16:31 PM	66129
Surr: DNOP	0	0	42.2-138	S	%Rec	20	3/15/2022 2:16:31 PM	66129
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	11	200	D	µg/L	10	3/16/2022 7:57:19 PM	66111
Bis(2-ethylhexyl)phthalate	ND	45	100	D	µg/L	10	3/16/2022 7:57:19 PM	66111
Di-n-butyl phthalate	ND	65	100	D	µg/L	10	3/16/2022 7:57:19 PM	66111
Di-n-octyl phthalate	ND	31	200	D	µg/L	10	3/16/2022 7:57:19 PM	66111
1,4-Dichlorobenzene	ND	7.0	50	D	µg/L	10	3/16/2022 7:57:19 PM	66111
Diethyl phthalate	ND	39	100	D	µg/L	10	3/16/2022 7:57:19 PM	66111
Dimethyl phthalate	ND	20	100	D	µg/L	10	3/16/2022 7:57:19 PM	66111
2,4-Dimethylphenol	ND	9.7	50	D	µg/L	10	3/16/2022 7:57:19 PM	66111
2,4-Dinitrophenol	ND	5.0	50	D	µg/L	10	3/16/2022 7:57:19 PM	66111
2-Methylphenol	ND	5.1	50	D	µg/L	10	3/16/2022 7:57:19 PM	66111
3+4-Methylphenol	ND	4.5	50	D	µg/L	10	3/16/2022 7:57:19 PM	66111
Phenol	ND	3.3	50	D	µg/L	10	3/16/2022 7:57:19 PM	66111
Pyridine	ND	100	100	D	µg/L	10	3/16/2022 7:57:19 PM	66111
2,4,6-Trichlorophenol	ND	4.3	50	D	µg/L	10	3/16/2022 7:57:19 PM	66111
Surr: 2-Fluorophenol	0	0	29.4-87.7	SD	%Rec	10	3/16/2022 7:57:19 PM	66111
Surr: Phenol-d5	0	0	28.5-64.7	SD	%Rec	10	3/16/2022 7:57:19 PM	66111
Surr: 2,4,6-Tribromophenol	0	0	18.6-129	SD	%Rec	10	3/16/2022 7:57:19 PM	66111
Surr: Nitrobenzene-d5	0	0	36.9-103	SD	%Rec	10	3/16/2022 7:57:19 PM	66111
Surr: 2-Fluorobiphenyl	0	0	38.1-99.9	SD	%Rec	10	3/16/2022 7:57:19 PM	66111
Surr: 4-Terphenyl-d14	0	0	48-155	SD	%Rec	10	3/16/2022 7:57:19 PM	66111
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.95	20	D	µg/L	20	3/17/2022 9:11:00 PM	66214
Naphthalene	2.0	0.67	2.0	D	µg/L	20	3/17/2022 9:11:00 PM	66214
1-Methylnaphthalene	ND	0.48	2.0	D	µg/L	20	3/17/2022 9:11:00 PM	66214
2-Methylnaphthalene	ND	0.67	2.0	D	µg/L	20	3/17/2022 9:11:00 PM	66214
Acenaphthene	ND	0.61	2.0	D	µg/L	20	3/17/2022 9:11:00 PM	66214
Fluorene	ND	0.61	2.0	D	µg/L	20	3/17/2022 9:11:00 PM	66214
Phenanthrene	ND	1.1	2.0	D	µg/L	20	3/17/2022 9:11:00 PM	66214
Anthracene	ND	0.67	2.0	D	µg/L	20	3/17/2022 9:11:00 PM	66214
Fluoranthene	ND	2.0	4.0	D	µg/L	20	3/17/2022 9:11:00 PM	66214
Pyrene	ND	3.2	4.0	D	µg/L	20	3/17/2022 9:11:00 PM	66214
Benz(a)anthracene	ND	0.73	2.0	D	µg/L	20	3/17/2022 9:11:00 PM	66214
Chrysene	ND	0.48	2.0	D	µg/L	20	3/17/2022 9:11:00 PM	66214
Benzo(b)fluoranthene	ND	1.1	2.0	D	µg/L	20	3/17/2022 9:11:00 PM	66214
Indeno(1,2,3-cd)pyrene	ND	0.87	6.0	D	µg/L	20	3/17/2022 9:11:00 PM	66214

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-9-22
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022
Lab ID: 2203574-007C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	0	0	31.6-100	SD	%Rec	20	3/17/2022 9:11:00 PM	66214
Surr: 2-Fluorobiphenyl	0	0	26.7-90.1	SD	%Rec	20	3/17/2022 9:11:00 PM	66214
Surr: 4-Terphenyl-d14	0	0	72.3-147	SD	%Rec	20	3/17/2022 9:11:00 PM	66214

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-9-22
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022
Lab ID: 2203574-007D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **bcv**	
Cobalt	0.00021	0.00017	0.0010	J	mg/L	1	3/17/2022 3:54:58 PM	66151
Vanadium	0.062	0.0029	0.0050		mg/L	5	3/21/2022 2:24:56 PM	66151
Antimony	ND	0.00044	0.0010		mg/L	1	3/17/2022 3:54:58 PM	66151
Arsenic	0.0026	0.00013	0.0010		mg/L	1	3/17/2022 3:54:58 PM	66151
Barium	0.059	0.0023	0.0050		mg/L	5	3/15/2022 7:59:36 PM	66151
Beryllium	ND	0.00025	0.0010		mg/L	1	3/17/2022 3:54:58 PM	66151
Cadmium	ND	0.000080	0.00050		mg/L	1	3/17/2022 3:54:58 PM	66151
Chromium	ND	0.00056	0.0010		mg/L	1	3/17/2022 3:54:58 PM	66151
Lead	0.00019	0.000061	0.00050	J	mg/L	1	3/17/2022 3:54:58 PM	66151
Nickel	ND	0.00048	0.0010		mg/L	1	3/17/2022 3:54:58 PM	66151
Selenium	0.00097	0.00037	0.0010	J	mg/L	1	3/17/2022 3:54:58 PM	66151
Silver	ND	0.00022	0.00050		mg/L	1	3/17/2022 3:54:58 PM	66151
Zinc	ND	0.0038	0.010		mg/L	1	3/17/2022 3:54:58 PM	66151
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.000095	0.000091	0.00020	J	mg/L	1	3/18/2022 3:53:10 PM	66260

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-9-22
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022
Lab ID: 2203574-007E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Cobalt	ND	0.0024	0.0060		mg/L	1	3/11/2022 12:51:10 PM	C86413
Silver	ND	0.0013	0.0050		mg/L	1	3/11/2022 12:51:10 PM	C86413
Vanadium	0.056	0.0017	0.050		mg/L	1	3/11/2022 12:51:10 PM	C86413
Zinc	0.013	0.0032	0.010		mg/L	1	3/11/2022 12:51:10 PM	C86413
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	3/21/2022 5:00:23 PM	A86624
Arsenic	0.0021	0.00061	0.0050	J	mg/L	5	3/21/2022 5:00:23 PM	A86624
Barium	0.053	0.0023	0.0050		mg/L	5	3/21/2022 5:00:23 PM	A86624
Beryllium	ND	0.0010	0.0050		mg/L	5	3/21/2022 5:00:23 PM	A86624
Cadmium	ND	0.00033	0.0025		mg/L	5	3/21/2022 5:00:23 PM	A86624
Chromium	ND	0.00069	0.0050		mg/L	5	3/21/2022 5:00:23 PM	A86624
Lead	ND	0.00028	0.0025		mg/L	5	3/21/2022 5:00:23 PM	A86624
Nickel	ND	0.0024	0.0050		mg/L	5	3/21/2022 5:00:23 PM	A86624
Selenium	ND	0.0017	0.0050		mg/L	5	3/21/2022 5:00:23 PM	A86624
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/18/2022 3:55:18 PM	66260

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-3-9-22
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022 8:30:00 AM
Lab ID: 2203574-008A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	3/18/2022 2:18:55 AM	R86565
Toluene	ND	0.20	1.0		µg/L	1	3/18/2022 2:18:55 AM	R86565
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/18/2022 2:18:55 AM	R86565
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/18/2022 2:18:55 AM	R86565
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/18/2022 2:18:55 AM	R86565
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/18/2022 2:18:55 AM	R86565
1,2-Dichloroethane (EDC)	0.41	0.25	1.0	J	µg/L	1	3/18/2022 2:18:55 AM	R86565
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/18/2022 2:18:55 AM	R86565
Acetone	ND	2.5	10		µg/L	1	3/18/2022 2:18:55 AM	R86565
Bromomethane	ND	0.85	3.0		µg/L	1	3/18/2022 2:18:55 AM	R86565
2-Butanone	ND	2.0	10		µg/L	1	3/18/2022 2:18:55 AM	R86565
Carbon disulfide	ND	0.59	10		µg/L	1	3/18/2022 2:18:55 AM	R86565
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/18/2022 2:18:55 AM	R86565
Chloroform	ND	0.13	1.0		µg/L	1	3/18/2022 2:18:55 AM	R86565
Chloromethane	0.66	0.41	3.0	J	µg/L	1	3/18/2022 2:18:55 AM	R86565
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/18/2022 2:18:55 AM	R86565
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/18/2022 2:18:55 AM	R86565
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/18/2022 2:18:55 AM	R86565
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/18/2022 2:18:55 AM	R86565
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/18/2022 2:18:55 AM	R86565
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/18/2022 2:18:55 AM	R86565
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/18/2022 2:18:55 AM	R86565
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/18/2022 2:18:55 AM	R86565
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/18/2022 2:18:55 AM	R86565
Styrene	ND	0.14	1.0		µg/L	1	3/18/2022 2:18:55 AM	R86565
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/18/2022 2:18:55 AM	R86565
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/18/2022 2:18:55 AM	R86565
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/18/2022 2:18:55 AM	R86565
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/18/2022 2:18:55 AM	R86565
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/18/2022 2:18:55 AM	R86565
Surr: 1,2-Dichloroethane-d4	89.0	0	70-130		%Rec	1	3/18/2022 2:18:55 AM	R86565
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	3/18/2022 2:18:55 AM	R86565
Surr: Dibromofluoromethane	95.1	0	70-130		%Rec	1	3/18/2022 2:18:55 AM	R86565
Surr: Toluene-d8	100	0	70-130		%Rec	1	3/18/2022 2:18:55 AM	R86565
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.039	0.012	0.050	J	mg/L	1	3/18/2022 2:18:55 AM	R86565
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	1	3/18/2022 2:18:55 AM	R86565

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-3-9-22
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022 8:30:00 AM
Lab ID: 2203574-008B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.035	0.095	D	µg/L	10	3/17/2022 3:44:29 PM	66232

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-3-9-22
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022 8:30:00 AM
Lab ID: 2203574-008C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.022	0.016	0.064	J	mg/L	1	3/15/2022 2:40:22 PM	66129
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/15/2022 2:40:22 PM	66129
Surr: DNOP	103	0	42.2-138		%Rec	1	3/15/2022 2:40:22 PM	66129
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	1.1	20		µg/L	1	3/16/2022 8:39:44 PM	66111
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/16/2022 8:39:44 PM	66111
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/16/2022 8:39:44 PM	66111
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/16/2022 8:39:44 PM	66111
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/16/2022 8:39:44 PM	66111
Diethyl phthalate	ND	3.9	10		µg/L	1	3/16/2022 8:39:44 PM	66111
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/16/2022 8:39:44 PM	66111
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/16/2022 8:39:44 PM	66111
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/16/2022 8:39:44 PM	66111
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/16/2022 8:39:44 PM	66111
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/16/2022 8:39:44 PM	66111
Phenol	ND	0.33	5.0		µg/L	1	3/16/2022 8:39:44 PM	66111
Pyridine	ND	10	10		µg/L	1	3/16/2022 8:39:44 PM	66111
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/16/2022 8:39:44 PM	66111
Surr: 2-Fluorophenol	39.8	0	29.4-87.7		%Rec	1	3/16/2022 8:39:44 PM	66111
Surr: Phenol-d5	29.5	0	28.5-64.7		%Rec	1	3/16/2022 8:39:44 PM	66111
Surr: 2,4,6-Tribromophenol	59.8	0	18.6-129		%Rec	1	3/16/2022 8:39:44 PM	66111
Surr: Nitrobenzene-d5	49.8	0	36.9-103		%Rec	1	3/16/2022 8:39:44 PM	66111
Surr: 2-Fluorobiphenyl	46.5	0	38.1-99.9		%Rec	1	3/16/2022 8:39:44 PM	66111
Surr: 4-Terphenyl-d14	86.8	0	48-155		%Rec	1	3/16/2022 8:39:44 PM	66111
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.048	1.0		µg/L	1	3/17/2022 9:56:00 PM	66214
Naphthalene	ND	0.034	0.10		µg/L	1	3/17/2022 9:56:00 PM	66214
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/17/2022 9:56:00 PM	66214
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/17/2022 9:56:00 PM	66214
Acenaphthene	ND	0.031	0.10		µg/L	1	3/17/2022 9:56:00 PM	66214
Fluorene	ND	0.031	0.10		µg/L	1	3/17/2022 9:56:00 PM	66214
Phenanthrene	ND	0.057	0.10		µg/L	1	3/17/2022 9:56:00 PM	66214
Anthracene	ND	0.034	0.10		µg/L	1	3/17/2022 9:56:00 PM	66214
Fluoranthene	ND	0.10	0.20		µg/L	1	3/17/2022 9:56:00 PM	66214
Pyrene	ND	0.16	0.20		µg/L	1	3/17/2022 9:56:00 PM	66214
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/17/2022 9:56:00 PM	66214
Chrysene	ND	0.024	0.10		µg/L	1	3/17/2022 9:56:00 PM	66214
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/17/2022 9:56:00 PM	66214
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/17/2022 9:56:00 PM	66214

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-3-9-22
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022 8:30:00 AM
Lab ID: 2203574-008C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	54.5	0	31.6-100		%Rec	1	3/17/2022 9:56:00 PM	66214
Surr: 2-Fluorobiphenyl	34.0	0	26.7-90.1		%Rec	1	3/17/2022 9:56:00 PM	66214
Surr: 4-Terphenyl-d14	95.5	0	72.3-147		%Rec	1	3/17/2022 9:56:00 PM	66214

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-3-9-22
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022 8:30:00 AM
Lab ID: 2203574-008D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **bcv**	
Cobalt	ND	0.00017	0.0010		mg/L	1	3/17/2022 4:07:13 PM	66191
Vanadium	ND	0.00058	0.0010		mg/L	1	3/17/2022 4:07:13 PM	66191
Antimony	ND	0.00044	0.0010		mg/L	1	3/17/2022 4:07:13 PM	66191
Arsenic	ND	0.00013	0.0010		mg/L	1	3/17/2022 4:07:13 PM	66191
Barium	ND	0.00046	0.0010		mg/L	1	3/17/2022 4:07:13 PM	66191
Beryllium	ND	0.00025	0.0010		mg/L	1	3/17/2022 4:07:13 PM	66191
Cadmium	ND	0.000080	0.00050		mg/L	1	3/17/2022 4:07:13 PM	66191
Chromium	ND	0.00056	0.0010		mg/L	1	3/17/2022 4:07:13 PM	66191
Lead	ND	0.000061	0.00050		mg/L	1	3/17/2022 4:07:13 PM	66191
Nickel	ND	0.00048	0.0010		mg/L	1	3/17/2022 4:07:13 PM	66191
Selenium	ND	0.00037	0.0010		mg/L	1	3/17/2022 4:07:13 PM	66191
Silver	ND	0.00022	0.00050		mg/L	1	3/17/2022 4:07:13 PM	66191
Zinc	ND	0.0038	0.010		mg/L	1	3/17/2022 4:07:13 PM	66191
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/18/2022 4:01:42 PM	66260

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-3-9-22
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022 8:30:00 AM
Lab ID: 2203574-008E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Cobalt	ND	0.0024	0.0060		mg/L	1	3/11/2022 12:54:28 PM	C86413
Silver	ND	0.0013	0.0050		mg/L	1	3/11/2022 12:54:28 PM	C86413
Vanadium	ND	0.0017	0.050		mg/L	1	3/11/2022 12:54:28 PM	C86413
Zinc	0.0045	0.0032	0.010	J	mg/L	1	3/11/2022 12:54:28 PM	C86413
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	3/21/2022 5:03:05 PM	A86624
Arsenic	ND	0.00012	0.0010		mg/L	1	3/16/2022 1:25:13 PM	A86537
Barium	ND	0.00046	0.0010		mg/L	1	3/16/2022 1:25:13 PM	A86537
Beryllium	ND	0.00020	0.0010		mg/L	1	3/16/2022 1:25:13 PM	A86537
Cadmium	ND	0.000066	0.00050		mg/L	1	3/16/2022 1:25:13 PM	A86537
Chromium	0.00020	0.00014	0.0010	J	mg/L	1	3/16/2022 1:25:13 PM	A86537
Lead	ND	0.000057	0.00050		mg/L	1	3/16/2022 1:25:13 PM	A86537
Nickel	ND	0.00048	0.0010		mg/L	1	3/16/2022 1:25:13 PM	A86537
Selenium	ND	0.00034	0.0010		mg/L	1	3/16/2022 1:25:13 PM	A86537
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.000095	0.000091	0.00020	J	mg/L	1	3/18/2022 4:08:07 PM	66260

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB 3-9-22
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date: 3/9/2022 10:40:00 AM
Lab ID: 2203574-009A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	3/17/2022 10:30:51 PM	R86565
Toluene	ND	0.20	1.0		µg/L	1	3/17/2022 10:30:51 PM	R86565
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/17/2022 10:30:51 PM	R86565
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/17/2022 10:30:51 PM	R86565
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/17/2022 10:30:51 PM	R86565
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/17/2022 10:30:51 PM	R86565
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	3/17/2022 10:30:51 PM	R86565
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/17/2022 10:30:51 PM	R86565
Acetone	3.1	2.5	10	J	µg/L	1	3/17/2022 10:30:51 PM	R86565
Bromomethane	ND	0.85	3.0		µg/L	1	3/17/2022 10:30:51 PM	R86565
2-Butanone	ND	2.0	10		µg/L	1	3/17/2022 10:30:51 PM	R86565
Carbon disulfide	ND	0.59	10		µg/L	1	3/17/2022 10:30:51 PM	R86565
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/17/2022 10:30:51 PM	R86565
Chloroform	ND	0.13	1.0		µg/L	1	3/17/2022 10:30:51 PM	R86565
Chloromethane	0.68	0.41	3.0	J	µg/L	1	3/17/2022 10:30:51 PM	R86565
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/17/2022 10:30:51 PM	R86565
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/17/2022 10:30:51 PM	R86565
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/17/2022 10:30:51 PM	R86565
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/17/2022 10:30:51 PM	R86565
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/17/2022 10:30:51 PM	R86565
Methylene Chloride	4.0	0.50	3.0		µg/L	1	3/17/2022 10:30:51 PM	R86565
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/17/2022 10:30:51 PM	R86565
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/17/2022 10:30:51 PM	R86565
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/17/2022 10:30:51 PM	R86565
Styrene	ND	0.14	1.0		µg/L	1	3/17/2022 10:30:51 PM	R86565
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/17/2022 10:30:51 PM	R86565
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/17/2022 10:30:51 PM	R86565
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/17/2022 10:30:51 PM	R86565
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/17/2022 10:30:51 PM	R86565
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/17/2022 10:30:51 PM	R86565
Surr: 1,2-Dichloroethane-d4	90.6	0	70-130		%Rec	1	3/17/2022 10:30:51 PM	R86565
Surr: 4-Bromofluorobenzene	100	0	70-130		%Rec	1	3/17/2022 10:30:51 PM	R86565
Surr: Dibromofluoromethane	96.0	0	70-130		%Rec	1	3/17/2022 10:30:51 PM	R86565
Surr: Toluene-d8	108	0	70-130		%Rec	1	3/17/2022 10:30:51 PM	R86565

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date:
Lab ID: 2203574-010A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	3/17/2022 10:59:27 PM	R86565
Toluene	ND	0.20	1.0		µg/L	1	3/17/2022 10:59:27 PM	R86565
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/17/2022 10:59:27 PM	R86565
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/17/2022 10:59:27 PM	R86565
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/17/2022 10:59:27 PM	R86565
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/17/2022 10:59:27 PM	R86565
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	3/17/2022 10:59:27 PM	R86565
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/17/2022 10:59:27 PM	R86565
Acetone	ND	2.5	10		µg/L	1	3/17/2022 10:59:27 PM	R86565
Bromomethane	ND	0.85	3.0		µg/L	1	3/17/2022 10:59:27 PM	R86565
2-Butanone	ND	2.0	10		µg/L	1	3/17/2022 10:59:27 PM	R86565
Carbon disulfide	ND	0.59	10		µg/L	1	3/17/2022 10:59:27 PM	R86565
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/17/2022 10:59:27 PM	R86565
Chloroform	ND	0.13	1.0		µg/L	1	3/17/2022 10:59:27 PM	R86565
Chloromethane	0.70	0.41	3.0	J	µg/L	1	3/17/2022 10:59:27 PM	R86565
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/17/2022 10:59:27 PM	R86565
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/17/2022 10:59:27 PM	R86565
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/17/2022 10:59:27 PM	R86565
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/17/2022 10:59:27 PM	R86565
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/17/2022 10:59:27 PM	R86565
Methylene Chloride	0.51	0.50	3.0	J	µg/L	1	3/17/2022 10:59:27 PM	R86565
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/17/2022 10:59:27 PM	R86565
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/17/2022 10:59:27 PM	R86565
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/17/2022 10:59:27 PM	R86565
Styrene	ND	0.14	1.0		µg/L	1	3/17/2022 10:59:27 PM	R86565
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/17/2022 10:59:27 PM	R86565
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/17/2022 10:59:27 PM	R86565
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/17/2022 10:59:27 PM	R86565
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/17/2022 10:59:27 PM	R86565
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/17/2022 10:59:27 PM	R86565
Surr: 1,2-Dichloroethane-d4	89.4	0	70-130		%Rec	1	3/17/2022 10:59:27 PM	R86565
Surr: 4-Bromofluorobenzene	99.1	0	70-130		%Rec	1	3/17/2022 10:59:27 PM	R86565
Surr: Dibromofluoromethane	91.6	0	70-130		%Rec	1	3/17/2022 10:59:27 PM	R86565
Surr: Toluene-d8	106	0	70-130		%Rec	1	3/17/2022 10:59:27 PM	R86565

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203574**
Date Reported: **3/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 Quarterly Sampling 1st Qtr
Collection Date:
Lab ID: 2203574-010B
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.035	0.095	D	µg/L	10	3/17/2022 4:14:43 PM	66232

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

ANALYTICAL REPORT

March 18, 2022

Hall Environmental Analysis Laboratory

Sample Delivery Group: L1470301

Samples Received: 03/11/2022

Project Number:

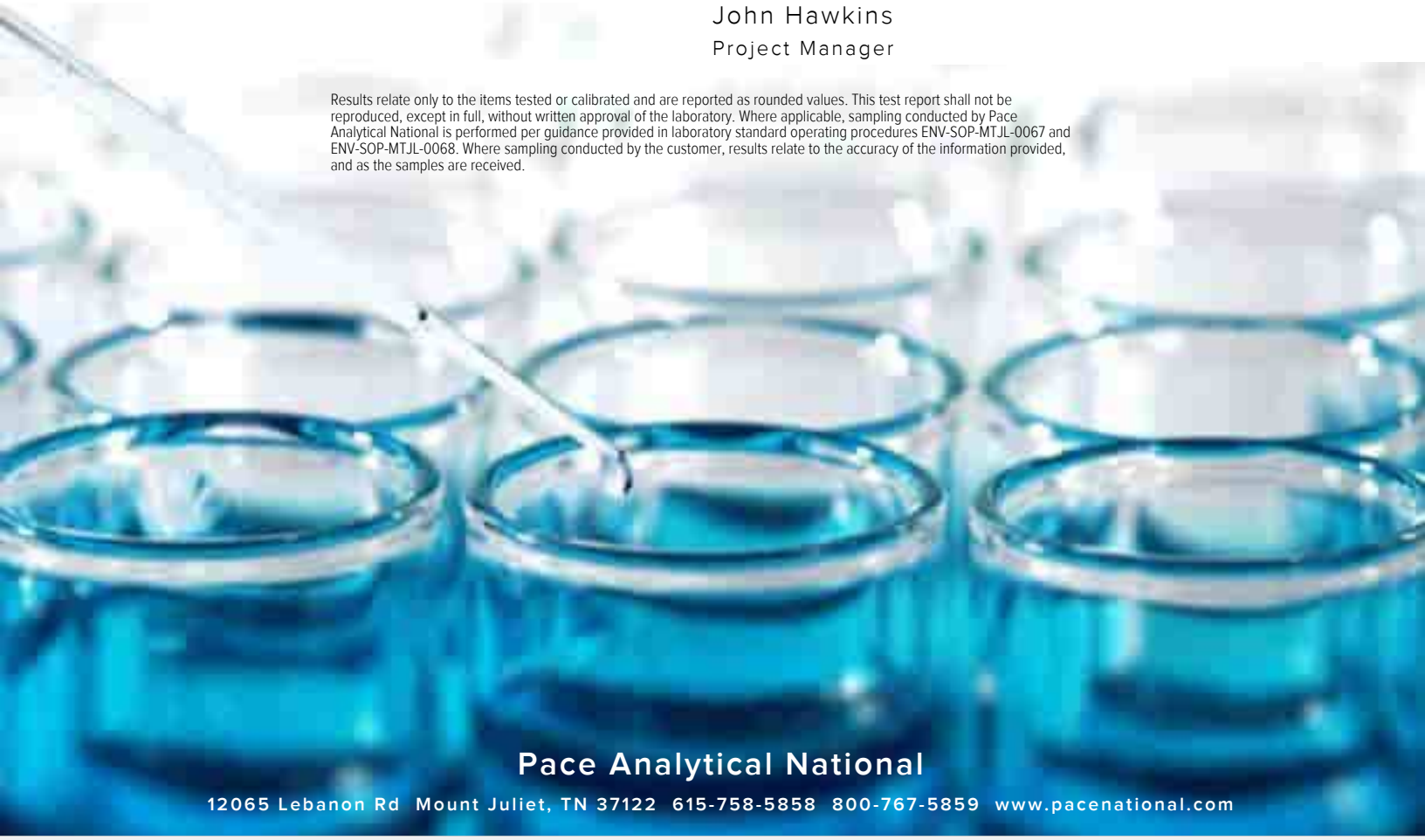
Description:

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By:

John Hawkins
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 4

Sr: Sample Results 5

2203574-001F MKTF-42 L1470301-01 5

2203574-002F MKTF-41 L1470301-02 6

2203574-003F MKTF-32 L1470301-03 7

2203574-004F MKTF-34 L1470301-04 8

2203574-005F PW-3 L1470301-05 9

2203574-006F PW-4 L1470301-06 10

2203574-007F DUP-3-9-22 L1470301-07 11

2203574-008F EB-3-9-22 L1470301-08 12

Qc: Quality Control Summary 13

Wet Chemistry by Method 4500CN E-2016 13

Gl: Glossary of Terms 14

Al: Accreditations & Locations 15

Sc: Sample Chain of Custody 16

SAMPLE SUMMARY

2203574-001F MKTF-42 L1470301-01 WW

Collected by	Collected date/time	Received date/time
	03/09/22 09:00	03/11/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1832548	1	03/16/22 07:21	03/17/22 13:09	LDT	Mt. Juliet, TN

2203574-002F MKTF-41 L1470301-02 WW

Collected by	Collected date/time	Received date/time
	03/09/22 09:35	03/11/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1832548	1	03/16/22 07:21	03/17/22 13:10	LDT	Mt. Juliet, TN

2203574-003F MKTF-32 L1470301-03 WW

Collected by	Collected date/time	Received date/time
	03/09/22 10:00	03/11/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1832548	1	03/16/22 07:21	03/17/22 13:11	LDT	Mt. Juliet, TN

2203574-004F MKTF-34 L1470301-04 WW

Collected by	Collected date/time	Received date/time
	03/09/22 10:20	03/11/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1832548	1	03/16/22 07:21	03/17/22 13:13	LDT	Mt. Juliet, TN

2203574-005F PW-3 L1470301-05 WW

Collected by	Collected date/time	Received date/time
	03/09/22 10:40	03/11/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1832548	1	03/16/22 07:21	03/17/22 13:14	LDT	Mt. Juliet, TN

2203574-006F PW-4 L1470301-06 WW

Collected by	Collected date/time	Received date/time
	03/09/22 08:35	03/11/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1832548	1	03/16/22 07:21	03/17/22 13:15	LDT	Mt. Juliet, TN

2203574-007F DUP-3-9-22 L1470301-07 WW

Collected by	Collected date/time	Received date/time
	03/09/22 00:00	03/11/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1832548	1	03/16/22 07:21	03/17/22 13:18	LDT	Mt. Juliet, TN

2203574-008F EB-3-9-22 L1470301-08 WW

Collected by	Collected date/time	Received date/time
	03/09/22 08:30	03/11/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1832548	1	03/16/22 07:21	03/17/22 13:21	LDT	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	6.93		1.80	5.00	1	03/17/2022 13:09	WG1832548

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	4.04	J	1.80	5.00	1	03/17/2022 13:10	WG1832548

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	2.03	J	1.80	5.00	1	03/17/2022 13:11	WG1832548

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	U		1.80	5.00	1	03/17/2022 13:13	WG1832548

Received by OCD: 4/21/2023 9:21:57 AM

220314-005F PW-3
Collected date/time: 03/09/22 10:40
L1470301

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	U		1.80	5.00	1	03/17/2022 13:14	WG1832548

Released to Imaging: 4/21/2023 9:40:26 AM

220354-0001 TW-4
Collected date/time: 03/09/22 08:35
L1470301

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	U		1.80	5.00	1	03/17/2022 13:15	WG1832548

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	3.89	J	1.80	5.00	1	03/17/2022 13:18	WG1832548

Received by OCD: 4/21/2023 9:21:57 AM

Collected date/time: 03/09/22 08:30
L1470301

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	U		1.80	5.00	1	03/17/2022 13:21	WG1832548

Released to Imaging: 4/21/2023 9:40:26 AM

Method Blank (MB)

(MB) R3770945-1 03/17/22 12:57

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Cyanide	U		1.80	5.00

L1470301-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1470301-03 03/17/22 13:11 • (DUP) R3770945-5 03/17/22 13:12

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	2.03	2.16	1	6.21	J	20

L1470308-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1470308-02 03/17/22 13:23 • (DUP) R3770945-8 03/17/22 13:24

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3770945-2 03/17/22 12:58

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	100	104	104	87.1-120	

L1470265-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1470265-02 03/17/22 13:03 • (MS) R3770945-3 03/17/22 13:04 • (MSD) R3770945-4 03/17/22 13:05

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	100	U	61.3	60.9	61.3	60.9	1	90.0-110	J6	J6	0.655	20

L1470301-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1470301-06 03/17/22 13:15 • (MS) R3770945-6 03/17/22 13:16 • (MSD) R3770945-7 03/17/22 13:17

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	100	U	99.8	96.7	99.8	96.7	1	90.0-110			3.16	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Received by OCD: 4/21/2023 9:21:57 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

F233

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: clients.hallenvironmental.com

SUB CONTRATOR: Pace TN	COMPANY: PACE TN		PHONE: (800) 767-5859	FAX: (615) 758-5859	
ADDRESS: 12065 Lebanon Rd			ACCOUNT #	EMAIL:	
CITY, STATE, ZIP: Mt. Juliet, TN 37122					

L1470301

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS	
1	2203574-001F	MKTF-42	500AMBHDP F-NAOH	Groundwater	3/9/2022 9:00:00 AM	1	Cyanide	-01
2	2203574-002F	MKTF-41	500AMBHDP F-NAOH	Groundwater	3/9/2022 9:35:00 AM	1	Cyanide	-02
3	2203574-003F	MKTF-32	500AMBHDP F-NAOH	Groundwater	3/9/2022 10:00:00 AM	1	Cyanide	-03
4	2203574-004F	MKTF-34	500AMBHDP F-NAOH	Groundwater	3/9/2022 10:20:00 AM	1	Cyanide	-04
5	2203574-005F	PW-3	500AMBHDP F-NAOH	Groundwater	3/9/2022 10:40:00 AM	1	Cyanide	-05
6	2203574-006F	PW-4	500AMBHDP F-NAOH	Groundwater	3/9/2022 8:35:00 AM	1	Cyanide	-06
7	2203574-007F	DUP-3-9-22	500AMBHDP F-NAOH	Groundwater	3/9/2022	1	Cyanide	-07
8	2203574-008F	EB-3-9-22	500AMBHDP F-NAOH	Groundwater	3/9/2022 8:30:00 AM	1	Cyanide	-08

Sample Receipt Checklist

COC Seal Present/Intact:	Y N	If Applicable	
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	Y N	Pres.Correct Check:	Y N
Correct bottles used:	Y N		
Sufficient volume sent:	Y N		
RAD Screen <0.5 mR/hr:	Y N		

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By: CMC	Date: 3/10/2022	Time: 8:58 AM	Received By: [signature]	Date: 3/11/22	Time: 900
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard X RUSH Next BD 2nd BD 3rd BD

REPORT TRANSMITTAL DESIRED:
HARDCOPY (extra cost) FAX EMAIL ONLINE

FOR LAB USE ONLY
Temp of samples C Attempt to Cool ?
Comments

2.1-.1=2.0 HMAG

Released to Imaging: 4/21/2023 9:40:26 AM

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203574**
24-Mar-22

Client: Marathon
Project: 2022 Quarterly Sampling 1st Qtr

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **C86413**	RunNo: **86413**
Prep Date:	Analysis Date: **3/11/2022**	SeqNo: **3048353** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	ND	0.0060								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **C86413**	RunNo: **86413**
Prep Date:	Analysis Date: **3/11/2022**	SeqNo: **3048354** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	0.0062	0.0060	0.006000	0	103	50	150			
Silver	0.0053	0.0050	0.005000	0	105	50	150			
Vanadium	0.011	0.050	0.01000	0	107	50	150			J
Zinc	0.011	0.010	0.01000	0	109	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **C86413**	RunNo: **86413**
Prep Date:	Analysis Date: **3/11/2022**	SeqNo: **3048355** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	0.50	0.0060	0.5000	0	99.7	85	115			
Silver	0.10	0.0050	0.1000	0	102	85	115			
Vanadium	0.51	0.050	0.5000	0	103	85	115			
Zinc	0.51	0.010	0.5000	0	103	85	115			

Sample ID: **2203574-008EMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB-3-9-22**	Batch ID: **C86413**	RunNo: **86413**
Prep Date:	Analysis Date: **3/11/2022**	SeqNo: **3048505** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	0.52	0.0060	0.5000	0	103	70	130			
Silver	0.10	0.0050	0.1000	0	101	70	130			
Vanadium	0.53	0.050	0.5000	0	105	70	130			
Zinc	0.51	0.010	0.5000	0.004484	102	70	130			

Sample ID: **2203574-008EMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB-3-9-22**	Batch ID: **C86413**	RunNo: **86413**
Prep Date:	Analysis Date: **3/11/2022**	SeqNo: **3048506** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203574**
24-Mar-22

Client: Marathon
Project: 2022 Quarterly Sampling 1st Qtr

Sample ID: **2203574-008EMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB-3-9-22**	Batch ID: **C86413**	RunNo: **86413**
Prep Date:	Analysis Date: **3/11/2022**	SeqNo: **3048506** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	0.51	0.0060	0.5000	0	102	70	130	0.982	20	
Silver	0.10	0.0050	0.1000	0	99.7	70	130	0.908	20	
Vanadium	0.52	0.050	0.5000	0	103	70	130	2.10	20	
Zinc	0.50	0.010	0.5000	0.004484	99.0	70	130	2.67	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203574**

24-Mar-22

Client: Marathon

Project: 2022 Quarterly Sampling 1st Qtr

Sample ID: **MB-66151**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **66151**	RunNo: **86510**
Prep Date: **3/14/2022**	Analysis Date: **3/15/2022**	SeqNo: **3052849** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Barium	ND	0.0010								
Beryllium	ND	0.0010								
Cadmium	ND	0.00050								
Chromium	ND	0.0010								
Lead	ND	0.00050								
Nickel	ND	0.0010								
Selenium	ND	0.0010								
Silver	ND	0.00050								
Zinc	ND	0.010								

Sample ID: **MSLLLCS-66151**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **66151**	RunNo: **86510**
Prep Date: **3/14/2022**	Analysis Date: **3/15/2022**	SeqNo: **3052850** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0010	0.0010	0.001000	0	102	50	150			
Arsenic	0.00098	0.0010	0.001000	0	97.6	50	150			J
Barium	0.00085	0.0010	0.001000	0	85.5	50	150			J
Beryllium	0.0011	0.0010	0.001000	0	106	50	150			
Cadmium	0.00055	0.00050	0.0005000	0	110	50	150			
Chromium	0.0011	0.0010	0.001000	0	107	50	150			
Lead	0.00049	0.00050	0.0005000	0	97.5	50	150			J
Nickel	0.00098	0.0010	0.001000	0	98.3	50	150			J
Selenium	0.00087	0.0010	0.001000	0	86.7	50	150			J
Silver	0.00049	0.00050	0.0005000	0	98.2	50	150			J
Zinc	0.0099	0.010	0.01000	0	99.3	50	150			J

Sample ID: **MSLCS-66151**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **66151**	RunNo: **86510**
Prep Date: **3/14/2022**	Analysis Date: **3/15/2022**	SeqNo: **3052851** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	102	85	115			
Arsenic	0.026	0.0010	0.02500	0	105	85	115			
Barium	0.025	0.0010	0.02500	0	102	85	115			
Beryllium	0.028	0.0010	0.02500	0	111	85	115			
Cadmium	0.013	0.00050	0.01250	0	103	85	115			
Chromium	0.026	0.0010	0.02500	0	106	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203574**

24-Mar-22

Client: Marathon

Project: 2022 Quarterly Sampling 1st Qtr

Sample ID: **MSLCS-66151**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **66151**	RunNo: **86510**
Prep Date: **3/14/2022**	Analysis Date: **3/15/2022**	SeqNo: **3052851** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.013	0.00050	0.01250	0	103	85	115			
Nickel	0.026	0.0010	0.02500	0	104	85	115			
Selenium	0.024	0.0010	0.02500	0	96.0	85	115			
Silver	0.013	0.00050	0.01250	0	103	85	115			
Zinc	0.26	0.010	0.2500	0	103	85	115			

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **A86537**	RunNo: **86537**
Prep Date:	Analysis Date: **3/16/2022**	SeqNo: **3053956** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Barium	ND	0.0010								
Beryllium	ND	0.0010								
Cadmium	ND	0.00050								
Chromium	ND	0.0010								
Lead	ND	0.00050								
Nickel	ND	0.0010								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **A86537**	RunNo: **86537**
Prep Date:	Analysis Date: **3/16/2022**	SeqNo: **3053957** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.00095	0.0010	0.001000	0	95.2	50	150			J
Barium	0.0010	0.0010	0.001000	0	102	50	150			
Beryllium	0.00094	0.0010	0.001000	0	94.5	50	150			J
Cadmium	0.00049	0.00050	0.0005000	0	97.9	50	150			J
Chromium	0.0010	0.0010	0.001000	0	103	50	150			
Lead	0.00049	0.00050	0.0005000	0	98.2	50	150			J
Nickel	0.00095	0.0010	0.001000	0	94.5	50	150			J
Selenium	0.00069	0.0010	0.001000	0	69.2	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **A86537**	RunNo: **86537**
Prep Date:	Analysis Date: **3/16/2022**	SeqNo: **3053958** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	96.4	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203574**

24-Mar-22

Client: Marathon

Project: 2022 Quarterly Sampling 1st Qtr

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **A86537**	RunNo: **86537**
Prep Date:	Analysis Date: **3/16/2022**	SeqNo: **3053958** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.024	0.0010	0.02500	0	97.6	85	115			
Beryllium	0.024	0.0010	0.02500	0	97.9	85	115			
Cadmium	0.012	0.00050	0.01250	0	96.6	85	115			
Chromium	0.024	0.0010	0.02500	0	97.8	85	115			
Lead	0.012	0.00050	0.01250	0	97.4	85	115			
Nickel	0.024	0.0010	0.02500	0	97.7	85	115			
Selenium	0.024	0.0010	0.02500	0	95.0	85	115			

Sample ID: **MB-66191**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **66191**	RunNo: **86564**
Prep Date: **3/15/2022**	Analysis Date: **3/17/2022**	SeqNo: **3055017** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Barium	ND	0.0010								
Beryllium	ND	0.0010								
Cadmium	ND	0.00050								
Chromium	ND	0.0010								
Lead	ND	0.00050								
Nickel	ND	0.0010								
Selenium	ND	0.0010								
Silver	ND	0.00050								
Zinc	ND	0.010								

Sample ID: **MSLLLCS-66191**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **66191**	RunNo: **86564**
Prep Date: **3/15/2022**	Analysis Date: **3/17/2022**	SeqNo: **3055018** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0012	0.0010	0.001000	0	120	50	150			
Arsenic	0.0012	0.0010	0.001000	0	117	50	150			
Barium	0.0011	0.0010	0.001000	0	114	50	150			
Beryllium	0.0011	0.0010	0.001000	0	110	50	150			
Cadmium	0.00047	0.00050	0.0005000	0	94.2	50	150			J
Chromium	0.0012	0.0010	0.001000	0	124	50	150			
Lead	0.00051	0.00050	0.0005000	0	103	50	150			
Nickel	0.0010	0.0010	0.001000	0	103	50	150			
Silver	0.00053	0.00050	0.0005000	0	107	50	150			
Zinc	0.0097	0.010	0.01000	0	97.4	50	150			J

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203574**
24-Mar-22

Client: Marathon
Project: 2022 Quarterly Sampling 1st Qtr

Sample ID: **MSLCS-66191** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **66191** RunNo: **86564**
Prep Date: **3/15/2022** Analysis Date: **3/17/2022** SeqNo: **3055019** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	105	85	115			
Arsenic	0.026	0.0010	0.02500	0	103	85	115			
Barium	0.025	0.0010	0.02500	0	99.7	85	115			
Beryllium	0.028	0.0010	0.02500	0	111	85	115			
Cadmium	0.012	0.00050	0.01250	0	99.6	85	115			
Chromium	0.027	0.0010	0.02500	0	107	85	115			
Lead	0.013	0.00050	0.01250	0	101	85	115			
Nickel	0.026	0.0010	0.02500	0	103	85	115			
Selenium	0.027	0.0010	0.02500	0	107	85	115			
Silver	0.013	0.00050	0.01250	0	104	85	115			
Zinc	0.25	0.010	0.2500	0	101	85	115			

Sample ID: **MSLLLCS-66191** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **66191** RunNo: **86564**
Prep Date: **3/15/2022** Analysis Date: **3/17/2022** SeqNo: **3055052** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.00078	0.0010	0.001000	0	78.5	50	150			J

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203574**

24-Mar-22

Client: Marathon

Project: 2022 Quarterly Sampling 1st Qtr

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A86537**	RunNo: **86537**
Prep Date:	Analysis Date: **3/16/2022**	SeqNo: **3055193** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Barium	ND	0.0010								
Beryllium	ND	0.0010								
Cadmium	ND	0.00050								
Chromium	ND	0.0010								
Lead	ND	0.00050								
Nickel	ND	0.0010								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A86537**	RunNo: **86537**
Prep Date:	Analysis Date: **3/16/2022**	SeqNo: **3055194** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.00095	0.0010	0.001000	0	95.2	50	150			J
Barium	0.0010	0.0010	0.001000	0	102	50	150			
Beryllium	0.00094	0.0010	0.001000	0	94.5	50	150			J
Cadmium	0.00049	0.00050	0.0005000	0	97.9	50	150			J
Chromium	0.0010	0.0010	0.001000	0	103	50	150			
Lead	0.00049	0.00050	0.0005000	0	98.2	50	150			J
Nickel	0.00095	0.0010	0.001000	0	94.5	50	150			J
Selenium	0.00069	0.0010	0.001000	0	69.2	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A86537**	RunNo: **86537**
Prep Date:	Analysis Date: **3/16/2022**	SeqNo: **3055195** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	96.4	85	115			
Barium	0.024	0.0010	0.02500	0	97.6	85	115			
Beryllium	0.024	0.0010	0.02500	0	97.9	85	115			
Cadmium	0.012	0.00050	0.01250	0	96.6	85	115			
Chromium	0.024	0.0010	0.02500	0	97.8	85	115			
Lead	0.012	0.00050	0.01250	0	97.4	85	115			
Nickel	0.024	0.0010	0.02500	0	97.7	85	115			
Selenium	0.024	0.0010	0.02500	0	95.0	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203574**

24-Mar-22

Client: Marathon

Project: 2022 Quarterly Sampling 1st Qtr

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B86600**	RunNo: **86600**
Prep Date:	Analysis Date: **3/18/2022**	SeqNo: **3056942** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Barium	ND	0.0010								
Beryllium	ND	0.0010								
Cadmium	ND	0.00050								
Chromium	ND	0.0010								
Lead	ND	0.00050								
Nickel	ND	0.0010								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B86600**	RunNo: **86600**
Prep Date:	Analysis Date: **3/18/2022**	SeqNo: **3056943** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.0011	0.0010	0.001000	0	110	50	150			
Barium	0.0012	0.0010	0.001000	0	120	50	150			
Beryllium	0.0011	0.0010	0.001000	0	107	50	150			
Cadmium	0.00054	0.00050	0.0005000	0	108	50	150			
Chromium	0.0011	0.0010	0.001000	0	107	50	150			
Lead	0.00054	0.00050	0.0005000	0	109	50	150			
Nickel	0.0011	0.0010	0.001000	0	106	50	150			
Selenium	0.0012	0.0010	0.001000	0	116	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B86600**	RunNo: **86600**
Prep Date:	Analysis Date: **3/18/2022**	SeqNo: **3056944** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.026	0.0010	0.02500	0	103	85	115			
Barium	0.025	0.0010	0.02500	0	102	85	115			
Beryllium	0.026	0.0010	0.02500	0	105	85	115			
Cadmium	0.014	0.00050	0.01250	0	108	85	115			
Chromium	0.026	0.0010	0.02500	0	103	85	115			
Lead	0.013	0.00050	0.01250	0	106	85	115			
Nickel	0.026	0.0010	0.02500	0	105	85	115			
Selenium	0.028	0.0010	0.02500	0	113	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203574**

24-Mar-22

Client: Marathon

Project: 2022 Quarterly Sampling 1st Qtr

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A86624**	RunNo: **86624**
Prep Date:	Analysis Date: **3/21/2022**	SeqNo: **3058028** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Barium	ND	0.0010								
Beryllium	ND	0.0010								
Cadmium	ND	0.00050								
Chromium	ND	0.0010								
Lead	ND	0.00050								
Nickel	ND	0.0010								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A86624**	RunNo: **86624**
Prep Date:	Analysis Date: **3/21/2022**	SeqNo: **3058029** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0011	0.0010	0.001000	0	115	50	150			
Arsenic	0.0010	0.0010	0.001000	0	101	50	150			
Barium	0.00091	0.0010	0.001000	0	91.1	50	150			J
Beryllium	0.0011	0.0010	0.001000	0	106	50	150			
Cadmium	0.00051	0.00050	0.0005000	0	103	50	150			
Chromium	0.0010	0.0010	0.001000	0	102	50	150			
Lead	0.00054	0.00050	0.0005000	0	108	50	150			
Nickel	0.00098	0.0010	0.001000	0	98.4	50	150			J
Selenium	0.00097	0.0010	0.001000	0	96.6	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A86624**	RunNo: **86624**
Prep Date:	Analysis Date: **3/21/2022**	SeqNo: **3058030** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	102	85	115			
Arsenic	0.026	0.0010	0.02500	0	103	85	115			
Barium	0.026	0.0010	0.02500	0	103	85	115			
Beryllium	0.027	0.0010	0.02500	0	107	85	115			
Cadmium	0.013	0.00050	0.01250	0	105	85	115			
Chromium	0.027	0.0010	0.02500	0	107	85	115			
Lead	0.013	0.00050	0.01250	0	105	85	115			
Nickel	0.026	0.0010	0.02500	0	105	85	115			
Selenium	0.025	0.0010	0.02500	0	99.8	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203574**
24-Mar-22

Client: Marathon
Project: 2022 Quarterly Sampling 1st Qtr

Sample ID: **MB-66259**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **PBW**	Batch ID: **66259**	RunNo: **86582**							
Prep Date: **3/18/2022**	Analysis Date: **3/18/2022**	SeqNo: **3055992**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-66259**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **BatchQC**	Batch ID: **66259**	RunNo: **86582**							
Prep Date: **3/18/2022**	Analysis Date: **3/18/2022**	SeqNo: **3055993**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00021	0.00020	0.0001500	0	143	50	150			

Sample ID: **LCS-66259**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **LCSW**	Batch ID: **66259**	RunNo: **86582**							
Prep Date: **3/18/2022**	Analysis Date: **3/18/2022**	SeqNo: **3055994**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0053	0.00020	0.005000	0	107	85	115			

Sample ID: **MB-66260**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **PBW**	Batch ID: **66260**	RunNo: **86582**							
Prep Date: **3/18/2022**	Analysis Date: **3/18/2022**	SeqNo: **3055995**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00012	0.00020								J

Sample ID: **LCSLL-66260**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **BatchQC**	Batch ID: **66260**	RunNo: **86582**							
Prep Date: **3/18/2022**	Analysis Date: **3/18/2022**	SeqNo: **3055996**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00021	0.00020	0.0001500	0	140	50	150			

Sample ID: **lcs-66260**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **LCSW**	Batch ID: **66260**	RunNo: **86582**							
Prep Date: **3/18/2022**	Analysis Date: **3/18/2022**	SeqNo: **3055999**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0052	0.00020	0.005000	0	104	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203574**
24-Mar-22

Client: Marathon
Project: 2022 Quarterly Sampling 1st Qtr

Sample ID: **2203574-002DMS**	SampType: **MS**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **MKTF-41**	Batch ID: **66259**	RunNo: **86582**
Prep Date: **3/18/2022**	Analysis Date: **3/18/2022**	SeqNo: **3056011** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0046	0.00020	0.005000	0.0001110	89.0	75	125			

Sample ID: **2203574-002DMSD**	SampType: **MSD**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **MKTF-41**	Batch ID: **66259**	RunNo: **86582**
Prep Date: **3/18/2022**	Analysis Date: **3/18/2022**	SeqNo: **3056012** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0046	0.00020	0.005000	0.0001110	89.9	75	125	0.951	20	

Sample ID: **2203574-008DMS**	SampType: **MS**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **EB-3-9-22**	Batch ID: **66260**	RunNo: **86582**
Prep Date: **3/18/2022**	Analysis Date: **3/18/2022**	SeqNo: **3056029** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0053	0.00020	0.005000	0	106	75	125			

Sample ID: **2203574-008DMSD**	SampType: **MSD**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **EB-3-9-22**	Batch ID: **66260**	RunNo: **86582**
Prep Date: **3/18/2022**	Analysis Date: **3/18/2022**	SeqNo: **3056030** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0052	0.00020	0.005000	0	105	75	125	0.758	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203574**

24-Mar-22

Client: Marathon

Project: 2022 Quarterly Sampling 1st Qtr

Sample ID: **MB-66232**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **66232**	RunNo: **86558**							
Prep Date: **3/17/2022**	Analysis Date: **3/17/2022**	SeqNo: **3054885**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **MB-66232**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **66232**	RunNo: **86558**							
Prep Date: **3/17/2022**	Analysis Date: **3/17/2022**	SeqNo: **3054886**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-66232**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **LCSW**	Batch ID: **66232**	RunNo: **86558**							
Prep Date: **3/17/2022**	Analysis Date: **3/17/2022**	SeqNo: **3054887**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.098	0.010	0.1000	0	97.8	70	130			

Sample ID: **LCSD-66232**	SampType: **LCSD**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **LCSS02**	Batch ID: **66232**	RunNo: **86558**							
Prep Date: **3/17/2022**	Analysis Date: **3/17/2022**	SeqNo: **3054888**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.094	0.010	0.1000	0	94.2	70	130	3.77	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203574**
24-Mar-22

Client: Marathon
Project: 2022 Quarterly Sampling 1st Qtr

Sample ID: **MB-66129**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **PBW**	Batch ID: **66129**	RunNo: **86465**							
Prep Date: **3/11/2022**	Analysis Date: **3/15/2022**	SeqNo: **3052729**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.026	0.064								J
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.036		0.03750		95.7	42.2	138			

Sample ID: **LCSD-66129**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSS02**	Batch ID: **66129**	RunNo: **86465**							
Prep Date: **3/11/2022**	Analysis Date: **3/15/2022**	SeqNo: **3052743**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.11	0.064	0.1875	0	60.5	31.7	75.4	3.68	20	
Surr: DNOP	0.018		0.01875		96.9	42.2	138	0	0	

Sample ID: **LCS-66129**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSW**	Batch ID: **66129**	RunNo: **86465**							
Prep Date: **3/11/2022**	Analysis Date: **3/15/2022**	SeqNo: **3052754**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.11	0.064	0.1875	0	58.3	31.7	75.4			
Surr: DNOP	0.018		0.01875		96.6	42.2	138			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203574**
24-Mar-22

Client: Marathon
Project: 2022 Quarterly Sampling 1st Qtr

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R86565**	RunNo: **86565**
Prep Date:	Analysis Date: **3/17/2022**	SeqNo: **3055126** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	90.1	70	130			
Toluene	20	1.0	20.00	0	99.7	70	130			
Chlorobenzene	20	1.0	20.00	0	100	70	130			
1,1-Dichloroethene	17	1.0	20.00	0	84.2	70	130			
Trichloroethene (TCE)	16	1.0	20.00	0	82.1	70	130			
Surr: 1,2-Dichloroethane-d4	9.3		10.00		93.5	70	130			
Surr: 4-Bromofluorobenzene	9.7		10.00		97.2	70	130			
Surr: Dibromofluoromethane	9.4		10.00		93.7	70	130			
Surr: Toluene-d8	9.9		10.00		98.9	70	130			

Sample ID: **2203574-001ams**	SampType: **MS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **MKTF-42**	Batch ID: **R86565**	RunNo: **86565**
Prep Date:	Analysis Date: **3/17/2022**	SeqNo: **3055128** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	26	1.0	20.00	9.532	82.5	70	130			
Toluene	20	1.0	20.00	0.4338	97.4	70	130			
Chlorobenzene	21	1.0	20.00	0	103	70	130			
1,1-Dichloroethene	17	1.0	20.00	1.124	80.3	70	130			
Trichloroethene (TCE)	16	1.0	20.00	0	77.6	70	130			
Surr: 1,2-Dichloroethane-d4	9.0		10.00		89.7	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		97.9	70	130			
Surr: Dibromofluoromethane	9.6		10.00		95.7	70	130			
Surr: Toluene-d8	10		10.00		105	70	130			

Sample ID: **2203574-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **MKTF-42**	Batch ID: **R86565**	RunNo: **86565**
Prep Date:	Analysis Date: **3/17/2022**	SeqNo: **3055129** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	25	1.0	20.00	9.532	79.6	70	130	2.26	20	
Toluene	20	1.0	20.00	0.4338	96.7	70	130	0.745	20	
Chlorobenzene	21	1.0	20.00	0	104	70	130	0.264	20	
1,1-Dichloroethene	16	1.0	20.00	1.124	76.2	70	130	4.87	20	
Trichloroethene (TCE)	15	1.0	20.00	0	74.6	70	130	3.95	20	
Surr: 1,2-Dichloroethane-d4	9.4		10.00		93.5	70	130	0	0	
Surr: 4-Bromofluorobenzene	9.4		10.00		94.1	70	130	0	0	
Surr: Dibromofluoromethane	9.5		10.00		94.7	70	130	0	0	
Surr: Toluene-d8	11		10.00		106	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203574**

24-Mar-22

Client: Marathon

Project: 2022 Quarterly Sampling 1st Qtr

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R86565**	RunNo: **86565**
Prep Date:	Analysis Date: **3/17/2022**	SeqNo: **3055141** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	0.65	3.0								J
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	0.24	1.0								J
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	8.8		10.00		88.0	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		100	70	130			
Surr: Dibromofluoromethane	9.2		10.00		91.7	70	130			
Surr: Toluene-d8	10		10.00		104	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203574**

24-Mar-22

Client: Marathon

Project: 2022 Quarterly Sampling 1st Qtr

Sample ID: **MB-66111**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **66111**	RunNo: **86500**
Prep Date: **3/11/2022**	Analysis Date: **3/16/2022**	SeqNo: **3053319** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	5.0								
2,4-Dinitrophenol	ND	5.0								
2-Methylphenol	ND	5.0								
3+4-Methylphenol	ND	5.0								
Phenol	ND	5.0								
Pyridine	ND	10								
2,4,6-Trichlorophenol	ND	5.0								
Surr: 2-Fluorophenol	98		200.0		48.8	29.4	87.7			
Surr: Phenol-d5	74		200.0		37.0	28.5	64.7			
Surr: 2,4,6-Tribromophenol	120		200.0		60.7	18.6	129			
Surr: Nitrobenzene-d5	56		100.0		56.1	36.9	103			
Surr: 2-Fluorobiphenyl	54		100.0		54.1	38.1	99.9			
Surr: 4-Terphenyl-d14	96		100.0		96.3	48	155			

Sample ID: **LCS-66111**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **66111**	RunNo: **86500**
Prep Date: **3/11/2022**	Analysis Date: **3/16/2022**	SeqNo: **3053320** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	52	5.0	100.0	0	51.7	15	87.6			
Phenol	75	5.0	200.0	0	37.7	16.8	70.5			
Surr: 2-Fluorophenol	95		200.0		47.6	29.4	87.7			
Surr: Phenol-d5	73		200.0		36.4	28.5	64.7			
Surr: 2,4,6-Tribromophenol	130		200.0		67.3	18.6	129			
Surr: Nitrobenzene-d5	59		100.0		59.1	36.9	103			
Surr: 2-Fluorobiphenyl	57		100.0		57.2	38.1	99.9			
Surr: 4-Terphenyl-d14	86		100.0		85.5	48	155			

Sample ID: **LCSD-66111**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **66111**	RunNo: **86500**
Prep Date: **3/11/2022**	Analysis Date: **3/16/2022**	SeqNo: **3053321** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203574**
24-Mar-22

Client: Marathon
Project: 2022 Quarterly Sampling 1st Qtr

Sample ID: **LCSD-66111** SampType: **LCSD** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02** Batch ID: **66111** RunNo: **86500**
Prep Date: **3/11/2022** Analysis Date: **3/16/2022** SeqNo: **3053321** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	37	5.0	100.0	0	37.4	15	87.6	32.0	30.4	R
Phenol	51	5.0	200.0	0	25.4	16.8	70.5	38.9	37.2	R
Surr: 2-Fluorophenol	65		200.0		32.3	29.4	87.7	0	0	
Surr: Phenol-d5	51		200.0		25.6	28.5	64.7	0	0	S
Surr: 2,4,6-Tribromophenol	100		200.0		50.4	18.6	129	0	0	
Surr: Nitrobenzene-d5	43		100.0		42.6	36.9	103	0	0	
Surr: 2-Fluorobiphenyl	38		100.0		38.3	38.1	99.9	0	0	
Surr: 4-Terphenyl-d14	88		100.0		88.2	48	155	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203574**

24-Mar-22

Client: Marathon

Project: 2022 Quarterly Sampling 1st Qtr

Sample ID: **mb-66214**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **66214**	RunNo: **86562**
Prep Date: **3/16/2022**	Analysis Date: **3/17/2022**	SeqNo: **3054985** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.10								
2-Methylnaphthalene	ND	0.10								
Acenaphthene	ND	0.10								
Fluorene	ND	0.10								
Phenanthrene	ND	0.10								
Anthracene	ND	0.10								
Fluoranthene	ND	0.20								
Pyrene	ND	0.20								
Benz(a)anthracene	ND	0.10								
Chrysene	ND	0.10								
Benzo(b)fluoranthene	ND	0.10								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	2.5		4.000		62.5	31.6	100			
Surr: 2,4,6-Tribromophenol	4.3		8.000		54.2	22	101			
Surr: 2-Fluorobiphenyl	1.9		4.000		48.0	26.7	90.1			
Surr: 4-Terphenyl-d14	4.0		4.000		101	72.3	147			

Sample ID: **lcs-66214**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **66214**	RunNo: **86562**
Prep Date: **3/16/2022**	Analysis Date: **3/17/2022**	SeqNo: **3054986** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.68	0.10	2.000	0	34.0	20.2	48.4			
Naphthalene	1.0	0.10	2.000	0	52.0	21.3	79.9			
1-Methylnaphthalene	1.1	0.10	2.000	0	53.0	22.2	80.3			
2-Methylnaphthalene	1.0	0.10	2.000	0	52.0	20.6	80.1			
Acenaphthene	1.2	0.10	2.000	0	58.0	29.8	82.7			
Fluorene	1.2	0.10	2.000	0	62.0	33.3	86			
Phenanthrene	1.3	0.10	2.000	0	65.0	38.2	93.9			
Anthracene	1.4	0.10	2.000	0	69.0	41.1	95.6			
Fluoranthene	1.8	0.20	2.000	0	92.0	52.9	123			
Pyrene	1.7	0.20	2.000	0	83.0	51	113			
Benz(a)anthracene	2.2	0.10	2.000	0	111	51	147			
Chrysene	1.7	0.10	2.000	0	86.0	55.3	115			
Benzo(b)fluoranthene	2.0	0.10	2.000	0	101	44.4	136			
Indeno(1,2,3-cd)pyrene	2.6	0.30	2.000	0	128	31.4	165			
Surr: Nitrobenzene-d5	3.8		5.000		76.0	31.6	100			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203574**

24-Mar-22

Client: Marathon

Project: 2022 Quarterly Sampling 1st Qtr

Sample ID: **lcs-66214**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **66214**	RunNo: **86562**
Prep Date: **3/16/2022**	Analysis Date: **3/17/2022**	SeqNo: **3054986** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	7.1		10.00		70.8	22	101			
Surr: 2-Fluorobiphenyl	3.0		5.000		59.2	26.7	90.1			
Surr: 4-Terphenyl-d14	5.8		5.000		116	72.3	147			

Sample ID: **lcsd-66214**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02**	Batch ID: **66214**	RunNo: **86562**
Prep Date: **3/16/2022**	Analysis Date: **3/17/2022**	SeqNo: **3054987** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.70	0.10	2.000	0	35.0	20.2	48.4	2.90	30.1	
Naphthalene	1.0	0.10	2.000	0	52.0	21.3	79.9	0	25.6	
1-Methylnaphthalene	1.1	0.10	2.000	0	53.0	22.2	80.3	0	25	
2-Methylnaphthalene	1.1	0.10	2.000	0	53.0	20.6	80.1	1.90	25	
Acenaphthene	1.2	0.10	2.000	0	58.0	29.8	82.7	0	27.8	
Fluorene	1.2	0.10	2.000	0	62.0	33.3	86	0	26.4	
Phenanthrene	1.3	0.10	2.000	0	64.0	38.2	93.9	1.55	27.9	
Anthracene	1.4	0.10	2.000	0	69.0	41.1	95.6	0	25.6	
Fluoranthene	1.8	0.20	2.000	0	91.0	52.9	123	1.09	22.8	
Pyrene	1.7	0.20	2.000	0	85.0	51	113	2.38	20	
Benz(a)anthracene	2.1	0.10	2.000	0	103	51	147	7.48	24.1	
Chrysene	1.7	0.10	2.000	0	84.0	55.3	115	2.35	20	
Benzo(b)fluoranthene	2.0	0.10	2.000	0	100	44.4	136	0.995	24.5	
Indeno(1,2,3-cd)pyrene	2.5	0.30	2.000	0	126	31.4	165	1.57	21.1	
Surr: Nitrobenzene-d5	3.4		5.000		68.4	31.6	100	0	0	
Surr: 2,4,6-Tribromophenol	6.4		10.00		63.6	22	101	0	0	
Surr: 2-Fluorobiphenyl	2.6		5.000		52.4	26.7	90.1	0	0	
Surr: 4-Terphenyl-d14	5.7		5.000		113	72.3	147	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203574**

24-Mar-22

Client: Marathon

Project: 2022 Quarterly Sampling 1st Qtr

Sample ID: **2.5ug lcs gro**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **R86565**	RunNo: **86565**
Prep Date:	Analysis Date: **3/17/2022**	SeqNo: **3055144** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.43	0.050	0.5000	0	86.8	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **R86565**	RunNo: **86565**
Prep Date:	Analysis Date: **3/17/2022**	SeqNo: **3055166** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.042	0.050								J
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: Marathon | Work Order Number: 2203574 | RcptNo: 1

Received By: Cheyenne Cason 3/10/2022 8:00:00 AM
Completed By: Cheyenne Cason 3/10/2022 8:43:16 AM
Reviewed By: TMC 3/10/22

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preserved added to bottles? Yes ☒ ~~No ☑~~ CMC 3/10/22 NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☑ No ☐ NA ☐
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐ # of preserved bottles checked for pH: 16 (8) (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐ Adjusted? yes
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐ Checked by: CMC 3/10/22

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

16. Additional remarks: added ~0.4mL HNO3 to 0035 for pH < 2 CMC 3/10/22

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.8	Good	Yes			
2	3.5	Good	Yes			
3	0.9	Good	Yes			
4	0.9	Good	Yes			

Page 570 of 3808

Chain-of-Custody Record

Client: Marathon Gallup Refinery

Mailing Address: 92 Giant Crossing Road
Jamestown, NM,87347

Phone #: 808-640-1823

email or Fax#:

QA/QC Package:
X Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

X EDD (Type)

Turn-Around Time:
X Standard Rush

Project Name:
2022 GW Sampling 1st Quarter

Project #: **697-080-001**

Project Manager:
Lesli Alexander/Mackensie Swift

Sampler: Hilario Trejo
On Ice: ☒ Yes ☐ No
# of Coolers: 4
Cooler Temp(including CF): See Remarks

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2203574	See Analyte List	8260B: VOC	8270C: SVOC	8270C SIM: PAH, 1,4 Dioxane	8015: TPH GRO/DRO/MRO	E200.7: Metals	E200.7: Dissolved Metals	E245.1 Mercury	E504.1: EDB	E335.4: Cyanide Subbed	755 Per Pollen	537.1: PFAS	SM 5201B: BOD	410.4: COD	SM9223B E Coli
3-9-22	9:00		MKTF-42	13		001	X	X	X	X	X	X	X	X	X	X	X				
3-9-22	9:35		MKTF-41	14		002	X	X	X	X	X	X	X	X	X	X	X				
3-9-22	10:06		MKTF-32	14		003	X	X	X	X	X	X	X	X	X	X	X				
3-9-22	10:20		MKTF-34	14		004	X	X	X	X	X	X	X	X	X	X	X				
3-9-22	10:40		PW-3	13		005	X	X	X	X	X	X	X	X	X	X					
3-9-22	8:35		PW-4	13		006	X	X	X	X	X	X	X	X	X	X					
3-9-22	—		DUP-3-9-22	13		007	X	X	X	X	X	X	X	X	X	X					
3-9-22	8:30		EB-3-9-22	13		008	X	X	X	X	X	X	X	X	X						
3-9-22	10:40		FB 3-9-22	2		009	X	X													
			Trip Blank			010															

Date	Time	Relinquished by	Received by	Via	Date	Time
3-9-22	1:00	Hilario Trejo	Cenr		3/10/22	0800
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

2.8 - 0 = 2.8
3.5 - 0 = 3.5
0.9 - 0 = 0.9
0.9 - 0 = 0.9

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Received by OCD: 4/21/2023 9:21:37 AM
Released to Imaging: 4/21/2023 9:40:26 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

April 22, 2022

Lesli Alexander

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX (505) 632-3911

RE: 2022 GW Sampling 1st Qtr OrderNo.: 2203667

Dear Lesli Alexander:

Hall Environmental Analysis Laboratory received 11 sample(s) on 3/11/2022 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued April 14, 2022.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **2203667**
Date: **4/22/2022**

CLIENT: Marathon
Project: 2022 GW Sampling 1st Qtr

Analytical Notes Regarding EPA Method 8270 SIMS:
A laboratory error on the spiking of the LCS/LCSD occurred. The LCS/LCSD for only the 8270 SIMS compound was spiked with the inappropriate spike and we could not determine the LCS/LCSD concentrations for the samples in this batch. The surrogate recoveries were all acceptable for the 8270SIMS samples and all other method criteria were met. We have flagged all compounds with an "E" flag to represent the fact that the data for the 8270SIM test should be considered estimated.

"S" flagged denote that the surrogate recoveries are outstide of the standard limits due to matrix interferences/sample dilution.

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-10-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022 8:00:00 AM
Lab ID: 2203667-001A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	3/18/2022 3:58:08 PM	R86601
Toluene	ND	0.20	1.0		µg/L	1	3/18/2022 3:58:08 PM	R86601
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/18/2022 3:58:08 PM	R86601
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/18/2022 3:58:08 PM	R86601
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/18/2022 3:58:08 PM	R86601
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/18/2022 3:58:08 PM	R86601
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	3/18/2022 3:58:08 PM	R86601
Acetone	ND	2.5	10		µg/L	1	3/18/2022 3:58:08 PM	R86601
Bromomethane	ND	0.85	3.0		µg/L	1	3/18/2022 3:58:08 PM	R86601
2-Butanone	5.7	2.0	10	J	µg/L	1	3/18/2022 3:58:08 PM	R86601
Carbon disulfide	ND	0.59	10		µg/L	1	3/18/2022 3:58:08 PM	R86601
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/18/2022 3:58:08 PM	R86601
Chloroform	ND	0.13	1.0		µg/L	1	3/18/2022 3:58:08 PM	R86601
Chloromethane	0.78	0.41	3.0	J	µg/L	1	3/18/2022 3:58:08 PM	R86601
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/18/2022 3:58:08 PM	R86601
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/18/2022 3:58:08 PM	R86601
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/18/2022 3:58:08 PM	R86601
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/18/2022 3:58:08 PM	R86601
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/18/2022 3:58:08 PM	R86601
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/18/2022 3:58:08 PM	R86601
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/18/2022 3:58:08 PM	R86601
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/18/2022 3:58:08 PM	R86601
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/18/2022 3:58:08 PM	R86601
Styrene	ND	0.14	1.0		µg/L	1	3/18/2022 3:58:08 PM	R86601
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/18/2022 3:58:08 PM	R86601
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/18/2022 3:58:08 PM	R86601
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/18/2022 3:58:08 PM	R86601
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/18/2022 3:58:08 PM	R86601
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/18/2022 3:58:08 PM	R86601
Surr: 1,2-Dichloroethane-d4	89.5	0	70-130		%Rec	1	3/18/2022 3:58:08 PM	R86601
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	3/18/2022 3:58:08 PM	R86601
Surr: Dibromofluoromethane	93.9	0	70-130		%Rec	1	3/18/2022 3:58:08 PM	R86601
Surr: Toluene-d8	105	0	70-130		%Rec	1	3/18/2022 3:58:08 PM	R86601
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.039	0.012	0.050	J	mg/L	1	3/18/2022 3:58:08 PM	R86601
Surr: 4-Bromofluorobenzene	107	0	70-130		%Rec	1	3/18/2022 3:58:08 PM	R86601

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-10-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022 8:00:00 AM
Lab ID: 2203667-001B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.035	0.095	D	µg/L	10	3/17/2022 7:31:21 PM	66232

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-10-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022 8:00:00 AM
Lab ID: 2203667-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.025	0.016	0.064	J	mg/L	1	3/15/2022 3:04:03 PM	66129
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/15/2022 3:04:03 PM	66129
Surr: DNOP	103	0	42.2-138		%Rec	1	3/15/2022 3:04:03 PM	66129
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	1.1	20		µg/L	1	3/17/2022 2:52:57 PM	66142
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/17/2022 2:52:57 PM	66142
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/17/2022 2:52:57 PM	66142
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/17/2022 2:52:57 PM	66142
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/17/2022 2:52:57 PM	66142
Diethyl phthalate	ND	3.9	10		µg/L	1	3/17/2022 2:52:57 PM	66142
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/17/2022 2:52:57 PM	66142
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/17/2022 2:52:57 PM	66142
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/17/2022 2:52:57 PM	66142
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/17/2022 2:52:57 PM	66142
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/17/2022 2:52:57 PM	66142
Phenol	ND	0.33	5.0		µg/L	1	3/17/2022 2:52:57 PM	66142
Pyridine	ND	10	10		µg/L	1	3/17/2022 2:52:57 PM	66142
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/17/2022 2:52:57 PM	66142
Surr: 2-Fluorophenol	46.7	0	29.4-87.7		%Rec	1	3/17/2022 2:52:57 PM	66142
Surr: Phenol-d5	33.8	0	28.5-64.7		%Rec	1	3/17/2022 2:52:57 PM	66142
Surr: 2,4,6-Tribromophenol	61.5	0	18.6-129		%Rec	1	3/17/2022 2:52:57 PM	66142
Surr: Nitrobenzene-d5	60.2	0	36.9-103		%Rec	1	3/17/2022 2:52:57 PM	66142
Surr: 2-Fluorobiphenyl	57.7	0	38.1-99.9		%Rec	1	3/17/2022 2:52:57 PM	66142
Surr: 4-Terphenyl-d14	99.8	0	48-155		%Rec	1	3/17/2022 2:52:57 PM	66142
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.048	1.0	E	µg/L	1	3/17/2022 1:45:00 AM	R86533
Naphthalene	ND	0.034	0.10	E	µg/L	1	3/17/2022 1:45:00 AM	R86533
1-Methylnaphthalene	ND	0.024	0.10	E	µg/L	1	3/17/2022 1:45:00 AM	R86533
2-Methylnaphthalene	ND	0.034	0.10	E	µg/L	1	3/17/2022 1:45:00 AM	R86533
Acenaphthene	ND	0.031	0.10	E	µg/L	1	3/17/2022 1:45:00 AM	R86533
Fluorene	ND	0.031	0.10	E	µg/L	1	3/17/2022 1:45:00 AM	R86533
Phenanthrene	ND	0.057	0.10	E	µg/L	1	3/17/2022 1:45:00 AM	R86533
Anthracene	ND	0.034	0.10	E	µg/L	1	3/17/2022 1:45:00 AM	R86533
Fluoranthene	ND	0.10	0.20	E	µg/L	1	3/17/2022 1:45:00 AM	R86533
Pyrene	0.24	0.16	0.20	E	µg/L	1	3/17/2022 1:45:00 AM	R86533
Benz(a)anthracene	ND	0.036	0.10	E	µg/L	1	3/17/2022 1:45:00 AM	R86533
Chrysene	ND	0.024	0.10	E	µg/L	1	3/17/2022 1:45:00 AM	R86533
Benzo(b)fluoranthene	ND	0.057	0.10	E	µg/L	1	3/17/2022 1:45:00 AM	R86533
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30	E	µg/L	1	3/17/2022 1:45:00 AM	R86533

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-10-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022 8:00:00 AM
Lab ID: 2203667-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	59.7	0	31.6-100	E	%Rec	1	3/17/2022 1:45:00 AM	R86533
Surr: 2-Fluorobiphenyl	59.2	0	26.7-90.1	E	%Rec	1	3/17/2022 1:45:00 AM	R86533
Surr: 4-Terphenyl-d14	109	0	72.3-147	E	%Rec	1	3/17/2022 1:45:00 AM	R86533

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-10-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022 8:00:00 AM
Lab ID: 2203667-001D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	ND	0.0016	0.0030		mg/L	1	4/6/2022 11:03:54 AM	66641
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 11:03:54 AM	66641
Cadmium	ND	0.0015	0.0020		mg/L	1	4/6/2022 11:03:54 AM	66641
Chromium	ND	0.0021	0.0060		mg/L	1	4/6/2022 11:03:54 AM	66641
Cobalt	ND	0.0024	0.0060		mg/L	1	4/6/2022 11:03:54 AM	66641
Nickel	ND	0.0033	0.010		mg/L	1	4/6/2022 11:03:54 AM	66641
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 11:03:54 AM	66641
Vanadium	ND	0.0024	0.050		mg/L	1	4/6/2022 11:03:54 AM	66641
Zinc	ND	0.0064	0.010		mg/L	1	4/6/2022 11:03:54 AM	66641
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/17/2022 4:09:40 PM	66191
Arsenic	ND	0.00013	0.0010		mg/L	1	3/17/2022 4:09:40 PM	66191
Lead	ND	0.000061	0.00050		mg/L	1	3/17/2022 4:09:40 PM	66191
Selenium	ND	0.00037	0.0010		mg/L	1	3/17/2022 4:09:40 PM	66191
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/21/2022 1:28:25 PM	66283

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-10-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022 8:00:00 AM
Lab ID: 2203667-001E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	ND	0.0011	0.0020		mg/L	1	3/14/2022 9:43:59 AM	A86443
Beryllium	ND	0.00088	0.0020		mg/L	1	3/14/2022 9:43:59 AM	A86443
Cadmium	ND	0.00098	0.0020		mg/L	1	3/14/2022 9:43:59 AM	A86443
Chromium	ND	0.0020	0.0060		mg/L	1	3/14/2022 9:43:59 AM	A86443
Cobalt	ND	0.0024	0.0060		mg/L	1	3/14/2022 9:43:59 AM	A86443
Nickel	ND	0.0033	0.010		mg/L	1	3/14/2022 9:43:59 AM	A86443
Silver	ND	0.0013	0.0050		mg/L	1	3/14/2022 9:43:59 AM	A86443
Vanadium	ND	0.0017	0.050		mg/L	1	3/14/2022 9:43:59 AM	A86443
Zinc	0.0070	0.0032	0.010	J	mg/L	1	3/14/2022 9:43:59 AM	A86443
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/15/2022 11:51:53 AM	A86482
Arsenic	ND	0.00012	0.0010		mg/L	1	3/15/2022 11:51:53 AM	A86482
Lead	ND	0.000057	0.00050		mg/L	1	3/15/2022 11:51:53 AM	A86482
Selenium	ND	0.00034	0.0010		mg/L	1	3/15/2022 11:51:53 AM	A86482
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/21/2022 1:30:31 PM	66283

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-46
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022 8:00:00 AM
Lab ID: 2203667-002A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	3/18/2022 4:26:45 PM	R86601
Toluene	ND	0.20	1.0		µg/L	1	3/18/2022 4:26:45 PM	R86601
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/18/2022 4:26:45 PM	R86601
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/18/2022 4:26:45 PM	R86601
1,2,4-Trimethylbenzene	0.37	0.12	1.0	J	µg/L	1	3/18/2022 4:26:45 PM	R86601
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/18/2022 4:26:45 PM	R86601
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	3/18/2022 4:26:45 PM	R86601
Acetone	ND	2.5	10		µg/L	1	3/18/2022 4:26:45 PM	R86601
Bromomethane	ND	0.85	3.0		µg/L	1	3/18/2022 4:26:45 PM	R86601
2-Butanone	ND	2.0	10		µg/L	1	3/18/2022 4:26:45 PM	R86601
Carbon disulfide	ND	0.59	10		µg/L	1	3/18/2022 4:26:45 PM	R86601
Chlorobenzene	0.19	0.16	1.0	J	µg/L	1	3/18/2022 4:26:45 PM	R86601
Chloroform	ND	0.13	1.0		µg/L	1	3/18/2022 4:26:45 PM	R86601
Chloromethane	0.67	0.41	3.0	J	µg/L	1	3/18/2022 4:26:45 PM	R86601
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/18/2022 4:26:45 PM	R86601
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/18/2022 4:26:45 PM	R86601
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/18/2022 4:26:45 PM	R86601
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/18/2022 4:26:45 PM	R86601
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/18/2022 4:26:45 PM	R86601
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/18/2022 4:26:45 PM	R86601
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/18/2022 4:26:45 PM	R86601
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/18/2022 4:26:45 PM	R86601
sec-Butylbenzene	0.21	0.14	1.0	J	µg/L	1	3/18/2022 4:26:45 PM	R86601
Styrene	ND	0.14	1.0		µg/L	1	3/18/2022 4:26:45 PM	R86601
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/18/2022 4:26:45 PM	R86601
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/18/2022 4:26:45 PM	R86601
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/18/2022 4:26:45 PM	R86601
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/18/2022 4:26:45 PM	R86601
Xylenes, Total	0.77	0.37	1.5	J	µg/L	1	3/18/2022 4:26:45 PM	R86601
Surr: 1,2-Dichloroethane-d4	87.8	0	70-130		%Rec	1	3/18/2022 4:26:45 PM	R86601
Surr: 4-Bromofluorobenzene	105	0	70-130		%Rec	1	3/18/2022 4:26:45 PM	R86601
Surr: Dibromofluoromethane	91.3	0	70-130		%Rec	1	3/18/2022 4:26:45 PM	R86601
Surr: Toluene-d8	98.1	0	70-130		%Rec	1	3/18/2022 4:26:45 PM	R86601
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.061	0.012	0.050		mg/L	1	3/18/2022 4:26:45 PM	R86601
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	3/18/2022 4:26:45 PM	R86601

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-46
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022 8:00:00 AM
Lab ID: 2203667-002B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.034	0.093	D	µg/L	10	3/17/2022 8:01:42 PM	66232

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-46
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022 8:00:00 AM
Lab ID: 2203667-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.042	0.016	0.064	J	mg/L	1	3/15/2022 3:27:46 PM	66129
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/15/2022 3:27:46 PM	66129
Surr: DNOP	99.6	0	42.2-138		%Rec	1	3/15/2022 3:27:46 PM	66129
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	1.1	20		µg/L	1	3/17/2022 3:34:20 PM	66142
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/17/2022 3:34:20 PM	66142
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/17/2022 3:34:20 PM	66142
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/17/2022 3:34:20 PM	66142
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/17/2022 3:34:20 PM	66142
Diethyl phthalate	ND	3.9	10		µg/L	1	3/17/2022 3:34:20 PM	66142
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/17/2022 3:34:20 PM	66142
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/17/2022 3:34:20 PM	66142
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/17/2022 3:34:20 PM	66142
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/17/2022 3:34:20 PM	66142
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/17/2022 3:34:20 PM	66142
Phenol	ND	0.33	5.0		µg/L	1	3/17/2022 3:34:20 PM	66142
Pyridine	ND	10	10		µg/L	1	3/17/2022 3:34:20 PM	66142
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/17/2022 3:34:20 PM	66142
Surr: 2-Fluorophenol	49.8	0	29.4-87.7		%Rec	1	3/17/2022 3:34:20 PM	66142
Surr: Phenol-d5	37.9	0	28.5-64.7		%Rec	1	3/17/2022 3:34:20 PM	66142
Surr: 2,4,6-Tribromophenol	55.8	0	18.6-129		%Rec	1	3/17/2022 3:34:20 PM	66142
Surr: Nitrobenzene-d5	59.2	0	36.9-103		%Rec	1	3/17/2022 3:34:20 PM	66142
Surr: 2-Fluorobiphenyl	60.4	0	38.1-99.9		%Rec	1	3/17/2022 3:34:20 PM	66142
Surr: 4-Terphenyl-d14	96.4	0	48-155		%Rec	1	3/17/2022 3:34:20 PM	66142
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	1.7	0.048	1.0	E	µg/L	1	3/17/2022 2:29:00 AM	R86533
Naphthalene	0.18	0.034	0.10	E	µg/L	1	3/17/2022 2:29:00 AM	R86533
1-Methylnaphthalene	ND	0.024	0.10	E	µg/L	1	3/17/2022 2:29:00 AM	R86533
2-Methylnaphthalene	ND	0.034	0.10	E	µg/L	1	3/17/2022 2:29:00 AM	R86533
Acenaphthene	ND	0.031	0.10	E	µg/L	1	3/17/2022 2:29:00 AM	R86533
Fluorene	ND	0.031	0.10	E	µg/L	1	3/17/2022 2:29:00 AM	R86533
Phenanthrene	ND	0.057	0.10	E	µg/L	1	3/17/2022 2:29:00 AM	R86533
Anthracene	ND	0.034	0.10	E	µg/L	1	3/17/2022 2:29:00 AM	R86533
Fluoranthene	ND	0.10	0.20	E	µg/L	1	3/17/2022 2:29:00 AM	R86533
Pyrene	ND	0.16	0.20	E	µg/L	1	3/17/2022 2:29:00 AM	R86533
Benz(a)anthracene	ND	0.036	0.10	E	µg/L	1	3/17/2022 2:29:00 AM	R86533
Chrysene	ND	0.024	0.10	E	µg/L	1	3/17/2022 2:29:00 AM	R86533
Benzo(b)fluoranthene	ND	0.057	0.10	E	µg/L	1	3/17/2022 2:29:00 AM	R86533
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30	E	µg/L	1	3/17/2022 2:29:00 AM	R86533

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Estimated value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-46
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022 8:00:00 AM
Lab ID: 2203667-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	67.9	0	31.6-100	E	%Rec	1	3/17/2022 2:29:00 AM	R86533
Surr: 2-Fluorobiphenyl	66.3	0	26.7-90.1	E	%Rec	1	3/17/2022 2:29:00 AM	R86533
Surr: 4-Terphenyl-d14	107	0	72.3-147	E	%Rec	1	3/17/2022 2:29:00 AM	R86533

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-46
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022 8:00:00 AM
Lab ID: 2203667-002D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.079	0.0016	0.0030		mg/L	1	4/6/2022 11:07:07 AM	66641
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 11:07:07 AM	66641
Cadmium	ND	0.0015	0.0020		mg/L	1	4/6/2022 11:07:07 AM	66641
Chromium	ND	0.0021	0.0060		mg/L	1	4/6/2022 11:07:07 AM	66641
Cobalt	0.0041	0.0024	0.0060	J	mg/L	1	4/6/2022 11:07:07 AM	66641
Nickel	ND	0.0033	0.010		mg/L	1	4/6/2022 11:07:07 AM	66641
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 11:07:07 AM	66641
Vanadium	0.0047	0.0024	0.050	J	mg/L	1	4/6/2022 11:07:07 AM	66641
Zinc	ND	0.0064	0.010		mg/L	1	4/6/2022 11:07:07 AM	66641
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/17/2022 4:12:06 PM	66191
Arsenic	0.0012	0.00013	0.0010		mg/L	1	3/17/2022 4:12:06 PM	66191
Lead	0.0011	0.000061	0.00050		mg/L	1	3/17/2022 4:12:06 PM	66191
Selenium	ND	0.00037	0.0010		mg/L	1	3/17/2022 4:12:06 PM	66191
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/21/2022 1:32:36 PM	66283

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-46
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022 8:00:00 AM
Lab ID: 2203667-002E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.030	0.0011	0.0020		mg/L	1	3/14/2022 9:45:36 AM	A86443
Beryllium	ND	0.00088	0.0020		mg/L	1	3/14/2022 9:45:36 AM	A86443
Cadmium	ND	0.00098	0.0020		mg/L	1	3/14/2022 9:45:36 AM	A86443
Chromium	ND	0.0020	0.0060		mg/L	1	3/14/2022 9:45:36 AM	A86443
Cobalt	0.0029	0.0024	0.0060	J	mg/L	1	3/14/2022 9:45:36 AM	A86443
Nickel	ND	0.0033	0.010		mg/L	1	3/14/2022 9:45:36 AM	A86443
Silver	ND	0.0013	0.0050		mg/L	1	3/14/2022 9:45:36 AM	A86443
Vanadium	0.0021	0.0017	0.050	J	mg/L	1	3/14/2022 9:45:36 AM	A86443
Zinc	0.0099	0.0032	0.010	J	mg/L	1	3/14/2022 9:45:36 AM	A86443
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	0.0015	0.00044	0.0010		mg/L	1	3/15/2022 12:08:02 PM	A86482
Arsenic	0.00093	0.00012	0.0010	J	mg/L	1	3/15/2022 12:08:02 PM	A86482
Lead	ND	0.000057	0.00050		mg/L	1	3/16/2022 1:30:36 PM	A86537
Selenium	ND	0.00034	0.0010		mg/L	1	3/15/2022 12:08:02 PM	A86482
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/21/2022 1:34:41 PM	66283

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-35
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022 9:00:00 AM
Lab ID: 2203667-003A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	8900	23	100		µg/L	100	3/18/2022 5:52:58 PM	R86601
Toluene	3300	20	100		µg/L	100	3/18/2022 5:52:58 PM	R86601
Ethylbenzene	1200	21	100		µg/L	100	3/18/2022 5:52:58 PM	R86601
Methyl tert-butyl ether (MTBE)	610	3.9	10		µg/L	10	3/18/2022 6:21:36 PM	R86601
1,2,4-Trimethylbenzene	470	1.2	10		µg/L	10	3/18/2022 6:21:36 PM	R86601
1,3,5-Trimethylbenzene	82	1.8	10		µg/L	10	3/18/2022 6:21:36 PM	R86601
1,2-Dichloroethane (EDC)	ND	2.5	10		µg/L	10	3/18/2022 6:21:36 PM	R86601
Acetone	ND	25	100		µg/L	10	3/18/2022 6:21:36 PM	R86601
Bromomethane	ND	8.5	30		µg/L	10	3/18/2022 6:21:36 PM	R86601
2-Butanone	ND	20	100		µg/L	10	3/18/2022 6:21:36 PM	R86601
Carbon disulfide	ND	5.9	100		µg/L	10	3/18/2022 6:21:36 PM	R86601
Chlorobenzene	ND	1.6	10		µg/L	10	3/18/2022 6:21:36 PM	R86601
Chloroform	5.0	1.3	10	J	µg/L	10	3/18/2022 6:21:36 PM	R86601
Chloromethane	ND	4.1	30		µg/L	10	3/18/2022 6:21:36 PM	R86601
cis-1,2-DCE	ND	3.9	10		µg/L	10	3/18/2022 6:21:36 PM	R86601
1,1-Dichloroethane	7.2	2.7	10	J	µg/L	10	3/18/2022 6:21:36 PM	R86601
1,1-Dichloroethene	ND	2.0	10		µg/L	10	3/18/2022 6:21:36 PM	R86601
Isopropylbenzene	36	1.8	10		µg/L	10	3/18/2022 6:21:36 PM	R86601
4-Isopropyltoluene	ND	2.0	10		µg/L	10	3/18/2022 6:21:36 PM	R86601
Methylene Chloride	ND	5.0	30		µg/L	10	3/18/2022 6:21:36 PM	R86601
n-Butylbenzene	5.3	2.5	30	J	µg/L	10	3/18/2022 6:21:36 PM	R86601
n-Propylbenzene	93	1.8	10		µg/L	10	3/18/2022 6:21:36 PM	R86601
sec-Butylbenzene	1.6	1.4	10	J	µg/L	10	3/18/2022 6:21:36 PM	R86601
Styrene	2.3	1.4	10	J	µg/L	10	3/18/2022 6:21:36 PM	R86601
Tetrachloroethene (PCE)	ND	3.6	10		µg/L	10	3/18/2022 6:21:36 PM	R86601
1,1,1-Trichloroethane	ND	3.0	10		µg/L	10	3/18/2022 6:21:36 PM	R86601
Trichloroethene (TCE)	3.0	2.0	10	J	µg/L	10	3/18/2022 6:21:36 PM	R86601
Vinyl chloride	ND	3.2	10		µg/L	10	3/18/2022 6:21:36 PM	R86601
Xylenes, Total	2900	37	150		µg/L	100	3/18/2022 5:52:58 PM	R86601
Surr: 1,2-Dichloroethane-d4	88.5	0	70-130		%Rec	10	3/18/2022 6:21:36 PM	R86601
Surr: 4-Bromofluorobenzene	96.0	0	70-130		%Rec	10	3/18/2022 6:21:36 PM	R86601
Surr: Dibromofluoromethane	90.7	0	70-130		%Rec	10	3/18/2022 6:21:36 PM	R86601
Surr: Toluene-d8	102	0	70-130		%Rec	10	3/18/2022 6:21:36 PM	R86601
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	43	0.12	0.50		mg/L	10	3/18/2022 6:21:36 PM	R86601
Surr: 4-Bromofluorobenzene	100	0	70-130		%Rec	10	3/18/2022 6:21:36 PM	R86601

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-35
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022 9:00:00 AM
Lab ID: 2203667-003B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.034	0.094	D	µg/L	10	3/17/2022 8:31:53 PM	66232

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-35
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022 9:00:00 AM
Lab ID: 2203667-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	2.0	0.016	0.064		mg/L	1	3/15/2022 3:51:29 PM	66129
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/15/2022 3:51:29 PM	66129
Surr: DNOP	102	0	42.2-138		%Rec	1	3/15/2022 3:51:29 PM	66129
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	1.1	20		µg/L	1	3/17/2022 4:16:03 PM	66142
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/17/2022 4:16:03 PM	66142
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/17/2022 4:16:03 PM	66142
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/17/2022 4:16:03 PM	66142
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/17/2022 4:16:03 PM	66142
Diethyl phthalate	ND	3.9	10		µg/L	1	3/17/2022 4:16:03 PM	66142
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/17/2022 4:16:03 PM	66142
2,4-Dimethylphenol	5.6	0.97	5.0		µg/L	1	3/17/2022 4:16:03 PM	66142
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/17/2022 4:16:03 PM	66142
2-Methylphenol	5.5	0.51	5.0		µg/L	1	3/17/2022 4:16:03 PM	66142
3+4-Methylphenol	6.6	0.45	5.0		µg/L	1	3/17/2022 4:16:03 PM	66142
Phenol	29	0.33	5.0		µg/L	1	3/17/2022 4:16:03 PM	66142
Pyridine	ND	10	10		µg/L	1	3/17/2022 4:16:03 PM	66142
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/17/2022 4:16:03 PM	66142
Surr: 2-Fluorophenol	0	0	29.4-87.7	S	%Rec	1	3/17/2022 4:16:03 PM	66142
Surr: Phenol-d5	35.1	0	28.5-64.7		%Rec	1	3/17/2022 4:16:03 PM	66142
Surr: 2,4,6-Tribromophenol	78.9	0	18.6-129		%Rec	1	3/17/2022 4:16:03 PM	66142
Surr: Nitrobenzene-d5	56.7	0	36.9-103		%Rec	1	3/17/2022 4:16:03 PM	66142
Surr: 2-Fluorobiphenyl	59.2	0	38.1-99.9		%Rec	1	3/17/2022 4:16:03 PM	66142
Surr: 4-Terphenyl-d14	94.6	0	48-155		%Rec	1	3/17/2022 4:16:03 PM	66142
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	1.7	0.048	1.0	E	µg/L	1	3/17/2022 3:14:00 AM	R86533
Naphthalene	96	0.034	0.10	E	µg/L	1	3/17/2022 3:14:00 AM	R86533
1-Methylnaphthalene	9.1	0.024	0.10	E	µg/L	1	3/17/2022 3:14:00 AM	R86533
2-Methylnaphthalene	13	0.034	0.10	E	µg/L	1	3/17/2022 3:14:00 AM	R86533
Acenaphthene	1.6	0.031	0.10	E	µg/L	1	3/17/2022 3:14:00 AM	R86533
Fluorene	0.54	0.031	0.10	E	µg/L	1	3/17/2022 3:14:00 AM	R86533
Phenanthrene	0.16	0.057	0.10	E	µg/L	1	3/17/2022 3:14:00 AM	R86533
Anthracene	0.30	0.034	0.10	E	µg/L	1	3/17/2022 3:14:00 AM	R86533
Fluoranthene	ND	0.10	0.20	E	µg/L	1	3/17/2022 3:14:00 AM	R86533
Pyrene	0.16	0.16	0.20	JE	µg/L	1	3/17/2022 3:14:00 AM	R86533
Benz(a)anthracene	ND	0.036	0.10	E	µg/L	1	3/17/2022 3:14:00 AM	R86533
Chrysene	ND	0.024	0.10	E	µg/L	1	3/17/2022 3:14:00 AM	R86533
Benzo(b)fluoranthene	ND	0.057	0.10	E	µg/L	1	3/17/2022 3:14:00 AM	R86533
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30	E	µg/L	1	3/17/2022 3:14:00 AM	R86533

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Estimated value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-35
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022 9:00:00 AM
Lab ID: 2203667-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	60.3	0	31.6-100	E	%Rec	1	3/17/2022 3:14:00 AM	R86533
Surr: 2-Fluorobiphenyl	56.0	0	26.7-90.1	E	%Rec	1	3/17/2022 3:14:00 AM	R86533
Surr: 4-Terphenyl-d14	88.7	0	72.3-147	E	%Rec	1	3/17/2022 3:14:00 AM	R86533

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-35
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022 9:00:00 AM
Lab ID: 2203667-003D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	5.2	0.016	0.030	*	mg/L	10	4/6/2022 11:55:57 AM	66641
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 11:10:12 AM	66641
Cadmium	ND	0.0015	0.0020		mg/L	1	4/6/2022 11:10:12 AM	66641
Chromium	0.017	0.0021	0.0060		mg/L	1	4/6/2022 11:10:12 AM	66641
Cobalt	0.016	0.0024	0.0060		mg/L	1	4/6/2022 11:10:12 AM	66641
Nickel	0.018	0.0033	0.010		mg/L	1	4/6/2022 11:10:12 AM	66641
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 11:10:12 AM	66641
Vanadium	0.058	0.0024	0.050		mg/L	1	4/6/2022 11:10:12 AM	66641
Zinc	0.039	0.0064	0.010		mg/L	1	4/6/2022 11:10:12 AM	66641
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	3/17/2022 4:14:33 PM	66191
Arsenic	0.0072	0.00063	0.0050		mg/L	5	3/17/2022 4:14:33 PM	66191
Lead	0.022	0.00031	0.0025	*	mg/L	5	3/17/2022 4:14:33 PM	66191
Selenium	0.0045	0.0019	0.0050	J	mg/L	5	3/17/2022 4:14:33 PM	66191
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00045	0.0010		mg/L	5	3/21/2022 5:10:13 PM	66283

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-35
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022 9:00:00 AM
Lab ID: 2203667-003E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	3.6	0.0056	0.010	*	mg/L	5	3/14/2022 9:50:17 AM	A86443
Beryllium	ND	0.00088	0.0020		mg/L	1	3/14/2022 9:48:55 AM	A86443
Cadmium	ND	0.00098	0.0020		mg/L	1	3/14/2022 9:48:55 AM	A86443
Chromium	ND	0.0020	0.0060		mg/L	1	3/14/2022 9:48:55 AM	A86443
Cobalt	ND	0.0024	0.0060		mg/L	1	3/14/2022 9:48:55 AM	A86443
Nickel	ND	0.0033	0.010		mg/L	1	3/14/2022 9:48:55 AM	A86443
Silver	ND	0.0013	0.0050		mg/L	1	3/14/2022 9:48:55 AM	A86443
Vanadium	ND	0.0017	0.050		mg/L	1	3/14/2022 9:48:55 AM	A86443
Zinc	0.0057	0.0032	0.010	J	mg/L	1	3/14/2022 9:48:55 AM	A86443
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	0.00071	0.00044	0.0010	J	mg/L	1	3/15/2022 12:10:43 PM	A86482
Arsenic	0.00058	0.00012	0.0010	J	mg/L	1	3/15/2022 12:10:43 PM	A86482
Lead	0.00021	0.000057	0.00050	J	mg/L	1	3/16/2022 1:44:05 PM	A86537
Selenium	ND	0.00034	0.0010		mg/L	1	3/15/2022 12:10:43 PM	A86482
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/21/2022 2:49:28 PM	66283

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-57
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022 9:30:00 AM
Lab ID: 2203667-004A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	14000	110	500		µg/L	500	3/18/2022 7:47:05 PM	R86601
Toluene	53	10	50		µg/L	50	3/18/2022 8:15:36 PM	R86601
Ethylbenzene	490	11	50		µg/L	50	3/18/2022 8:15:36 PM	R86601
Methyl tert-butyl ether (MTBE)	34	20	50	J	µg/L	50	3/18/2022 8:15:36 PM	R86601
1,2,4-Trimethylbenzene	6.5	6.1	50	J	µg/L	50	3/18/2022 8:15:36 PM	R86601
1,3,5-Trimethylbenzene	ND	9.1	50		µg/L	50	3/18/2022 8:15:36 PM	R86601
1,2-Dichloroethane (EDC)	21	13	50	J	µg/L	50	3/18/2022 8:15:36 PM	R86601
Acetone	ND	130	500		µg/L	50	3/18/2022 8:15:36 PM	R86601
Bromomethane	ND	43	150		µg/L	50	3/18/2022 8:15:36 PM	R86601
2-Butanone	ND	100	500		µg/L	50	3/18/2022 8:15:36 PM	R86601
Carbon disulfide	ND	30	500		µg/L	50	3/18/2022 8:15:36 PM	R86601
Chlorobenzene	ND	7.8	50		µg/L	50	3/18/2022 8:15:36 PM	R86601
Chloroform	9.5	6.7	50	J	µg/L	50	3/18/2022 8:15:36 PM	R86601
Chloromethane	47	21	150	J	µg/L	50	3/18/2022 8:15:36 PM	R86601
cis-1,2-DCE	ND	19	50		µg/L	50	3/18/2022 8:15:36 PM	R86601
1,1-Dichloroethane	ND	14	50		µg/L	50	3/18/2022 8:15:36 PM	R86601
1,1-Dichloroethene	ND	10	50		µg/L	50	3/18/2022 8:15:36 PM	R86601
Isopropylbenzene	11	9.1	50	J	µg/L	50	3/18/2022 8:15:36 PM	R86601
4-Isopropyltoluene	ND	10	50		µg/L	50	3/18/2022 8:15:36 PM	R86601
Methylene Chloride	ND	25	150		µg/L	50	3/18/2022 8:15:36 PM	R86601
n-Butylbenzene	ND	13	150		µg/L	50	3/18/2022 8:15:36 PM	R86601
n-Propylbenzene	31	9.1	50	J	µg/L	50	3/18/2022 8:15:36 PM	R86601
sec-Butylbenzene	ND	7.2	50		µg/L	50	3/18/2022 8:15:36 PM	R86601
Styrene	ND	6.8	50		µg/L	50	3/18/2022 8:15:36 PM	R86601
Tetrachloroethene (PCE)	ND	18	50		µg/L	50	3/18/2022 8:15:36 PM	R86601
1,1,1-Trichloroethane	ND	15	50		µg/L	50	3/18/2022 8:15:36 PM	R86601
Trichloroethene (TCE)	ND	10	50		µg/L	50	3/18/2022 8:15:36 PM	R86601
Vinyl chloride	ND	16	50		µg/L	50	3/18/2022 8:15:36 PM	R86601
Xylenes, Total	130	19	75		µg/L	50	3/18/2022 8:15:36 PM	R86601
Surr: 1,2-Dichloroethane-d4	93.3	0	70-130		%Rec	50	3/18/2022 8:15:36 PM	R86601
Surr: 4-Bromofluorobenzene	106	0	70-130		%Rec	50	3/18/2022 8:15:36 PM	R86601
Surr: Dibromofluoromethane	93.6	0	70-130		%Rec	50	3/18/2022 8:15:36 PM	R86601
Surr: Toluene-d8	99.6	0	70-130		%Rec	50	3/18/2022 8:15:36 PM	R86601
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	27	0.61	2.5		mg/L	50	3/18/2022 8:15:36 PM	R86601
Surr: 4-Bromofluorobenzene	105	0	70-130		%Rec	50	3/18/2022 8:15:36 PM	R86601

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-57
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022 9:30:00 AM
Lab ID: 2203667-004B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.034	0.094	D	µg/L	10	3/17/2022 9:02:03 PM	66232

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-57
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022 9:30:00 AM
Lab ID: 2203667-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	5.4	0.16	0.64		mg/L	10	3/15/2022 4:15:07 PM	66129
Motor Oil Range Organics (MRO)	ND	0.52	0.80	D	mg/L	10	3/15/2022 4:15:07 PM	66129
Surr: DNOP	0	0	42.2-138	S	%Rec	10	3/15/2022 4:15:07 PM	66129
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	1.1	20		µg/L	1	3/17/2022 4:57:42 PM	66142
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/17/2022 4:57:42 PM	66142
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/17/2022 4:57:42 PM	66142
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/17/2022 4:57:42 PM	66142
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/17/2022 4:57:42 PM	66142
Diethyl phthalate	ND	3.9	10		µg/L	1	3/17/2022 4:57:42 PM	66142
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/17/2022 4:57:42 PM	66142
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/17/2022 4:57:42 PM	66142
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/17/2022 4:57:42 PM	66142
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/17/2022 4:57:42 PM	66142
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/17/2022 4:57:42 PM	66142
Phenol	71	0.33	5.0		µg/L	1	3/17/2022 4:57:42 PM	66142
Pyridine	ND	10	10		µg/L	1	3/17/2022 4:57:42 PM	66142
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/17/2022 4:57:42 PM	66142
Surr: 2-Fluorophenol	45.8	0	29.4-87.7		%Rec	1	3/17/2022 4:57:42 PM	66142
Surr: Phenol-d5	36.7	0	28.5-64.7		%Rec	1	3/17/2022 4:57:42 PM	66142
Surr: 2,4,6-Tribromophenol	80.6	0	18.6-129		%Rec	1	3/17/2022 4:57:42 PM	66142
Surr: Nitrobenzene-d5	61.9	0	36.9-103		%Rec	1	3/17/2022 4:57:42 PM	66142
Surr: 2-Fluorobiphenyl	56.7	0	38.1-99.9		%Rec	1	3/17/2022 4:57:42 PM	66142
Surr: 4-Terphenyl-d14	84.6	0	48-155		%Rec	1	3/17/2022 4:57:42 PM	66142
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.048	1.0	E	µg/L	1	3/17/2022 3:58:00 AM	R86533
Naphthalene	170	0.034	0.10	E	µg/L	1	3/17/2022 3:58:00 AM	R86533
1-Methylnaphthalene	82	0.024	0.10	E	µg/L	1	3/17/2022 3:58:00 AM	R86533
2-Methylnaphthalene	59	0.034	0.10	E	µg/L	1	3/17/2022 3:58:00 AM	R86533
Acenaphthene	2.4	0.031	0.10	E	µg/L	1	3/17/2022 3:58:00 AM	R86533
Fluorene	4.1	0.031	0.10	E	µg/L	1	3/17/2022 3:58:00 AM	R86533
Phenanthrene	5.5	0.057	0.10	E	µg/L	1	3/17/2022 3:58:00 AM	R86533
Anthracene	0.20	0.034	0.10	E	µg/L	1	3/17/2022 3:58:00 AM	R86533
Fluoranthene	ND	0.10	0.20	E	µg/L	1	3/17/2022 3:58:00 AM	R86533
Pyrene	0.16	0.16	0.20	JE	µg/L	1	3/17/2022 3:58:00 AM	R86533
Benz(a)anthracene	ND	0.036	0.10	E	µg/L	1	3/17/2022 3:58:00 AM	R86533
Chrysene	ND	0.024	0.10	E	µg/L	1	3/17/2022 3:58:00 AM	R86533
Benzo(b)fluoranthene	ND	0.057	0.10	E	µg/L	1	3/17/2022 3:58:00 AM	R86533
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30	E	µg/L	1	3/17/2022 3:58:00 AM	R86533

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-57
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022 9:30:00 AM
Lab ID: 2203667-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	63.0	0	31.6-100	E	%Rec	1	3/17/2022 3:58:00 AM	R86533
Surr: 2-Fluorobiphenyl	48.0	0	26.7-90.1	E	%Rec	1	3/17/2022 3:58:00 AM	R86533
Surr: 4-Terphenyl-d14	73.3	0	72.3-147	E	%Rec	1	3/17/2022 3:58:00 AM	R86533

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-57
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022 9:30:00 AM
Lab ID: 2203667-004D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	3.4	0.0082	0.015	*	mg/L	5	4/7/2022 11:32:35 AM	66642
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 11:19:16 AM	66642
Cadmium	ND	0.0015	0.0020		mg/L	1	4/6/2022 11:19:16 AM	66642
Chromium	ND	0.0021	0.0060		mg/L	1	4/6/2022 11:19:16 AM	66642
Cobalt	ND	0.0024	0.0060		mg/L	1	4/6/2022 11:19:16 AM	66642
Nickel	0.055	0.0033	0.010		mg/L	1	4/6/2022 11:19:16 AM	66642
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 11:19:16 AM	66642
Vanadium	0.0036	0.0024	0.050	J	mg/L	1	4/6/2022 11:19:16 AM	66642
Zinc	ND	0.0064	0.010		mg/L	1	4/6/2022 11:19:16 AM	66642
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/17/2022 4:16:59 PM	66191
Arsenic	0.0031	0.00013	0.0010		mg/L	1	3/17/2022 4:16:59 PM	66191
Lead	0.00049	0.000061	0.00050	J	mg/L	1	3/17/2022 4:16:59 PM	66191
Selenium	0.00059	0.00037	0.0010	J	mg/L	1	3/17/2022 4:16:59 PM	66191
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/21/2022 2:51:36 PM	66283

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-57
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022 9:30:00 AM
Lab ID: 2203667-004E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	3.3	0.0056	0.010	*	mg/L	5	3/14/2022 9:58:06 AM	A86443
Beryllium	ND	0.00088	0.0020		mg/L	1	3/14/2022 9:56:40 AM	A86443
Cadmium	ND	0.00098	0.0020		mg/L	1	3/14/2022 9:56:40 AM	A86443
Chromium	ND	0.0020	0.0060		mg/L	1	3/14/2022 9:56:40 AM	A86443
Cobalt	ND	0.0024	0.0060		mg/L	1	3/14/2022 9:56:40 AM	A86443
Nickel	0.057	0.0033	0.010		mg/L	1	3/14/2022 9:56:40 AM	A86443
Silver	ND	0.0013	0.0050		mg/L	1	3/14/2022 9:56:40 AM	A86443
Vanadium	0.0023	0.0017	0.050	J	mg/L	1	3/14/2022 9:56:40 AM	A86443
Zinc	0.0080	0.0032	0.010	J	mg/L	1	3/14/2022 9:56:40 AM	A86443
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/15/2022 12:13:25 PM	A86482
Arsenic	0.0023	0.00012	0.0010		mg/L	1	3/15/2022 12:13:25 PM	A86482
Lead	ND	0.000057	0.00050		mg/L	1	3/16/2022 1:46:46 PM	A86537
Selenium	ND	0.00034	0.0010		mg/L	1	3/15/2022 12:13:25 PM	A86482
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/21/2022 2:53:44 PM	66283

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022 10:00:00 AM
Lab ID: 2203667-005A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	26000	110	500		µg/L	500	3/18/2022 8:44:12 PM	R86601
Toluene	61	10	50		µg/L	50	3/18/2022 9:12:42 PM	R86601
Ethylbenzene	1200	11	50		µg/L	50	3/18/2022 9:12:42 PM	R86601
Methyl tert-butyl ether (MTBE)	1000	20	50		µg/L	50	3/18/2022 9:12:42 PM	R86601
1,2,4-Trimethylbenzene	12	6.1	50	J	µg/L	50	3/18/2022 9:12:42 PM	R86601
1,3,5-Trimethylbenzene	ND	9.1	50		µg/L	50	3/18/2022 9:12:42 PM	R86601
1,2-Dichloroethane (EDC)	21	13	50	J	µg/L	50	3/18/2022 9:12:42 PM	R86601
Acetone	ND	130	500		µg/L	50	3/18/2022 9:12:42 PM	R86601
Bromomethane	ND	43	150		µg/L	50	3/18/2022 9:12:42 PM	R86601
2-Butanone	ND	100	500		µg/L	50	3/18/2022 9:12:42 PM	R86601
Carbon disulfide	ND	30	500		µg/L	50	3/18/2022 9:12:42 PM	R86601
Chlorobenzene	ND	7.8	50		µg/L	50	3/18/2022 9:12:42 PM	R86601
Chloroform	9.2	6.7	50	J	µg/L	50	3/18/2022 9:12:42 PM	R86601
Chloromethane	47	21	150	J	µg/L	50	3/18/2022 9:12:42 PM	R86601
cis-1,2-DCE	ND	19	50		µg/L	50	3/18/2022 9:12:42 PM	R86601
1,1-Dichloroethane	ND	14	50		µg/L	50	3/18/2022 9:12:42 PM	R86601
1,1-Dichloroethene	ND	10	50		µg/L	50	3/18/2022 9:12:42 PM	R86601
Isopropylbenzene	35	9.1	50	J	µg/L	50	3/18/2022 9:12:42 PM	R86601
4-Isopropyltoluene	ND	10	50		µg/L	50	3/18/2022 9:12:42 PM	R86601
Methylene Chloride	ND	25	150		µg/L	50	3/18/2022 9:12:42 PM	R86601
n-Butylbenzene	ND	13	150		µg/L	50	3/18/2022 9:12:42 PM	R86601
n-Propylbenzene	110	9.1	50		µg/L	50	3/18/2022 9:12:42 PM	R86601
sec-Butylbenzene	ND	7.2	50		µg/L	50	3/18/2022 9:12:42 PM	R86601
Styrene	ND	6.8	50		µg/L	50	3/18/2022 9:12:42 PM	R86601
Tetrachloroethene (PCE)	ND	18	50		µg/L	50	3/18/2022 9:12:42 PM	R86601
1,1,1-Trichloroethane	ND	15	50		µg/L	50	3/18/2022 9:12:42 PM	R86601
Trichloroethene (TCE)	ND	10	50		µg/L	50	3/18/2022 9:12:42 PM	R86601
Vinyl chloride	ND	16	50		µg/L	50	3/18/2022 9:12:42 PM	R86601
Xylenes, Total	160	19	75		µg/L	50	3/18/2022 9:12:42 PM	R86601
Surr: 1,2-Dichloroethane-d4	87.3	0	70-130		%Rec	50	3/18/2022 9:12:42 PM	R86601
Surr: 4-Bromofluorobenzene	105	0	70-130		%Rec	50	3/18/2022 9:12:42 PM	R86601
Surr: Dibromofluoromethane	88.4	0	70-130		%Rec	50	3/18/2022 9:12:42 PM	R86601
Surr: Toluene-d8	103	0	70-130		%Rec	50	3/18/2022 9:12:42 PM	R86601
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	58	0.61	2.5		mg/L	50	3/18/2022 9:12:42 PM	R86601
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	50	3/18/2022 9:12:42 PM	R86601

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022 10:00:00 AM
Lab ID: 2203667-005B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.035	0.095	D	µg/L	10	3/17/2022 9:32:12 PM	66232

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022 10:00:00 AM
Lab ID: 2203667-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	6.5	0.16	0.64		mg/L	10	3/21/2022 3:04:56 PM	66219
Motor Oil Range Organics (MRO)	ND	0.52	0.80	D	mg/L	10	3/21/2022 3:04:56 PM	66219
Surr: DNOP	0	0	42.2-138	S	%Rec	10	3/21/2022 3:04:56 PM	66219
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	1.1	20		µg/L	1	3/17/2022 5:39:24 PM	66142
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/17/2022 5:39:24 PM	66142
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/17/2022 5:39:24 PM	66142
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/17/2022 5:39:24 PM	66142
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/17/2022 5:39:24 PM	66142
Diethyl phthalate	ND	3.9	10		µg/L	1	3/17/2022 5:39:24 PM	66142
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/17/2022 5:39:24 PM	66142
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/17/2022 5:39:24 PM	66142
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/17/2022 5:39:24 PM	66142
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/17/2022 5:39:24 PM	66142
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/17/2022 5:39:24 PM	66142
Phenol	61	0.33	5.0		µg/L	1	3/17/2022 5:39:24 PM	66142
Pyridine	ND	10	10		µg/L	1	3/17/2022 5:39:24 PM	66142
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/17/2022 5:39:24 PM	66142
Surr: 2-Fluorophenol	45.6	0	29.4-87.7		%Rec	1	3/17/2022 5:39:24 PM	66142
Surr: Phenol-d5	39.3	0	28.5-64.7		%Rec	1	3/17/2022 5:39:24 PM	66142
Surr: 2,4,6-Tribromophenol	69.3	0	18.6-129		%Rec	1	3/17/2022 5:39:24 PM	66142
Surr: Nitrobenzene-d5	64.2	0	36.9-103		%Rec	1	3/17/2022 5:39:24 PM	66142
Surr: 2-Fluorobiphenyl	56.6	0	38.1-99.9		%Rec	1	3/17/2022 5:39:24 PM	66142
Surr: 4-Terphenyl-d14	84.6	0	48-155		%Rec	1	3/17/2022 5:39:24 PM	66142
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	1.3	0.048	1.0	E	µg/L	1	3/17/2022 4:42:00 AM	R86533
Naphthalene	ND	0.034	0.10	E	µg/L	1	3/17/2022 4:42:00 AM	R86533
1-Methylnaphthalene	74	0.024	0.10	E	µg/L	1	3/17/2022 4:42:00 AM	R86533
2-Methylnaphthalene	83	0.034	0.10	E	µg/L	1	3/17/2022 4:42:00 AM	R86533
Acenaphthene	2.2	0.031	0.10	E	µg/L	1	3/17/2022 4:42:00 AM	R86533
Fluorene	3.0	0.031	0.10	E	µg/L	1	3/17/2022 4:42:00 AM	R86533
Phenanthrene	2.6	0.057	0.10	E	µg/L	1	3/17/2022 4:42:00 AM	R86533
Anthracene	0.30	0.034	0.10	E	µg/L	1	3/17/2022 4:42:00 AM	R86533
Fluoranthene	0.18	0.10	0.20	JE	µg/L	1	3/17/2022 4:42:00 AM	R86533
Pyrene	0.18	0.16	0.20	JE	µg/L	1	3/17/2022 4:42:00 AM	R86533
Benz(a)anthracene	ND	0.036	0.10	E	µg/L	1	3/17/2022 4:42:00 AM	R86533
Chrysene	ND	0.024	0.10	E	µg/L	1	3/17/2022 4:42:00 AM	R86533
Benzo(b)fluoranthene	ND	0.057	0.10	E	µg/L	1	3/17/2022 4:42:00 AM	R86533
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30	E	µg/L	1	3/17/2022 4:42:00 AM	R86533

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Estimated value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022 10:00:00 AM
Lab ID: 2203667-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	73.4	0	31.6-100	E	%Rec	1	3/17/2022 4:42:00 AM	R86533
Surr: 2-Fluorobiphenyl	47.5	0	26.7-90.1	E	%Rec	1	3/17/2022 4:42:00 AM	R86533
Surr: 4-Terphenyl-d14	77.6	0	72.3-147	E	%Rec	1	3/17/2022 4:42:00 AM	R86533

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022 10:00:00 AM
Lab ID: 2203667-005D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	5.2	0.016	0.030	*	mg/L	10	4/7/2022 11:43:51 AM	66642
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 11:27:47 AM	66642
Cadmium	ND	0.0015	0.0020		mg/L	1	4/6/2022 11:27:47 AM	66642
Chromium	ND	0.0021	0.0060		mg/L	1	4/6/2022 11:27:47 AM	66642
Cobalt	ND	0.0024	0.0060		mg/L	1	4/6/2022 11:27:47 AM	66642
Nickel	0.051	0.0033	0.010		mg/L	1	4/6/2022 11:27:47 AM	66642
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 11:27:47 AM	66642
Vanadium	0.0049	0.0024	0.050	J	mg/L	1	4/6/2022 11:27:47 AM	66642
Zinc	ND	0.0064	0.010		mg/L	1	4/6/2022 11:27:47 AM	66642
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/17/2022 4:19:26 PM	66191
Arsenic	0.0038	0.00013	0.0010		mg/L	1	3/17/2022 4:19:26 PM	66191
Lead	0.00049	0.000061	0.00050	J	mg/L	1	3/17/2022 4:19:26 PM	66191
Selenium	0.00045	0.00037	0.0010	J	mg/L	1	3/17/2022 4:19:26 PM	66191
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/21/2022 2:55:53 PM	66283

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022 10:00:00 AM
Lab ID: 2203667-005E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	5.1	0.011	0.020	*	mg/L	10	4/19/2022 12:00:47 PM	A87332
Beryllium	ND	0.00088	0.0020		mg/L	1	3/14/2022 9:59:32 AM	A86443
Cadmium	ND	0.00098	0.0020		mg/L	1	3/14/2022 9:59:32 AM	A86443
Chromium	ND	0.0020	0.0060		mg/L	1	3/14/2022 9:59:32 AM	A86443
Cobalt	ND	0.0024	0.0060		mg/L	1	3/14/2022 9:59:32 AM	A86443
Nickel	0.051	0.0033	0.010		mg/L	1	3/14/2022 9:59:32 AM	A86443
Silver	ND	0.0013	0.0050		mg/L	1	3/14/2022 9:59:32 AM	A86443
Vanadium	0.0031	0.0017	0.050	J	mg/L	1	3/14/2022 9:59:32 AM	A86443
Zinc	0.0091	0.0032	0.010	J	mg/L	1	3/14/2022 9:59:32 AM	A86443
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/15/2022 12:16:06 PM	A86482
Arsenic	0.0032	0.00012	0.0010		mg/L	1	3/15/2022 12:16:06 PM	A86482
Lead	ND	0.000057	0.00050		mg/L	1	3/16/2022 1:49:28 PM	A86537
Selenium	ND	0.00034	0.0010		mg/L	1	3/15/2022 12:16:06 PM	A86482
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/21/2022 2:58:02 PM	66283

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58A
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022 10:30:00 AM
Lab ID: 2203667-006A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	6300	45	200		µg/L	200	3/18/2022 9:41:17 PM	R86601
Toluene	140	4.0	20		µg/L	20	3/18/2022 10:09:49 PM	R86601
Ethylbenzene	570	4.3	20		µg/L	20	3/18/2022 10:09:49 PM	R86601
Methyl tert-butyl ether (MTBE)	2300	7.9	20		µg/L	20	3/18/2022 10:09:49 PM	R86601
1,2,4-Trimethylbenzene	290	2.4	20		µg/L	20	3/18/2022 10:09:49 PM	R86601
1,3,5-Trimethylbenzene	56	3.6	20		µg/L	20	3/18/2022 10:09:49 PM	R86601
1,2-Dichloroethane (EDC)	8.9	5.1	20	J	µg/L	20	3/18/2022 10:09:49 PM	R86601
Acetone	ND	50	200		µg/L	20	3/18/2022 10:09:49 PM	R86601
Bromomethane	ND	17	60		µg/L	20	3/18/2022 10:09:49 PM	R86601
2-Butanone	ND	41	200		µg/L	20	3/18/2022 10:09:49 PM	R86601
Carbon disulfide	ND	12	200		µg/L	20	3/18/2022 10:09:49 PM	R86601
Chlorobenzene	ND	3.1	20		µg/L	20	3/18/2022 10:09:49 PM	R86601
Chloroform	ND	2.7	20		µg/L	20	3/18/2022 10:09:49 PM	R86601
Chloromethane	24	8.2	60	J	µg/L	20	3/18/2022 10:09:49 PM	R86601
cis-1,2-DCE	ND	7.8	20		µg/L	20	3/18/2022 10:09:49 PM	R86601
1,1-Dichloroethane	11	5.5	20	J	µg/L	20	3/18/2022 10:09:49 PM	R86601
1,1-Dichloroethene	ND	4.0	20		µg/L	20	3/18/2022 10:09:49 PM	R86601
Isopropylbenzene	36	3.7	20		µg/L	20	3/18/2022 10:09:49 PM	R86601
4-Isopropyltoluene	4.7	4.0	20	J	µg/L	20	3/18/2022 10:09:49 PM	R86601
Methylene Chloride	ND	10	60		µg/L	20	3/18/2022 10:09:49 PM	R86601
n-Butylbenzene	11	5.1	60	J	µg/L	20	3/18/2022 10:09:49 PM	R86601
n-Propylbenzene	87	3.6	20		µg/L	20	3/18/2022 10:09:49 PM	R86601
sec-Butylbenzene	3.3	2.9	20	J	µg/L	20	3/18/2022 10:09:49 PM	R86601
Styrene	ND	2.7	20		µg/L	20	3/18/2022 10:09:49 PM	R86601
Tetrachloroethene (PCE)	ND	7.1	20		µg/L	20	3/18/2022 10:09:49 PM	R86601
1,1,1-Trichloroethane	ND	6.0	20		µg/L	20	3/18/2022 10:09:49 PM	R86601
Trichloroethene (TCE)	ND	4.1	20		µg/L	20	3/18/2022 10:09:49 PM	R86601
Vinyl chloride	ND	6.4	20		µg/L	20	3/18/2022 10:09:49 PM	R86601
Xylenes, Total	670	7.4	30		µg/L	20	3/18/2022 10:09:49 PM	R86601
Surr: 1,2-Dichloroethane-d4	93.2	0	70-130		%Rec	20	3/18/2022 10:09:49 PM	R86601
Surr: 4-Bromofluorobenzene	95.4	0	70-130		%Rec	20	3/18/2022 10:09:49 PM	R86601
Surr: Dibromofluoromethane	91.0	0	70-130		%Rec	20	3/18/2022 10:09:49 PM	R86601
Surr: Toluene-d8	102	0	70-130		%Rec	20	3/18/2022 10:09:49 PM	R86601
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	24	0.24	1.0		mg/L	20	3/18/2022 10:09:49 PM	R86601
Surr: 4-Bromofluorobenzene	97.8	0	70-130		%Rec	20	3/18/2022 10:09:49 PM	R86601

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58A
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022 10:30:00 AM
Lab ID: 2203667-006B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	3/15/2022 10:24:26 PM	66149

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58A
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022 10:30:00 AM
Lab ID: 2203667-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	4.2	0.16	0.64		mg/L	10	3/21/2022 3:28:43 PM	66219
Motor Oil Range Organics (MRO)	ND	0.52	0.80	D	mg/L	10	3/21/2022 3:28:43 PM	66219
Surr: DNOP	0	0	42.2-138	S	%Rec	10	3/21/2022 3:28:43 PM	66219
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	1.1	20		µg/L	1	3/17/2022 6:20:55 PM	66142
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/17/2022 6:20:55 PM	66142
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/17/2022 6:20:55 PM	66142
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/17/2022 6:20:55 PM	66142
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/17/2022 6:20:55 PM	66142
Diethyl phthalate	ND	3.9	10		µg/L	1	3/17/2022 6:20:55 PM	66142
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/17/2022 6:20:55 PM	66142
2,4-Dimethylphenol	8.9	0.97	5.0		µg/L	1	3/17/2022 6:20:55 PM	66142
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/17/2022 6:20:55 PM	66142
2-Methylphenol	8.9	0.51	5.0		µg/L	1	3/17/2022 6:20:55 PM	66142
3+4-Methylphenol	4.6	0.45	5.0	J	µg/L	1	3/17/2022 6:20:55 PM	66142
Phenol	17	0.33	5.0		µg/L	1	3/17/2022 6:20:55 PM	66142
Pyridine	ND	10	10		µg/L	1	3/17/2022 6:20:55 PM	66142
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/17/2022 6:20:55 PM	66142
Surr: 2-Fluorophenol	44.0	0	29.4-87.7		%Rec	1	3/17/2022 6:20:55 PM	66142
Surr: Phenol-d5	35.5	0	28.5-64.7		%Rec	1	3/17/2022 6:20:55 PM	66142
Surr: 2,4,6-Tribromophenol	84.8	0	18.6-129		%Rec	1	3/17/2022 6:20:55 PM	66142
Surr: Nitrobenzene-d5	60.0	0	36.9-103		%Rec	1	3/17/2022 6:20:55 PM	66142
Surr: 2-Fluorobiphenyl	53.6	0	38.1-99.9		%Rec	1	3/17/2022 6:20:55 PM	66142
Surr: 4-Terphenyl-d14	93.7	0	48-155		%Rec	1	3/17/2022 6:20:55 PM	66142
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	1.9	0.048	1.0	E	µg/L	1	3/17/2022 5:26:00 AM	R86533
Naphthalene	ND	0.034	0.10	E	µg/L	1	3/17/2022 5:26:00 AM	R86533
1-Methylnaphthalene	91	0.024	0.10	E	µg/L	1	3/17/2022 5:26:00 AM	R86533
2-Methylnaphthalene	89	0.034	0.10	E	µg/L	1	3/17/2022 5:26:00 AM	R86533
Acenaphthene	ND	0.031	0.10	E	µg/L	1	3/17/2022 5:26:00 AM	R86533
Fluorene	4.7	0.031	0.10	E	µg/L	1	3/17/2022 5:26:00 AM	R86533
Phenanthrene	4.6	0.057	0.10	E	µg/L	1	3/17/2022 5:26:00 AM	R86533
Anthracene	0.42	0.034	0.10	E	µg/L	1	3/17/2022 5:26:00 AM	R86533
Fluoranthene	0.26	0.10	0.20	E	µg/L	1	3/17/2022 5:26:00 AM	R86533
Pyrene	0.28	0.16	0.20	E	µg/L	1	3/17/2022 5:26:00 AM	R86533
Benz(a)anthracene	ND	0.036	0.10	E	µg/L	1	3/17/2022 5:26:00 AM	R86533
Chrysene	ND	0.024	0.10	E	µg/L	1	3/17/2022 5:26:00 AM	R86533
Benzo(b)fluoranthene	ND	0.057	0.10	E	µg/L	1	3/17/2022 5:26:00 AM	R86533
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/17/2022 5:26:00 AM	R86533

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Estimated value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58A
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022 10:30:00 AM
Lab ID: 2203667-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	63.2	0	31.6-100	E	%Rec	1	3/17/2022 5:26:00 AM	R86533
Surr: 2-Fluorobiphenyl	50.7	0	26.7-90.1	E	%Rec	1	3/17/2022 5:26:00 AM	R86533
Surr: 4-Terphenyl-d14	77.9	0	72.3-147	E	%Rec	1	3/17/2022 5:26:00 AM	R86533

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58A
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022 10:30:00 AM
Lab ID: 2203667-006D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.90	0.0016	0.0030		mg/L	1	4/6/2022 11:39:41 AM	66642
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 11:39:41 AM	66642
Cadmium	ND	0.0015	0.0020		mg/L	1	4/6/2022 11:39:41 AM	66642
Chromium	ND	0.0021	0.0060		mg/L	1	4/6/2022 11:39:41 AM	66642
Cobalt	0.0027	0.0024	0.0060	J	mg/L	1	4/6/2022 11:39:41 AM	66642
Nickel	0.034	0.0033	0.010		mg/L	1	4/6/2022 11:39:41 AM	66642
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 11:39:41 AM	66642
Vanadium	ND	0.0024	0.050		mg/L	1	4/6/2022 11:39:41 AM	66642
Zinc	ND	0.0064	0.010		mg/L	1	4/6/2022 11:39:41 AM	66642
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/17/2022 4:21:52 PM	66191
Arsenic	0.0043	0.00013	0.0010		mg/L	1	3/17/2022 4:21:52 PM	66191
Lead	0.0014	0.000061	0.00050		mg/L	1	3/17/2022 4:21:52 PM	66191
Selenium	0.00044	0.00037	0.0010	J	mg/L	1	3/17/2022 4:21:52 PM	66191
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/21/2022 3:00:12 PM	66283

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58A
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022 10:30:00 AM
Lab ID: 2203667-006E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.94	0.0011	0.0020		mg/L	1	3/14/2022 10:02:20 AM	A86443
Beryllium	ND	0.00088	0.0020		mg/L	1	3/14/2022 10:02:20 AM	A86443
Cadmium	ND	0.00098	0.0020		mg/L	1	3/14/2022 10:02:20 AM	A86443
Chromium	ND	0.0020	0.0060		mg/L	1	3/14/2022 10:02:20 AM	A86443
Cobalt	ND	0.0024	0.0060		mg/L	1	3/14/2022 10:02:20 AM	A86443
Nickel	0.037	0.0033	0.010		mg/L	1	3/14/2022 10:02:20 AM	A86443
Silver	ND	0.0013	0.0050		mg/L	1	3/14/2022 10:02:20 AM	A86443
Vanadium	ND	0.0017	0.050		mg/L	1	3/14/2022 10:02:20 AM	A86443
Zinc	0.015	0.0032	0.010		mg/L	1	3/14/2022 10:02:20 AM	A86443
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/15/2022 12:18:47 PM	A86482
Arsenic	0.0037	0.00012	0.0010		mg/L	1	3/15/2022 12:18:47 PM	A86482
Lead	0.00077	0.000057	0.00050		mg/L	1	3/16/2022 1:52:09 PM	A86537
Selenium	ND	0.00034	0.0010		mg/L	1	3/15/2022 12:18:47 PM	A86482
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/21/2022 3:02:20 PM	66283

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-63
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022 9:30:00 AM
Lab ID: 2203667-007A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	8400	110	500		µg/L	500	3/18/2022 10:38:20 PM	R86601
Toluene	53	10	50		µg/L	50	3/18/2022 11:06:47 PM	R86601
Ethylbenzene	1300	11	50		µg/L	50	3/18/2022 11:06:47 PM	R86601
Methyl tert-butyl ether (MTBE)	21	20	50	J	µg/L	50	3/18/2022 11:06:47 PM	R86601
1,2,4-Trimethylbenzene	ND	6.1	50		µg/L	50	3/18/2022 11:06:47 PM	R86601
1,3,5-Trimethylbenzene	ND	9.1	50		µg/L	50	3/18/2022 11:06:47 PM	R86601
1,2-Dichloroethane (EDC)	21	13	50	J	µg/L	50	3/18/2022 11:06:47 PM	R86601
Acetone	ND	130	500		µg/L	50	3/18/2022 11:06:47 PM	R86601
Bromomethane	ND	43	150		µg/L	50	3/18/2022 11:06:47 PM	R86601
2-Butanone	ND	100	500		µg/L	50	3/18/2022 11:06:47 PM	R86601
Carbon disulfide	ND	30	500		µg/L	50	3/18/2022 11:06:47 PM	R86601
Chlorobenzene	ND	7.8	50		µg/L	50	3/18/2022 11:06:47 PM	R86601
Chloroform	17	6.7	50	J	µg/L	50	3/18/2022 11:06:47 PM	R86601
Chloromethane	60	21	150	J	µg/L	50	3/18/2022 11:06:47 PM	R86601
cis-1,2-DCE	ND	19	50		µg/L	50	3/18/2022 11:06:47 PM	R86601
1,1-Dichloroethane	31	14	50	J	µg/L	50	3/18/2022 11:06:47 PM	R86601
1,1-Dichloroethene	ND	10	50		µg/L	50	3/18/2022 11:06:47 PM	R86601
Isopropylbenzene	64	9.1	50		µg/L	50	3/18/2022 11:06:47 PM	R86601
4-Isopropyltoluene	ND	10	50		µg/L	50	3/18/2022 11:06:47 PM	R86601
Methylene Chloride	ND	25	150		µg/L	50	3/18/2022 11:06:47 PM	R86601
n-Butylbenzene	20	13	150	J	µg/L	50	3/18/2022 11:06:47 PM	R86601
n-Propylbenzene	180	9.1	50		µg/L	50	3/18/2022 11:06:47 PM	R86601
sec-Butylbenzene	9.4	7.2	50	J	µg/L	50	3/18/2022 11:06:47 PM	R86601
Styrene	ND	6.8	50		µg/L	50	3/18/2022 11:06:47 PM	R86601
Tetrachloroethene (PCE)	ND	18	50		µg/L	50	3/18/2022 11:06:47 PM	R86601
1,1,1-Trichloroethane	ND	15	50		µg/L	50	3/18/2022 11:06:47 PM	R86601
Trichloroethene (TCE)	ND	10	50		µg/L	50	3/18/2022 11:06:47 PM	R86601
Vinyl chloride	ND	16	50		µg/L	50	3/18/2022 11:06:47 PM	R86601
Xylenes, Total	150	19	75		µg/L	50	3/18/2022 11:06:47 PM	R86601
Surr: 1,2-Dichloroethane-d4	93.7	0	70-130		%Rec	50	3/18/2022 11:06:47 PM	R86601
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	50	3/18/2022 11:06:47 PM	R86601
Surr: Dibromofluoromethane	93.0	0	70-130		%Rec	50	3/18/2022 11:06:47 PM	R86601
Surr: Toluene-d8	102	0	70-130		%Rec	50	3/18/2022 11:06:47 PM	R86601
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	28	0.61	2.5		mg/L	50	3/18/2022 11:06:47 PM	R86601
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	50	3/18/2022 11:06:47 PM	R86601

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-63
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022 9:30:00 AM
Lab ID: 2203667-007B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0093		µg/L	1	3/15/2022 10:39:32 PM	66149

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-63
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022 9:30:00 AM
Lab ID: 2203667-007C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	3.3	0.016	0.064		mg/L	1	3/18/2022 8:26:36 PM	66219
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/18/2022 8:26:36 PM	66219
Surr: DNOP	104	0	42.2-138		%Rec	1	3/18/2022 8:26:36 PM	66219
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	1.1	20		µg/L	1	3/17/2022 7:02:29 PM	66142
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/17/2022 7:02:29 PM	66142
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/17/2022 7:02:29 PM	66142
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/17/2022 7:02:29 PM	66142
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/17/2022 7:02:29 PM	66142
Diethyl phthalate	ND	3.9	10		µg/L	1	3/17/2022 7:02:29 PM	66142
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/17/2022 7:02:29 PM	66142
2,4-Dimethylphenol	5.4	0.97	5.0		µg/L	1	3/17/2022 7:02:29 PM	66142
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/17/2022 7:02:29 PM	66142
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/17/2022 7:02:29 PM	66142
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/17/2022 7:02:29 PM	66142
Phenol	24	0.33	5.0		µg/L	1	3/17/2022 7:02:29 PM	66142
Pyridine	ND	10	10		µg/L	1	3/17/2022 7:02:29 PM	66142
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/17/2022 7:02:29 PM	66142
Surr: 2-Fluorophenol	44.4	0	29.4-87.7		%Rec	1	3/17/2022 7:02:29 PM	66142
Surr: Phenol-d5	35.9	0	28.5-64.7		%Rec	1	3/17/2022 7:02:29 PM	66142
Surr: 2,4,6-Tribromophenol	80.0	0	18.6-129		%Rec	1	3/17/2022 7:02:29 PM	66142
Surr: Nitrobenzene-d5	58.6	0	36.9-103		%Rec	1	3/17/2022 7:02:29 PM	66142
Surr: 2-Fluorobiphenyl	58.8	0	38.1-99.9		%Rec	1	3/17/2022 7:02:29 PM	66142
Surr: 4-Terphenyl-d14	84.3	0	48-155		%Rec	1	3/17/2022 7:02:29 PM	66142
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.048	1.0	E	µg/L	1	3/17/2022 6:10:00 AM	R86533
Naphthalene	ND	0.034	0.10	E	µg/L	1	3/17/2022 6:10:00 AM	R86533
1-Methylnaphthalene	65	0.024	0.10	E	µg/L	1	3/17/2022 6:10:00 AM	R86533
2-Methylnaphthalene	94	0.034	0.10	E	µg/L	1	3/17/2022 6:10:00 AM	R86533
Acenaphthene	0.76	0.031	0.10	E	µg/L	1	3/17/2022 6:10:00 AM	R86533
Fluorene	1.4	0.031	0.10	E	µg/L	1	3/17/2022 6:10:00 AM	R86533
Phenanthrene	1.0	0.057	0.10	E	µg/L	1	3/17/2022 6:10:00 AM	R86533
Anthracene	0.20	0.034	0.10	E	µg/L	1	3/17/2022 6:10:00 AM	R86533
Fluoranthene	ND	0.10	0.20	E	µg/L	1	3/17/2022 6:10:00 AM	R86533
Pyrene	0.24	0.16	0.20	E	µg/L	1	3/17/2022 6:10:00 AM	R86533
Benz(a)anthracene	ND	0.036	0.10	E	µg/L	1	3/17/2022 6:10:00 AM	R86533
Chrysene	ND	0.024	0.10	E	µg/L	1	3/17/2022 6:10:00 AM	R86533
Benzo(b)fluoranthene	ND	0.057	0.10	E	µg/L	1	3/17/2022 6:10:00 AM	R86533
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30	E	µg/L	1	3/17/2022 6:10:00 AM	R86533

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Estimated value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-63
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022 9:30:00 AM
Lab ID: 2203667-007C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	69.2	0	31.6-100	E	%Rec	1	3/17/2022 6:10:00 AM	R86533
Surr: 2-Fluorobiphenyl	60.9	0	26.7-90.1	E	%Rec	1	3/17/2022 6:10:00 AM	R86533
Surr: 4-Terphenyl-d14	86.9	0	72.3-147	E	%Rec	1	3/17/2022 6:10:00 AM	R86533

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-63
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022 9:30:00 AM
Lab ID: 2203667-007D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	4.3	0.0082	0.015	*	mg/L	5	4/6/2022 11:43:22 AM	66642
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 11:42:07 AM	66642
Cadmium	ND	0.0015	0.0020		mg/L	1	4/6/2022 11:42:07 AM	66642
Chromium	ND	0.0021	0.0060		mg/L	1	4/6/2022 11:42:07 AM	66642
Cobalt	ND	0.0024	0.0060		mg/L	1	4/6/2022 11:42:07 AM	66642
Nickel	0.025	0.0033	0.010		mg/L	1	4/6/2022 11:42:07 AM	66642
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 11:42:07 AM	66642
Vanadium	0.0026	0.0024	0.050	J	mg/L	1	4/6/2022 11:42:07 AM	66642
Zinc	ND	0.0064	0.010		mg/L	1	4/6/2022 11:42:07 AM	66642
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/17/2022 4:24:19 PM	66191
Arsenic	0.0082	0.00013	0.0010		mg/L	1	3/17/2022 4:24:19 PM	66191
Lead	0.000081	0.000061	0.00050	J	mg/L	1	3/17/2022 4:24:19 PM	66191
Selenium	ND	0.00037	0.0010		mg/L	1	3/17/2022 4:24:19 PM	66191
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/21/2022 3:04:28 PM	66283

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-63
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022 9:30:00 AM
Lab ID: 2203667-007E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	4.6	0.0056	0.010	*	mg/L	5	3/14/2022 10:06:37 AM	A86443
Beryllium	ND	0.00088	0.0020		mg/L	1	3/14/2022 10:05:11 AM	A86443
Cadmium	ND	0.00098	0.0020		mg/L	1	3/14/2022 10:05:11 AM	A86443
Chromium	ND	0.0020	0.0060		mg/L	1	3/14/2022 10:05:11 AM	A86443
Cobalt	ND	0.0024	0.0060		mg/L	1	3/14/2022 10:05:11 AM	A86443
Nickel	0.027	0.0033	0.010		mg/L	1	3/14/2022 10:05:11 AM	A86443
Silver	ND	0.0013	0.0050		mg/L	1	3/14/2022 10:05:11 AM	A86443
Vanadium	0.0027	0.0017	0.050	J	mg/L	1	3/14/2022 10:05:11 AM	A86443
Zinc	0.015	0.0032	0.010		mg/L	1	3/14/2022 10:05:11 AM	A86443
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/15/2022 12:21:29 PM	A86482
Arsenic	0.0075	0.00012	0.0010		mg/L	1	3/15/2022 12:21:29 PM	A86482
Lead	ND	0.000057	0.00050		mg/L	1	3/16/2022 1:57:32 PM	A86537
Selenium	ND	0.00034	0.0010		mg/L	1	3/15/2022 12:21:29 PM	A86482
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/21/2022 3:06:36 PM	66283

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3-10-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022
Lab ID: 2203667-008A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	0.39	0.23	1.0	J	µg/L	1	3/21/2022 12:51:52 PM	R86626
Toluene	ND	0.20	1.0		µg/L	1	3/21/2022 12:51:52 PM	R86626
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/21/2022 12:51:52 PM	R86626
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/21/2022 12:51:52 PM	R86626
1,2,4-Trimethylbenzene	1.1	0.12	1.0		µg/L	1	3/21/2022 12:51:52 PM	R86626
1,3,5-Trimethylbenzene	0.21	0.18	1.0	J	µg/L	1	3/21/2022 12:51:52 PM	R86626
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	3/21/2022 12:51:52 PM	R86626
Acetone	ND	2.5	10		µg/L	1	3/21/2022 12:51:52 PM	R86626
Bromomethane	ND	0.85	3.0		µg/L	1	3/21/2022 12:51:52 PM	R86626
2-Butanone	ND	2.0	10		µg/L	1	3/21/2022 12:51:52 PM	R86626
Carbon disulfide	ND	0.59	10		µg/L	1	3/21/2022 12:51:52 PM	R86626
Chlorobenzene	0.38	0.16	1.0	J	µg/L	1	3/21/2022 12:51:52 PM	R86626
Chloroform	ND	0.13	1.0		µg/L	1	3/21/2022 12:51:52 PM	R86626
Chloromethane	0.67	0.41	3.0	J	µg/L	1	3/21/2022 12:51:52 PM	R86626
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/21/2022 12:51:52 PM	R86626
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/21/2022 12:51:52 PM	R86626
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/21/2022 12:51:52 PM	R86626
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/21/2022 12:51:52 PM	R86626
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/21/2022 12:51:52 PM	R86626
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/21/2022 12:51:52 PM	R86626
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/21/2022 12:51:52 PM	R86626
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/21/2022 12:51:52 PM	R86626
sec-Butylbenzene	0.37	0.14	1.0	J	µg/L	1	3/21/2022 12:51:52 PM	R86626
Styrene	ND	0.14	1.0		µg/L	1	3/21/2022 12:51:52 PM	R86626
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/21/2022 12:51:52 PM	R86626
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/21/2022 12:51:52 PM	R86626
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/21/2022 12:51:52 PM	R86626
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/21/2022 12:51:52 PM	R86626
Xylenes, Total	1.8	0.37	1.5		µg/L	1	3/21/2022 12:51:52 PM	R86626
Surr: 1,2-Dichloroethane-d4	88.5	0	70-130		%Rec	1	3/21/2022 12:51:52 PM	R86626
Surr: 4-Bromofluorobenzene	95.9	0	70-130		%Rec	1	3/21/2022 12:51:52 PM	R86626
Surr: Dibromofluoromethane	93.9	0	70-130		%Rec	1	3/21/2022 12:51:52 PM	R86626
Surr: Toluene-d8	101	0	70-130		%Rec	1	3/21/2022 12:51:52 PM	R86626
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.066	0.012	0.050		mg/L	1	3/21/2022 12:51:52 PM	G86626
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	3/21/2022 12:51:52 PM	G86626

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3-10-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022
Lab ID: 2203667-008B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0035	0.0095		µg/L	1	3/15/2022 10:54:41 PM	66149

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3-10-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022
Lab ID: 2203667-008C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.046	0.016	0.064	J	mg/L	1	3/18/2022 8:50:11 PM	66219
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/18/2022 8:50:11 PM	66219
Surr: DNOP	103	0	42.2-138		%Rec	1	3/18/2022 8:50:11 PM	66219
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	1.1	20		µg/L	1	3/17/2022 7:43:46 PM	66142
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/17/2022 7:43:46 PM	66142
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/17/2022 7:43:46 PM	66142
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/17/2022 7:43:46 PM	66142
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/17/2022 7:43:46 PM	66142
Diethyl phthalate	ND	3.9	10		µg/L	1	3/17/2022 7:43:46 PM	66142
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/17/2022 7:43:46 PM	66142
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/17/2022 7:43:46 PM	66142
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/17/2022 7:43:46 PM	66142
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/17/2022 7:43:46 PM	66142
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/17/2022 7:43:46 PM	66142
Phenol	ND	0.33	5.0		µg/L	1	3/17/2022 7:43:46 PM	66142
Pyridine	ND	10	10		µg/L	1	3/17/2022 7:43:46 PM	66142
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/17/2022 7:43:46 PM	66142
Surr: 2-Fluorophenol	42.3	0	29.4-87.7		%Rec	1	3/17/2022 7:43:46 PM	66142
Surr: Phenol-d5	33.8	0	28.5-64.7		%Rec	1	3/17/2022 7:43:46 PM	66142
Surr: 2,4,6-Tribromophenol	55.3	0	18.6-129		%Rec	1	3/17/2022 7:43:46 PM	66142
Surr: Nitrobenzene-d5	55.3	0	36.9-103		%Rec	1	3/17/2022 7:43:46 PM	66142
Surr: 2-Fluorobiphenyl	53.7	0	38.1-99.9		%Rec	1	3/17/2022 7:43:46 PM	66142
Surr: 4-Terphenyl-d14	86.1	0	48-155		%Rec	1	3/17/2022 7:43:46 PM	66142
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	1.5	0.048	1.0	E	µg/L	1	3/17/2022 6:55:00 AM	R86533
Naphthalene	0.34	0.034	0.10	E	µg/L	1	3/17/2022 6:55:00 AM	R86533
1-Methylnaphthalene	ND	0.024	0.10	E	µg/L	1	3/17/2022 6:55:00 AM	R86533
2-Methylnaphthalene	ND	0.034	0.10	E	µg/L	1	3/17/2022 6:55:00 AM	R86533
Acenaphthene	ND	0.031	0.10	E	µg/L	1	3/17/2022 6:55:00 AM	R86533
Fluorene	ND	0.031	0.10	E	µg/L	1	3/17/2022 6:55:00 AM	R86533
Phenanthrene	ND	0.057	0.10	E	µg/L	1	3/17/2022 6:55:00 AM	R86533
Anthracene	ND	0.034	0.10	E	µg/L	1	3/17/2022 6:55:00 AM	R86533
Fluoranthene	ND	0.10	0.20	E	µg/L	1	3/17/2022 6:55:00 AM	R86533
Pyrene	ND	0.16	0.20	E	µg/L	1	3/17/2022 6:55:00 AM	R86533
Benz(a)anthracene	ND	0.036	0.10	E	µg/L	1	3/17/2022 6:55:00 AM	R86533
Chrysene	ND	0.024	0.10	E	µg/L	1	3/17/2022 6:55:00 AM	R86533
Benzo(b)fluoranthene	ND	0.057	0.10	E	µg/L	1	3/17/2022 6:55:00 AM	R86533
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30	E	µg/L	1	3/17/2022 6:55:00 AM	R86533

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Estimated value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3-10-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022
Lab ID: 2203667-008C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	62.4	0	31.6-100	E	%Rec	1	3/17/2022 6:55:00 AM	R86533
Surr: 2-Fluorobiphenyl	58.6	0	26.7-90.1	E	%Rec	1	3/17/2022 6:55:00 AM	R86533
Surr: 4-Terphenyl-d14	95.1	0	72.3-147	E	%Rec	1	3/17/2022 6:55:00 AM	R86533

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3-10-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022
Lab ID: 2203667-008D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.069	0.0016	0.0030		mg/L	1	4/6/2022 11:44:49 AM	66642
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 11:44:49 AM	66642
Cadmium	ND	0.0015	0.0020		mg/L	1	4/6/2022 11:44:49 AM	66642
Chromium	ND	0.0021	0.0060		mg/L	1	4/6/2022 11:44:49 AM	66642
Cobalt	0.0032	0.0024	0.0060	J	mg/L	1	4/6/2022 11:44:49 AM	66642
Nickel	ND	0.0033	0.010		mg/L	1	4/6/2022 11:44:49 AM	66642
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 11:44:49 AM	66642
Vanadium	0.0049	0.0024	0.050	J	mg/L	1	4/6/2022 11:44:49 AM	66642
Zinc	ND	0.0064	0.010		mg/L	1	4/6/2022 11:44:49 AM	66642
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/17/2022 4:26:45 PM	66191
Arsenic	0.0012	0.00013	0.0010		mg/L	1	3/17/2022 4:26:45 PM	66191
Lead	0.0010	0.000061	0.00050		mg/L	1	3/17/2022 4:26:45 PM	66191
Selenium	ND	0.00037	0.0010		mg/L	1	3/17/2022 4:26:45 PM	66191
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00045	0.0010		mg/L	5	3/21/2022 5:12:22 PM	66283

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3-10-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022
Lab ID: 2203667-008E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.032	0.0011	0.0020		mg/L	1	3/14/2022 10:08:01 AM	A86443
Beryllium	ND	0.00088	0.0020		mg/L	1	3/14/2022 10:08:01 AM	A86443
Cadmium	ND	0.00098	0.0020		mg/L	1	3/14/2022 10:08:01 AM	A86443
Chromium	ND	0.0020	0.0060		mg/L	1	3/14/2022 10:08:01 AM	A86443
Cobalt	ND	0.0024	0.0060		mg/L	1	3/14/2022 10:08:01 AM	A86443
Nickel	ND	0.0033	0.010		mg/L	1	3/14/2022 10:08:01 AM	A86443
Silver	ND	0.0013	0.0050		mg/L	1	3/14/2022 10:08:01 AM	A86443
Vanadium	ND	0.0017	0.050		mg/L	1	3/14/2022 10:08:01 AM	A86443
Zinc	0.0081	0.0032	0.010	J	mg/L	1	3/14/2022 10:08:01 AM	A86443
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/15/2022 12:24:10 PM	A86482
Arsenic	0.00096	0.00012	0.0010	J	mg/L	1	3/15/2022 12:24:10 PM	A86482
Lead	ND	0.000057	0.00050		mg/L	1	3/16/2022 2:02:55 PM	A86537
Selenium	ND	0.00034	0.0010		mg/L	1	3/15/2022 12:24:10 PM	A86482
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/21/2022 4:16:32 PM	66283

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB 3-10-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022 10:30:00 AM
Lab ID: 2203667-009A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	0.37	0.23	1.0	J	µg/L	1	3/19/2022 12:03:52 AM	R86601
Toluene	ND	0.20	1.0		µg/L	1	3/19/2022 12:03:52 AM	R86601
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/19/2022 12:03:52 AM	R86601
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/19/2022 12:03:52 AM	R86601
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/19/2022 12:03:52 AM	R86601
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/19/2022 12:03:52 AM	R86601
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	3/19/2022 12:03:52 AM	R86601
Acetone	4.5	2.5	10	J	µg/L	1	3/19/2022 12:03:52 AM	R86601
Bromomethane	ND	0.85	3.0		µg/L	1	3/19/2022 12:03:52 AM	R86601
2-Butanone	ND	2.0	10		µg/L	1	3/19/2022 12:03:52 AM	R86601
Carbon disulfide	ND	0.59	10		µg/L	1	3/19/2022 12:03:52 AM	R86601
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/19/2022 12:03:52 AM	R86601
Chloroform	ND	0.13	1.0		µg/L	1	3/19/2022 12:03:52 AM	R86601
Chloromethane	ND	0.41	3.0		µg/L	1	3/19/2022 12:03:52 AM	R86601
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/19/2022 12:03:52 AM	R86601
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/19/2022 12:03:52 AM	R86601
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/19/2022 12:03:52 AM	R86601
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/19/2022 12:03:52 AM	R86601
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/19/2022 12:03:52 AM	R86601
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/19/2022 12:03:52 AM	R86601
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/19/2022 12:03:52 AM	R86601
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/19/2022 12:03:52 AM	R86601
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/19/2022 12:03:52 AM	R86601
Styrene	ND	0.14	1.0		µg/L	1	3/19/2022 12:03:52 AM	R86601
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/19/2022 12:03:52 AM	R86601
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/19/2022 12:03:52 AM	R86601
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/19/2022 12:03:52 AM	R86601
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/19/2022 12:03:52 AM	R86601
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/19/2022 12:03:52 AM	R86601
Surr: 1,2-Dichloroethane-d4	88.1	0	70-130		%Rec	1	3/19/2022 12:03:52 AM	R86601
Surr: 4-Bromofluorobenzene	99.8	0	70-130		%Rec	1	3/19/2022 12:03:52 AM	R86601
Surr: Dibromofluoromethane	92.6	0	70-130		%Rec	1	3/19/2022 12:03:52 AM	R86601
Surr: Toluene-d8	103	0	70-130		%Rec	1	3/19/2022 12:03:52 AM	R86601
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.040	0.012	0.050	J	mg/L	1	3/19/2022 12:03:52 AM	R86601
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	3/19/2022 12:03:52 AM	R86601

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 1st Qtr
Collection Date:
Lab ID: 2203667-011A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	0.29	0.23	1.0	J	µg/L	1	3/19/2022 12:32:22 AM	R86601
Toluene	ND	0.20	1.0		µg/L	1	3/19/2022 12:32:22 AM	R86601
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/19/2022 12:32:22 AM	R86601
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/19/2022 12:32:22 AM	R86601
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/19/2022 12:32:22 AM	R86601
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/19/2022 12:32:22 AM	R86601
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	3/19/2022 12:32:22 AM	R86601
Acetone	ND	2.5	10		µg/L	1	3/19/2022 12:32:22 AM	R86601
Bromomethane	ND	0.85	3.0		µg/L	1	3/19/2022 12:32:22 AM	R86601
2-Butanone	ND	2.0	10		µg/L	1	3/19/2022 12:32:22 AM	R86601
Carbon disulfide	ND	0.59	10		µg/L	1	3/19/2022 12:32:22 AM	R86601
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/19/2022 12:32:22 AM	R86601
Chloroform	ND	0.13	1.0		µg/L	1	3/19/2022 12:32:22 AM	R86601
Chloromethane	0.69	0.41	3.0	J	µg/L	1	3/19/2022 12:32:22 AM	R86601
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/19/2022 12:32:22 AM	R86601
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/19/2022 12:32:22 AM	R86601
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/19/2022 12:32:22 AM	R86601
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/19/2022 12:32:22 AM	R86601
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/19/2022 12:32:22 AM	R86601
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/19/2022 12:32:22 AM	R86601
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/19/2022 12:32:22 AM	R86601
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/19/2022 12:32:22 AM	R86601
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/19/2022 12:32:22 AM	R86601
Styrene	ND	0.14	1.0		µg/L	1	3/19/2022 12:32:22 AM	R86601
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/19/2022 12:32:22 AM	R86601
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/19/2022 12:32:22 AM	R86601
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/19/2022 12:32:22 AM	R86601
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/19/2022 12:32:22 AM	R86601
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/19/2022 12:32:22 AM	R86601
Surr: 1,2-Dichloroethane-d4	88.6	0	70-130		%Rec	1	3/19/2022 12:32:22 AM	R86601
Surr: 4-Bromofluorobenzene	98.4	0	70-130		%Rec	1	3/19/2022 12:32:22 AM	R86601
Surr: Dibromofluoromethane	89.7	0	70-130		%Rec	1	3/19/2022 12:32:22 AM	R86601
Surr: Toluene-d8	97.3	0	70-130		%Rec	1	3/19/2022 12:32:22 AM	R86601
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.034	0.012	0.050	J	mg/L	1	3/19/2022 12:32:22 AM	R86601
Surr: 4-Bromofluorobenzene	99.1	0	70-130		%Rec	1	3/19/2022 12:32:22 AM	R86601

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203667**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 1st Qtr
Collection Date:
Lab ID: 2203667-011B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0035	0.0095		µg/L	1	3/15/2022 11:09:46 PM	66149

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

ANALYTICAL REPORT

March 23, 2022

Hall Environmental Analysis Laboratory

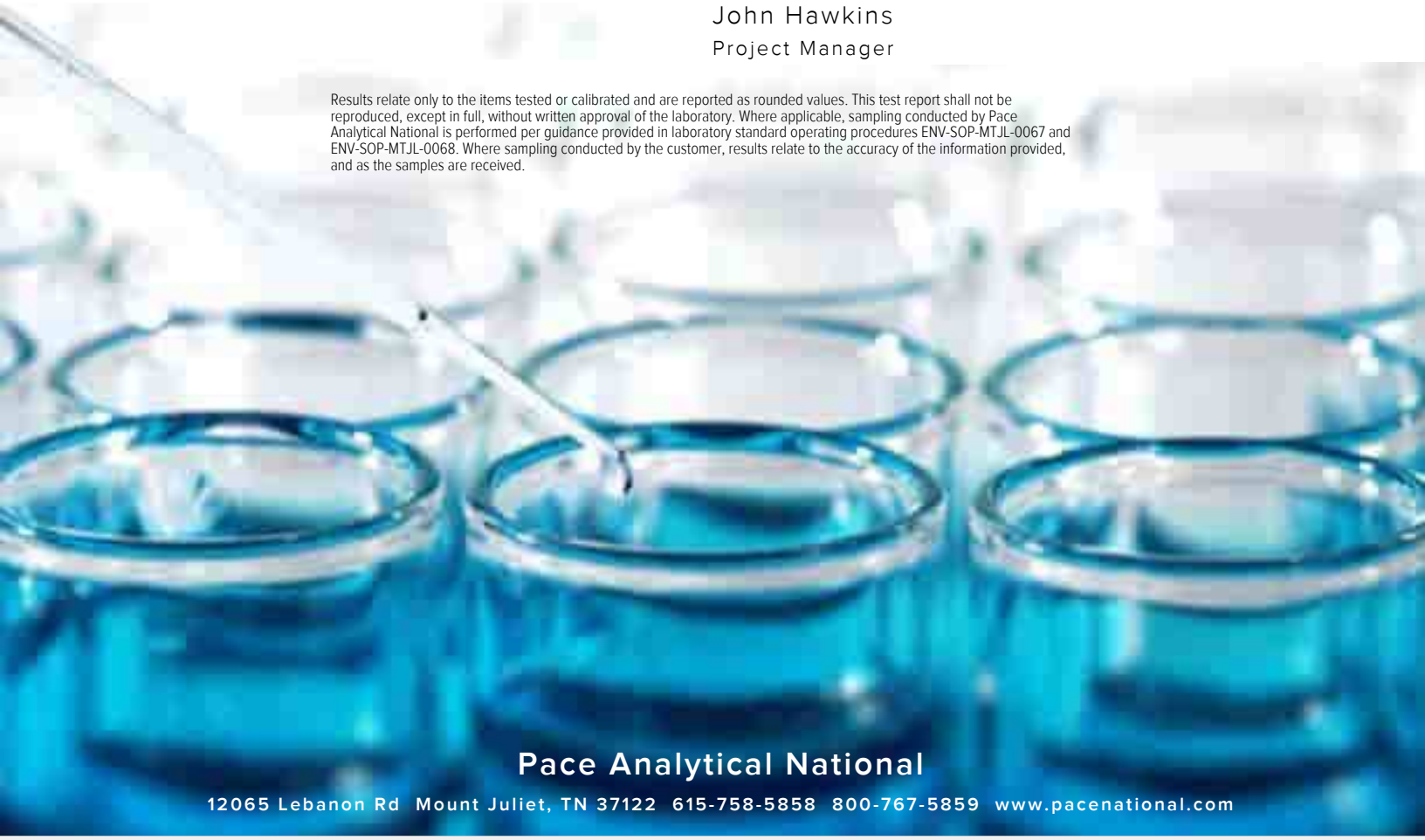
Sample Delivery Group:	L1471288
Samples Received:	03/15/2022
Project Number:	
Description:	

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By:

John Hawkins
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 4

Sr: Sample Results 5

2203667-001F EB 3-10-22 L1471288-01 5

2203667-002F MKTF-46 L1471288-02 6

2203667-003F MKTF-35 L1471288-03 7

2203667-004F OW-57 L1471288-04 8

2203667-005F OW-58 L1471288-05 9

2203667-006F OW-58A L1471288-06 10

2203667-007F OW-63 L1471288-07 11

2203667-008F DUP 3-10-22 L1471288-08 12

Qc: Quality Control Summary 13

Wet Chemistry by Method 4500CN E-2016 13

Gl: Glossary of Terms 14

Al: Accreditations & Locations 15

Sc: Sample Chain of Custody 16

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

2203667-001F EB 3-10-22 L1471288-01 WW

Collected by	Collected date/time	Received date/time
	03/10/22 08:00	03/15/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1834196	1	03/17/22 19:19	03/22/22 13:45	LDT	Mt. Juliet, TN

2203667-002F MKTF-46 L1471288-02 WW

Collected by	Collected date/time	Received date/time
	03/10/22 08:00	03/15/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1834196	1	03/17/22 19:19	03/22/22 13:51	LDT	Mt. Juliet, TN

2203667-003F MKTF-35 L1471288-03 WW

Collected by	Collected date/time	Received date/time
	03/10/22 09:00	03/15/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1834196	1	03/17/22 19:19	03/22/22 13:52	LDT	Mt. Juliet, TN

2203667-004F OW-57 L1471288-04 WW

Collected by	Collected date/time	Received date/time
	03/10/22 09:30	03/15/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1834196	1	03/17/22 19:19	03/22/22 13:54	LDT	Mt. Juliet, TN

2203667-005F OW-58 L1471288-05 WW

Collected by	Collected date/time	Received date/time
	03/10/22 10:00	03/15/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1834196	1	03/17/22 19:19	03/22/22 13:55	LDT	Mt. Juliet, TN

2203667-006F OW-58A L1471288-06 WW

Collected by	Collected date/time	Received date/time
	03/10/22 10:30	03/15/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1834196	1	03/17/22 19:19	03/22/22 13:56	LDT	Mt. Juliet, TN

2203667-007F OW-63 L1471288-07 WW

Collected by	Collected date/time	Received date/time
	03/10/22 09:30	03/15/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1834196	1	03/17/22 19:19	03/22/22 13:57	LDT	Mt. Juliet, TN

2203667-008F DUP 3-10-22 L1471288-08 WW

Collected by	Collected date/time	Received date/time
	03/10/22 00:00	03/15/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1834196	1	03/17/22 19:19	03/22/22 14:00	LDT	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Received by OCD: 4/21/2023 9:21:57 AM

220367-001 EB 3-10-22
Collected date/time: 03/10/22 08:00

SAMPLE RESULTS - 01

L1471288

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	03/22/2022 13:45	WG1834196

Released to Imaging: 4/21/2023 9:40:26 AM

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	03/22/2022 13:51	WG1834196

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	03/22/2022 13:52	WG1834196

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	03/22/2022 13:54	WG1834196

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.00515		0.00500	1	03/22/2022 13:55	WG1834196

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.00527		0.00500	1	03/22/2022 13:56	WG1834196

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.00773	J3 J6	0.00500	1	03/22/2022 13:57	WG1834196

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	03/22/2022 14:00	WG1834196

Method Blank (MB)

(MB) R3772642-1 03/22/22 13:26

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1471012-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1471012-02 03/22/22 13:35 • (DUP) R3772642-3 03/22/22 13:38

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

L1471288-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1471288-03 03/22/22 13:52 • (DUP) R3772642-6 03/22/22 13:53

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3772642-2 03/22/22 13:27

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.0997	99.7	87.1-120	

L1471288-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1471288-01 03/22/22 13:45 • (MS) R3772642-4 03/22/22 13:46 • (MSD) R3772642-5 03/22/22 13:48

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0937	0.102	93.7	102	1	90.0-110			8.48	20

L1471288-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1471288-07 03/22/22 13:57 • (MS) R3772642-7 03/22/22 13:58 • (MSD) R3772642-8 03/22/22 13:59

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	0.00773	0.0819	0.109	74.2	101	1	90.0-110	J6	J3	28.4	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

B157

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: clients.hallenvironmental.com

SUB CONTRATOR: Pace TN	COMPANY: PACE TN	PHONE: (800) 767-5859	FAX: (615) 758-5859
ADDRESS: 12065 Lebanon Rd		ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: Mt. Juliet, TN 37122			

L1471288

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS	
1	2203667-001F	EB 3-10-22	500AMBHDP F-NAOH	Groundwater	3/10/2022 8:00:00 AM	1	Total Cyanide	-01
2	2203667-002F	MKTF-46	500AMBHDP F-NAOH	Groundwater	3/10/2022 8:00:00 AM	1	Total Cyanide	-02
3	2203667-003F	MKTF-35	500AMBHDP F-NAOH	Groundwater	3/10/2022 9:00:00 AM	1	Total Cyanide	-03
4	2203667-004F	OW-57	500AMBHDP F-NAOH	Groundwater	3/10/2022 9:30:00 AM	1	Total Cyanide	-04
5	2203667-005F	OW-58	500AMBHDP F-NAOH	Groundwater	3/10/2022 10:00:00 AM	1	Total Cyanide	-05
6	2203667-006F	OW-58A	500AMBHDP F-NAOH	Groundwater	3/10/2022 10:30:00 AM	1	Total Cyanide	-06
7	2203667-007F	OW-63	500AMBHDP F-NAOH	Groundwater	3/10/2022 9:30:00 AM	1	Total Cyanide	-07
8	2203667-008F	DUP 3-10-22	500AMBHDP F-NAOH	Groundwater	3/10/2022	1	Total Cyanide	-08

Sample Receipt Checklist

COC Seal Present/Intact:	Y N	If Applicable	
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	Y N	Pres.Correct/Check:	Y N
Correct bottles used:	Y N		
Sufficient volume sent:	Y N	1.7+0=1.7	
RAD Screen <0.5 mR/hr:	Y N		

cnt=8 TB=0

5528 5947 9308

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By: TDB	Date: 3/11/2022	Time: 11:07 AM	Received By: T. Robertson	Date: 3/15/22	Time: 930
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard [X] RUSH Next BD [ ] 2nd BD [ ] 3rd BD [ ]

REPORT TRANSMITTAL DESIRED:
[ ] HARDCOPY (extra cost) [ ] FAX [ ] EMAIL [ ] ONLINE

FOR LAB USE ONLY

Temp of samples _____ °C Attempt to Cool ? _____

Comments: _____

April 05, 2022

Vista Work Order No. 2203119

Mr. Andy Freeman
Hall Environmental Analytical Laboratory
4901 Hawkins NE
Albuquerque, NM 87109

Dear Mr. Freeman,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on March 15, 2022 under your Project Name '2203667'.

Vista Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at jfox@vista-analytical.com.

Thank you for choosing Vista as part of your analytical support team.

Sincerely,

Jamie Fox
Laboratory Director

Vista Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAP for those applicable test methods. Results relate only to the samples as received by the laboratory. This report should not be reproduced except in full without the written approval of Vista.

Vista Work Order No. 2203119
Case Narrative

Sample Condition on Receipt:

Two groundwater samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology. The samples were received in good condition and within the recommended temperature requirements.

Analytical Notes:

PFAS Isotope Dilution Method

Sample "OW-63" contained particulate and was centrifuged prior to extraction.

The samples were extracted and analyzed for a selected list of PFAS using Vista's PFAS Isotope Dilution Method. The results for PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Results for all other analytes include the linear isomers only.

Holding Times

The samples were extracted and analyzed within the hold times.

Quality Control

The Initial Calibration and Continuing Calibration Verifications met the acceptance criteria.

A Method Blank and Ongoing Precision and Recovery (OPR) sample were extracted and analyzed with the preparation batch. No analytes were detected in the Method Blank above the Reporting Limit. The OPR recoveries were within the method acceptance criteria.

The labeled standard recoveries for all QC and field samples were within the acceptance criteria.

QC Anomalies

LabNumber	SampleName	Analysis	Analyte	Flag	%Rec
2203119-01	OW-63	PFAS Isotope Dilution Method	13C3-PFBA	H	19.5

H = Recovery was outside laboratory acceptance criteria.

TABLE OF CONTENTS

Case Narrative..... 1

Table of Contents..... 3

Sample Inventory..... 4

Analytical Results..... 5

Qualifiers..... 14

Certifications..... 15

Sample Receipt..... 18

Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
2203119-01	OW-63	10-Mar-22 09:30	15-Mar-22 09:50	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2203119-02	PFAS-FB	10-Mar-22 09:30	15-Mar-22 09:50	HDPE Bottle, 250 mL

ANALYTICAL RESULTS

Vista
an Eurofins Analytical Laboratory

Sample ID: Method Blank — **PFAS Isotope Dilution Method**

Client Data

Name: Hall Environmental Analytical Laboratory
Project: 2203667
Matrix: Aqueous

Laboratory Data

Lab Sample: B22C148-BLK1
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	2.00		B22C148	29-Mar-22	0.250 L	01-Apr-22 01:14	1
PFPeA	2706-90-3	ND	2.00		B22C148	29-Mar-22	0.250 L	01-Apr-22 01:14	1
PFBS	375-73-5	ND	2.00		B22C148	29-Mar-22	0.250 L	01-Apr-22 01:14	1
4:2 FTS	757124-72-4	ND	2.00		B22C148	29-Mar-22	0.250 L	01-Apr-22 01:14	1
PFHxA	307-24-4	ND	2.00		B22C148	29-Mar-22	0.250 L	01-Apr-22 01:14	1
PFPeS	2706-91-4	ND	2.00		B22C148	29-Mar-22	0.250 L	01-Apr-22 01:14	1
PFHpA	375-85-9	ND	2.00		B22C148	29-Mar-22	0.250 L	01-Apr-22 01:14	1
PFHxS	355-46-4	ND	2.00		B22C148	29-Mar-22	0.250 L	01-Apr-22 01:14	1
6:2 FTS	27619-97-2	ND	2.00		B22C148	29-Mar-22	0.250 L	01-Apr-22 01:14	1
PFOA	335-67-1	ND	2.00		B22C148	29-Mar-22	0.250 L	01-Apr-22 01:14	1
PFHpS	375-92-8	ND	2.00		B22C148	29-Mar-22	0.250 L	01-Apr-22 01:14	1
PFNA	375-95-1	ND	2.00		B22C148	29-Mar-22	0.250 L	01-Apr-22 01:14	1
PFOSA	754-91-6	ND	2.00		B22C148	29-Mar-22	0.250 L	01-Apr-22 01:14	1
PFOS	1763-23-1	ND	2.00		B22C148	29-Mar-22	0.250 L	01-Apr-22 01:14	1
PFDA	335-76-2	ND	2.00		B22C148	29-Mar-22	0.250 L	01-Apr-22 01:14	1
8:2 FTS	39108-34-4	ND	2.00		B22C148	29-Mar-22	0.250 L	01-Apr-22 01:14	1
PFNS	68259-12-1	ND	2.00		B22C148	29-Mar-22	0.250 L	01-Apr-22 01:14	1
MeFOSAA	2355-31-9	ND	2.00		B22C148	29-Mar-22	0.250 L	01-Apr-22 01:14	1
EtFOSAA	2991-50-6	ND	2.00		B22C148	29-Mar-22	0.250 L	01-Apr-22 01:14	1
PFUnA	2058-94-8	ND	2.00		B22C148	29-Mar-22	0.250 L	01-Apr-22 01:14	1
PFDS	335-77-3	ND	2.00		B22C148	29-Mar-22	0.250 L	01-Apr-22 01:14	1
PFDoA	307-55-1	ND	2.00		B22C148	29-Mar-22	0.250 L	01-Apr-22 01:14	1
PFTrDA	72629-94-8	ND	2.00		B22C148	29-Mar-22	0.250 L	01-Apr-22 01:14	1
PFTeDA	376-06-7	ND	2.00		B22C148	29-Mar-22	0.250 L	01-Apr-22 01:14	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	78.3	25 - 150		B22C148	29-Mar-22	0.250 L	01-Apr-22 01:14	1
13C3-PFPeA	IS	80.8	25 - 150		B22C148	29-Mar-22	0.250 L	01-Apr-22 01:14	1
13C3-PFBS	IS	92.0	25 - 150		B22C148	29-Mar-22	0.250 L	01-Apr-22 01:14	1
13C2-4:2 FTS	IS	77.5	25 - 150		B22C148	29-Mar-22	0.250 L	01-Apr-22 01:14	1
13C2-PFHxA	IS	81.9	25 - 150		B22C148	29-Mar-22	0.250 L	01-Apr-22 01:14	1
13C4-PFHpA	IS	84.4	25 - 150		B22C148	29-Mar-22	0.250 L	01-Apr-22 01:14	1
13C3-PFHxS	IS	88.4	25 - 150		B22C148	29-Mar-22	0.250 L	01-Apr-22 01:14	1
13C2-6:2 FTS	IS	83.5	25 - 150		B22C148	29-Mar-22	0.250 L	01-Apr-22 01:14	1
13C5-PFNA	IS	80.4	25 - 150		B22C148	29-Mar-22	0.250 L	01-Apr-22 01:14	1
13C8-PFOSA	IS	57.6	10 - 150		B22C148	29-Mar-22	0.250 L	01-Apr-22 01:14	1
13C2-PFOA	IS	85.7	25 - 150		B22C148	29-Mar-22	0.250 L	01-Apr-22 01:14	1
13C8-PFOS	IS	85.3	25 - 150		B22C148	29-Mar-22	0.250 L	01-Apr-22 01:14	1
13C2-PFDA	IS	83.6	25 - 150		B22C148	29-Mar-22	0.250 L	01-Apr-22 01:14	1

Sample ID: Method Blank — **PFAS Isotope Dilution Method**

Client Data

Name: Hall Environmental Analytical Laboratory
Project: 2203667
Matrix: Aqueous

Laboratory Data

Lab Sample: B22C148-BLK1
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-8:2 FTS	IS	87.1	25 - 150		B22C148	29-Mar-22	0.250 L	01-Apr-22 01:14	1
d3-MeFOSAA	IS	72.8	25 - 150		B22C148	29-Mar-22	0.250 L	01-Apr-22 01:14	1
13C2-PFUnA	IS	76.1	25 - 150		B22C148	29-Mar-22	0.250 L	01-Apr-22 01:14	1
d5-EtFOSAA	IS	66.7	25 - 150		B22C148	29-Mar-22	0.250 L	01-Apr-22 01:14	1
13C2-PFDoA	IS	63.4	25 - 150		B22C148	29-Mar-22	0.250 L	01-Apr-22 01:14	1
13C2-PFTeDA	IS	64.9	20 - 150		B22C148	29-Mar-22	0.250 L	01-Apr-22 01:14	1

RL - Reporting limit

Results reported to RL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

Sample ID: OPR **PFAS Isotope Dilution Method**

Client Data

Name: Hall Environmental Analytical Laboratory
Project: 2203667
Matrix: Aqueous

Laboratory Data

Lab Sample: B22C148-BS1
Column: BEH C18

Analyte	CAS Number	Amt Found (ng/L)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	42.0	40.0	105	65 - 135		B22C148	29-Mar-22	0.250 L	01-Apr-22 18:10	1
PFPeA	2706-90-3	40.0	40.0	100	65 - 135		B22C148	29-Mar-22	0.250 L	01-Apr-22 18:10	1
PFBS	375-73-5	45.0	40.0	112	65 - 135		B22C148	29-Mar-22	0.250 L	01-Apr-22 18:10	1
4:2 FTS	757124-72-4	36.9	40.0	92.4	60 - 145		B22C148	29-Mar-22	0.250 L	01-Apr-22 18:10	1
PFHxA	307-24-4	38.7	40.0	96.8	65 - 135		B22C148	29-Mar-22	0.250 L	01-Apr-22 18:10	1
PFPeS	2706-91-4	45.2	40.0	113	65 - 135		B22C148	29-Mar-22	0.250 L	01-Apr-22 18:10	1
PFHpA	375-85-9	40.2	40.0	101	65 - 135		B22C148	29-Mar-22	0.250 L	01-Apr-22 18:10	1
PFHxS	355-46-4	40.9	40.0	102	65 - 135		B22C148	29-Mar-22	0.250 L	01-Apr-22 18:10	1
6:2 FTS	27619-97-2	38.6	40.0	96.5	60 - 140		B22C148	29-Mar-22	0.250 L	01-Apr-22 18:10	1
PFOA	335-67-1	39.1	40.0	97.7	65 - 135		B22C148	29-Mar-22	0.250 L	01-Apr-22 18:10	1
PFHpS	375-92-8	42.6	40.0	107	65 - 135		B22C148	29-Mar-22	0.250 L	01-Apr-22 18:10	1
PFNA	375-95-1	43.3	40.0	108	65 - 135		B22C148	29-Mar-22	0.250 L	01-Apr-22 18:10	1
PFOSA	754-91-6	35.6	40.0	88.9	65 - 140		B22C148	29-Mar-22	0.250 L	01-Apr-22 18:10	1
PFOS	1763-23-1	38.6	40.0	96.4	65 - 140		B22C148	29-Mar-22	0.250 L	01-Apr-22 18:10	1
PFDA	335-76-2	40.8	40.0	102	65 - 135		B22C148	29-Mar-22	0.250 L	01-Apr-22 18:10	1
8:2 FTS	39108-34-4	42.9	40.0	107	65 - 135		B22C148	29-Mar-22	0.250 L	01-Apr-22 18:10	1
PFNS	68259-12-1	37.7	40.0	94.3	65 - 135		B22C148	29-Mar-22	0.250 L	01-Apr-22 18:10	1
MeFOSAA	2355-31-9	37.0	40.0	92.6	65 - 135		B22C148	29-Mar-22	0.250 L	01-Apr-22 18:10	1
EtFOSAA	2991-50-6	41.7	40.0	104	65 - 135		B22C148	29-Mar-22	0.250 L	01-Apr-22 18:10	1
PFUnA	2058-94-8	38.7	40.0	96.7	65 - 140		B22C148	29-Mar-22	0.250 L	01-Apr-22 18:10	1
PFDS	335-77-3	38.8	40.0	96.9	50 - 150		B22C148	29-Mar-22	0.250 L	01-Apr-22 18:10	1
PFDoA	307-55-1	43.3	40.0	108	65 - 135		B22C148	29-Mar-22	0.250 L	01-Apr-22 18:10	1
PFTrDA	72629-94-8	39.2	40.0	97.9	60 - 140		B22C148	29-Mar-22	0.250 L	01-Apr-22 18:10	1
PFTeDA	376-06-7	39.2	40.0	98.0	65 - 135		B22C148	29-Mar-22	0.250 L	01-Apr-22 18:10	1

Labeled Standards	Type	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	85.4	25 - 150		B22C148	29-Mar-22	0.250 L	01-Apr-22 18:10	1
13C3-PFPeA	IS	87.9	25 - 150		B22C148	29-Mar-22	0.250 L	01-Apr-22 18:10	1
13C3-PFBS	IS	87.7	25 - 150		B22C148	29-Mar-22	0.250 L	01-Apr-22 18:10	1
13C2-4:2 FTS	IS	98.3	25 - 150		B22C148	29-Mar-22	0.250 L	01-Apr-22 18:10	1
13C2-PFHxA	IS	93.2	25 - 150		B22C148	29-Mar-22	0.250 L	01-Apr-22 18:10	1
13C4-PFHpA	IS	89.2	25 - 150		B22C148	29-Mar-22	0.250 L	01-Apr-22 18:10	1
13C3-PFHxS	IS	94.7	25 - 150		B22C148	29-Mar-22	0.250 L	01-Apr-22 18:10	1
13C2-6:2 FTS	IS	99.5	25 - 150		B22C148	29-Mar-22	0.250 L	01-Apr-22 18:10	1
13C5-PFNA	IS	86.6	25 - 150		B22C148	29-Mar-22	0.250 L	01-Apr-22 18:10	1
13C8-PFOSA	IS	62.7	10 - 150		B22C148	29-Mar-22	0.250 L	01-Apr-22 18:10	1

Sample ID: OPR **PFAS Isotope Dilution Method**

Client Data

Name: Hall Environmental Analytical Laboratory
Project: 2203667
Matrix: Aqueous

Laboratory Data

Lab Sample: B22C148-BS1
Column: BEH C18

Labeled Standards	Type	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFOA	IS	98.8	25 - 150		B22C148	29-Mar-22	0.250 L	01-Apr-22 18:10	1
13C8-PFOS	IS	86.5	25 - 150		B22C148	29-Mar-22	0.250 L	01-Apr-22 18:10	1
13C2-PFDA	IS	86.8	25 - 150		B22C148	29-Mar-22	0.250 L	01-Apr-22 18:10	1
13C2-8:2 FTS	IS	80.2	25 - 150		B22C148	29-Mar-22	0.250 L	01-Apr-22 18:10	1
d3-MeFOSAA	IS	88.7	25 - 150		B22C148	29-Mar-22	0.250 L	01-Apr-22 18:10	1
13C2-PFUnA	IS	80.9	25 - 150		B22C148	29-Mar-22	0.250 L	01-Apr-22 18:10	1
d5-EtFOSAA	IS	77.4	25 - 150		B22C148	29-Mar-22	0.250 L	01-Apr-22 18:10	1
13C2-PFDoA	IS	83.0	25 - 150		B22C148	29-Mar-22	0.250 L	01-Apr-22 18:10	1
13C2-PFTeDA	IS	81.4	20 - 150		B22C148	29-Mar-22	0.250 L	01-Apr-22 18:10	1

Vista
an Enthalpy Analytical observatory

Sample ID: OW-63

PFAS Isotope Dilution Method

Client Data

Name: Hall Environmental Analytical Laboratory
Project: 2203667
Location: 2203667-007G
Matrix: Groundwater
Date Collected: 10-Mar-22 09:30

Laboratory Data

Lab Sample: 2203119-01
Date Received: 15-Mar-22 09:50
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	2.09		B22C148	29-Mar-22	0.239 L	01-Apr-22 18:20	1
PFPeA	2706-90-3	486	2.09		B22C148	29-Mar-22	0.239 L	01-Apr-22 18:20	1
PFBS	375-73-5	41.9	2.09		B22C148	29-Mar-22	0.239 L	01-Apr-22 18:20	1
4:2 FTS	757124-72-4	ND	2.09		B22C148	29-Mar-22	0.239 L	01-Apr-22 18:20	1
PFHxA	307-24-4	347	2.09		B22C148	29-Mar-22	0.239 L	01-Apr-22 18:20	1
PFPeS	2706-91-4	41.7	2.09		B22C148	29-Mar-22	0.239 L	01-Apr-22 18:20	1
PFHpA	375-85-9	128	2.09		B22C148	29-Mar-22	0.239 L	01-Apr-22 18:20	1
PFHxS	355-46-4	263	2.09		B22C148	29-Mar-22	0.239 L	01-Apr-22 18:20	1
6:2 FTS	27619-97-2	679	2.09		B22C148	29-Mar-22	0.239 L	01-Apr-22 18:20	1
PFOA	335-67-1	124	2.09		B22C148	29-Mar-22	0.239 L	01-Apr-22 18:20	1
PFHpS	375-92-8	9.19	2.09		B22C148	29-Mar-22	0.239 L	01-Apr-22 18:20	1
PFNA	375-95-1	523	2.09		B22C148	29-Mar-22	0.239 L	01-Apr-22 18:20	1
PFOSA	754-91-6	ND	2.09		B22C148	29-Mar-22	0.239 L	01-Apr-22 18:20	1
PFOS	1763-23-1	351	2.09		B22C148	29-Mar-22	0.239 L	01-Apr-22 18:20	1
PFDA	335-76-2	11.2	2.09		B22C148	29-Mar-22	0.239 L	01-Apr-22 18:20	1
8:2 FTS	39108-34-4	70.8	2.09		B22C148	29-Mar-22	0.239 L	01-Apr-22 18:20	1
PFNS	68259-12-1	ND	2.09		B22C148	29-Mar-22	0.239 L	01-Apr-22 18:20	1
MeFOSAA	2355-31-9	ND	2.09		B22C148	29-Mar-22	0.239 L	01-Apr-22 18:20	1
EtFOSAA	2991-50-6	ND	2.09		B22C148	29-Mar-22	0.239 L	01-Apr-22 18:20	1
PFUnA	2058-94-8	ND	2.09		B22C148	29-Mar-22	0.239 L	01-Apr-22 18:20	1
PFDS	335-77-3	ND	2.09		B22C148	29-Mar-22	0.239 L	01-Apr-22 18:20	1
PFDoA	307-55-1	ND	2.09		B22C148	29-Mar-22	0.239 L	01-Apr-22 18:20	1
PFTrDA	72629-94-8	ND	2.09		B22C148	29-Mar-22	0.239 L	01-Apr-22 18:20	1
PFTeDA	376-06-7	ND	2.09		B22C148	29-Mar-22	0.239 L	01-Apr-22 18:20	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	19.5	25 - 150	H	B22C148	29-Mar-22	0.239 L	01-Apr-22 18:20	1
13C3-PFPeA	IS	87.0	25 - 150		B22C148	29-Mar-22	0.239 L	01-Apr-22 18:20	1
13C3-PFBS	IS	82.4	25 - 150		B22C148	29-Mar-22	0.239 L	01-Apr-22 18:20	1
13C2-4:2 FTS	IS	72.8	25 - 150		B22C148	29-Mar-22	0.239 L	01-Apr-22 18:20	1
13C2-PFHxA	IS	80.1	25 - 150		B22C148	29-Mar-22	0.239 L	01-Apr-22 18:20	1
13C4-PFHpA	IS	82.2	25 - 150		B22C148	29-Mar-22	0.239 L	01-Apr-22 18:20	1
13C3-PFHxS	IS	79.9	25 - 150		B22C148	29-Mar-22	0.239 L	01-Apr-22 18:20	1
13C2-6:2 FTS	IS	87.9	25 - 150		B22C148	29-Mar-22	0.239 L	01-Apr-22 18:20	1
13C5-PFNA	IS	76.0	25 - 150		B22C148	29-Mar-22	0.239 L	01-Apr-22 18:20	1
13C8-PFOSA	IS	50.8	10 - 150		B22C148	29-Mar-22	0.239 L	01-Apr-22 18:20	1
13C2-PFOA	IS	85.2	25 - 150		B22C148	29-Mar-22	0.239 L	01-Apr-22 18:20	1
13C8-PFOS	IS	92.9	25 - 150		B22C148	29-Mar-22	0.239 L	01-Apr-22 18:20	1

Sample ID: OW-63 — **PFAS Isotope Dilution Method**

Client Data

Name:	Hall Environmental Analytical Laboratory	Matrix:	Groundwater
Project:	2203667	Date Collected:	10-Mar-22 09:30
Location:	2203667-007G		

Laboratory Data

Lab Sample:	2203119-01	Column:	BEH C18
Date Received:	15-Mar-22 09:50		

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFDA	IS	79.6	25 - 150		B22C148	29-Mar-22	0.239 L	01-Apr-22 18:20	1
13C2-8:2 FTS	IS	76.6	25 - 150		B22C148	29-Mar-22	0.239 L	01-Apr-22 18:20	1
d3-MeFOSAA	IS	77.8	25 - 150		B22C148	29-Mar-22	0.239 L	01-Apr-22 18:20	1
13C2-PFUnA	IS	74.3	25 - 150		B22C148	29-Mar-22	0.239 L	01-Apr-22 18:20	1
d5-EtFOSAA	IS	72.5	25 - 150		B22C148	29-Mar-22	0.239 L	01-Apr-22 18:20	1
13C2-PFDoA	IS	71.6	25 - 150		B22C148	29-Mar-22	0.239 L	01-Apr-22 18:20	1
13C2-PFTeDA	IS	65.3	20 - 150		B22C148	29-Mar-22	0.239 L	01-Apr-22 18:20	1

RL - Reporting limit

Results reported to RL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

Sample ID: PFAS-FB — **PFAS Isotope Dilution Method**

Client Data

Name: Hall Environmental Analytical Laboratory
Project: 2203667
Location: 2203667-010A
Matrix: Groundwater
Date Collected: 10-Mar-22 09:30

Laboratory Data

Lab Sample: 2203119-02
Date Received: 15-Mar-22 09:50
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	1.99		B22C148	29-Mar-22	0.251 L	01-Apr-22 02:06	1
PFPeA	2706-90-3	ND	1.99		B22C148	29-Mar-22	0.251 L	01-Apr-22 02:06	1
PFBS	375-73-5	ND	1.99		B22C148	29-Mar-22	0.251 L	01-Apr-22 02:06	1
4:2 FTS	757124-72-4	ND	1.99		B22C148	29-Mar-22	0.251 L	01-Apr-22 02:06	1
PFHxA	307-24-4	ND	1.99		B22C148	29-Mar-22	0.251 L	01-Apr-22 02:06	1
PFPeS	2706-91-4	ND	1.99		B22C148	29-Mar-22	0.251 L	01-Apr-22 02:06	1
PFHpA	375-85-9	ND	1.99		B22C148	29-Mar-22	0.251 L	01-Apr-22 02:06	1
PFHxS	355-46-4	ND	1.99		B22C148	29-Mar-22	0.251 L	01-Apr-22 02:06	1
6:2 FTS	27619-97-2	ND	1.99		B22C148	29-Mar-22	0.251 L	01-Apr-22 02:06	1
PFOA	335-67-1	ND	1.99		B22C148	29-Mar-22	0.251 L	01-Apr-22 02:06	1
PFHpS	375-92-8	ND	1.99		B22C148	29-Mar-22	0.251 L	01-Apr-22 02:06	1
PFNA	375-95-1	ND	1.99		B22C148	29-Mar-22	0.251 L	01-Apr-22 02:06	1
PFOSA	754-91-6	ND	1.99		B22C148	29-Mar-22	0.251 L	01-Apr-22 02:06	1
PFOS	1763-23-1	ND	1.99		B22C148	29-Mar-22	0.251 L	01-Apr-22 02:06	1
PFDA	335-76-2	ND	1.99		B22C148	29-Mar-22	0.251 L	01-Apr-22 02:06	1
8:2 FTS	39108-34-4	ND	1.99		B22C148	29-Mar-22	0.251 L	01-Apr-22 02:06	1
PFNS	68259-12-1	ND	1.99		B22C148	29-Mar-22	0.251 L	01-Apr-22 02:06	1
MeFOSAA	2355-31-9	ND	1.99		B22C148	29-Mar-22	0.251 L	01-Apr-22 02:06	1
EtFOSAA	2991-50-6	ND	1.99		B22C148	29-Mar-22	0.251 L	01-Apr-22 02:06	1
PFUnA	2058-94-8	ND	1.99		B22C148	29-Mar-22	0.251 L	01-Apr-22 02:06	1
PFDS	335-77-3	ND	1.99		B22C148	29-Mar-22	0.251 L	01-Apr-22 02:06	1
PFDoA	307-55-1	ND	1.99		B22C148	29-Mar-22	0.251 L	01-Apr-22 02:06	1
PFTrDA	72629-94-8	ND	1.99		B22C148	29-Mar-22	0.251 L	01-Apr-22 02:06	1
PFTeDA	376-06-7	ND	1.99		B22C148	29-Mar-22	0.251 L	01-Apr-22 02:06	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	74.4	25 - 150		B22C148	29-Mar-22	0.251 L	01-Apr-22 02:06	1
13C3-PFPeA	IS	80.6	25 - 150		B22C148	29-Mar-22	0.251 L	01-Apr-22 02:06	1
13C3-PFBS	IS	97.6	25 - 150		B22C148	29-Mar-22	0.251 L	01-Apr-22 02:06	1
13C2-4:2 FTS	IS	82.7	25 - 150		B22C148	29-Mar-22	0.251 L	01-Apr-22 02:06	1
13C2-PFHxA	IS	78.3	25 - 150		B22C148	29-Mar-22	0.251 L	01-Apr-22 02:06	1
13C4-PFHpA	IS	82.9	25 - 150		B22C148	29-Mar-22	0.251 L	01-Apr-22 02:06	1
13C3-PFHxS	IS	84.6	25 - 150		B22C148	29-Mar-22	0.251 L	01-Apr-22 02:06	1
13C2-6:2 FTS	IS	89.4	25 - 150		B22C148	29-Mar-22	0.251 L	01-Apr-22 02:06	1
13C5-PFNA	IS	79.9	25 - 150		B22C148	29-Mar-22	0.251 L	01-Apr-22 02:06	1
13C8-PFOSA	IS	68.9	10 - 150		B22C148	29-Mar-22	0.251 L	01-Apr-22 02:06	1
13C2-PFOA	IS	83.9	25 - 150		B22C148	29-Mar-22	0.251 L	01-Apr-22 02:06	1
13C8-PFOS	IS	87.5	25 - 150		B22C148	29-Mar-22	0.251 L	01-Apr-22 02:06	1

Sample ID: PFAS-FB — **PFAS Isotope Dilution Method**

Client Data

Name:	Hall Environmental Analytical Laboratory	Matrix:	Groundwater
Project:	2203667	Date Collected:	10-Mar-22 09:30
Location:	2203667-010A		

Laboratory Data

Lab Sample:	2203119-02	Column:	BEH C18
Date Received:	15-Mar-22 09:50		

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFDA	IS	83.2	25 - 150		B22C148	29-Mar-22	0.251 L	01-Apr-22 02:06	1
13C2-8:2 FTS	IS	77.1	25 - 150		B22C148	29-Mar-22	0.251 L	01-Apr-22 02:06	1
d3-MeFOSAA	IS	81.7	25 - 150		B22C148	29-Mar-22	0.251 L	01-Apr-22 02:06	1
13C2-PFUnA	IS	88.1	25 - 150		B22C148	29-Mar-22	0.251 L	01-Apr-22 02:06	1
d5-EtFOSAA	IS	75.4	25 - 150		B22C148	29-Mar-22	0.251 L	01-Apr-22 02:06	1
13C2-PFDoA	IS	74.3	25 - 150		B22C148	29-Mar-22	0.251 L	01-Apr-22 02:06	1
13C2-PFTeDA	IS	65.4	20 - 150		B22C148	29-Mar-22	0.251 L	01-Apr-22 02:06	1

RL - Reporting limit

Results reported to RL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank
Conc.	Concentration
CRS	Cleanup Recovery Standard
D	Dilution
DL	Detection Limit
E	The associated compound concentration exceeded the calibration range of the instrument
H	Recovery and/or RPD was outside laboratory acceptance limits
I	Chemical Interference
IS	Internal Standard
J	The amount detected is below the Reporting Limit/LOQ
LOD	Limit of Detection
LOQ	Limit of Quantitation
M	Estimated Maximum Possible Concentration (CA Region 2 projects only)
MDL	Method Detection Limit
NA	Not applicable
ND	Not Detected
OPR	Ongoing Precision and Recovery sample
P	The reported concentration may include contribution from chlorinated diphenyl ether(s).
Q	The ion transition ratio is outside of the acceptance criteria.
RL	Reporting Limit
RL	For 537.1, the reported RLs are the MRLs.
TEQ	Toxic Equivalency, sum of the toxic equivalency factors (TEF) multiplied by the sample concentrations.
TEQMax	TEQ calculation that uses the detection limit as the concentration for non-detects
TEQMin	TEQ calculation that uses zero as the concentration for non-detects
TEQRisk	TEQ calculation that uses ½ the detection limit as the concentration for non-detects
U	Not Detected (specific projects only)
*	See Cover Letter

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

Vista Analytical Laboratory Certifications

Accrediting Authority	Certificate Number
Alaska Department of Environmental Conservation	17-013
Arkansas Department of Environmental Quality	21-023-0
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Department of Health	E87777-26
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2020018
Massachusetts Department of Environmental Protection	M-CA413
Michigan Department of Environmental Quality	9932
Minnesota Department of Health	1980678
New Hampshire Environmental Accreditation Program	207720
New Jersey Department of Environmental Protection	CA003
New York Department of Health	11411
Ohio Environmental Protection Agency	87778
Oregon Laboratory Accreditation Program	4042-016
Pennsylvania Department of Environmental Protection	017
Texas Commission on Environmental Quality	T104704189-21-12
Vermont Department of Health	VT-4042
Virginia Department of General Services	10769
Washington Department of Ecology	C584
Wisconsin Department of Natural Resources	998036160

Current certificates and lists of licensed parameters are located in the Quality Assurance office and are available upon request.

NELAP Accredited Test Methods

MATRIX: Air	
Description of Test	**Method**
Determination of Polychlorinated p- Dioxins & Polychlorinated Dibenzofurans	EPA 23
Polychlorinated Dibenzodioxins in Ambient Air by GC/HRMS	EPA TO-9A

MATRIX: Biological Tissue	
Description of Test	**Method**
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Drinking Water	
Description of Test	**Method**
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613/1613B
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537.1
Determination of Per- and Polyfluoroalkyl Substances in Drinking Water by Isotope Dilution Anion Exchange Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry	EPA 533
Perfluorooctanesulonate (PFOS) and Perfluorooctanoate (PFOA) - Method for Unfiltered Samples Using Solid Phase Extraction and Liquid Chromatography/Mass Spectrometry	ISO 25101 2009

MATRIX: Non-Potable Water	
Description of Test	**Method**
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Dioxin by GC/HRMS	EPA 613
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Solids	
Description of Test	**Method**
Tetra-Octa Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

2203119

0-7°C

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
Tel. 505-345-3975
Fax 505-345-4107
www.hallenvironmental.com

COMPANY: Vista Analytical Labor	Vista Analytical Laboratory	PHONE: (916) 673-1520	FAX
ADDRESS: 1104 Windfield Way		P.O. #:	EMAIL
CITY, STATE, ZIP: El Dorado Hills, CA 95762			

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	HOLD	ANALYTICAL COMMENTS
1	2203667-007G	DW-63	250HDPE	Groundw	3/10/2022 9:30:00 AM		2,24 compound PFAS testing unchlorinated sample
2	2203667-010A	PFAS-FB	250HDPE	Groundw	3/10/2022 9:30:00 AM		1,24 compound PFAS testing unchlorinated sample

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the SAMPLE ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By:	Date: 3/11/2022	Time: 11:14 AM	Received By: Karen Hinton	Date: 03/11/22	Time: 09:50
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Turn-Around Time: Standard

REMARKS:

Vista Analytical Laboratory

Sample Log-In Checklist

Page # 1 of 1

Vista Work Order #: 2203119 TAT 5+2

Samples Arrival:	**Date/Time** 03/15/22 0850		**Initials:** KS		**Location:** WR-2 **Shelf/Rack:** R12		
Delivered By:	(FedEx)	UPS	On Trac	GLS	DHL	Hand Delivered	Other
Preservation:	Ice		(Blue Ice)		Techni Ice	Dry Ice	None
Temp °C: 0.2 (uncorrected)			**Probe used:** Y (N)		**Thermometer ID:** IR-3		
Temp °C: 2.2 (corrected)							

	YES	NO	NA
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Airbill ✓ Trk # 7762 9394 0851	✓		
Shipping Documentation Present?	✓		
Shipping Container: Vista, (Client), Retain, (Return), Dispose			
Chain of Custody / Sample Documentation Present?	✓		
Chain of Custody / Sample Documentation Complete?	✓		
Holding Time Acceptable?	✓		

Logged In:	**Date/Time** 03/15/22 12:22	**Initials:** KS	**Location:** R-3, WR-2 **Shelf/Rack:** A-2, F-6
COC Anomaly/Sample Acceptance Form completed?		✓	✓

Comments:

CoC/Label Reconciliation Report WO# 2203119

Lab Number	CoC Sample ID		Sample Matrix	Sample Date/Time		Container	Preservative	Sample Comments
2203119-01	A OW-03	☑ B	2203047-007D	10-Mar-22 09:30	☑	HDPE Bottle, 250 mL	Aqueous	
2203119-01	B OW-03	☑ ↓	2203047-008D	10-Mar-22 09:30	☑	HDPE Bottle, 250 mL	Aqueous	
2203119-02	A FBAS-FB	A ☑ ↓	2203047-010A	10-Mar-22 09:30	☑	HDPE Bottle, 250 mL	Aqueous	

Checkmarks indicate that information on the COC reconciled with the sample label.
Any discrepancies are noted in the following columns.

	Yes	No	NA
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Adequate Sample Volume?	✓		
Container Type Appropriate for Analysis(es)	✓		

Comments:
(A): NO BACKUP VOLUME
(B): ESS TRISMA LABEL

Preservation Documented: $Na_2S_2O_3$ (Trizma) $NH_4CH_3CO_2$ None Other
B

Verified by/Date: CM 3/15/22

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203667**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **A86443**	RunNo: **86443**
Prep Date:	Analysis Date: **3/14/2022**	SeqNo: **3049709** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **A86443**	RunNo: **86443**
Prep Date:	Analysis Date: **3/14/2022**	SeqNo: **3049711** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0021	0.0030	0.002000	0	105	50	150			J
Beryllium	0.0018	0.0020	0.002000	0	90.8	50	150			J
Cadmium	0.0019	0.0020	0.002000	0	95.3	50	150			J
Chromium	0.0062	0.0060	0.006000	0	104	50	150			
Cobalt	0.0063	0.0060	0.006000	0	104	50	150			
Nickel	0.0040	0.010	0.005000	0	79.1	50	150			J
Silver	0.0049	0.0050	0.005000	0	97.1	50	150			J
Vanadium	0.010	0.050	0.01000	0	101	50	150			J
Zinc	0.012	0.010	0.01000	0	120	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **A86443**	RunNo: **86443**
Prep Date:	Analysis Date: **3/14/2022**	SeqNo: **3049776** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0030	0.5000	0	99.6	85	115			
Beryllium	0.50	0.0020	0.5000	0	100	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.2	85	115			
Chromium	0.50	0.0060	0.5000	0	101	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.1	85	115			
Nickel	0.48	0.010	0.5000	0	96.4	85	115			
Silver	0.10	0.0050	0.1000	0	100	85	115			
Vanadium	0.51	0.050	0.5000	0	102	85	115			
Zinc	0.50	0.010	0.5000	0	100	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203667**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB-66641**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **66641**	RunNo: **87030**
Prep Date: **4/5/2022**	Analysis Date: **4/6/2022**	SeqNo: **3075581** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS-66641**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **66641**	RunNo: **87030**
Prep Date: **4/5/2022**	Analysis Date: **4/6/2022**	SeqNo: **3075582** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0020	0.0030	0.002000	0	102	50	150			J
Beryllium	0.0020	0.0020	0.002000	0	98.0	50	150			J
Cadmium	0.0018	0.0020	0.002000	0	91.0	50	150			J
Chromium	0.0058	0.0060	0.006000	0	97.2	50	150			J
Cobalt	0.0069	0.0060	0.006000	0	115	50	150			
Nickel	0.0038	0.010	0.005000	0	75.2	50	150			J
Silver	0.0048	0.0050	0.005000	0	95.5	50	150			J
Vanadium	0.010	0.050	0.01000	0	105	50	150			J
Zinc	0.011	0.010	0.01000	0	113	50	150			

Sample ID: **LCS-66641**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **66641**	RunNo: **87030**
Prep Date: **4/5/2022**	Analysis Date: **4/6/2022**	SeqNo: **3075583** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0030	0.5000	0	96.9	85	115			
Beryllium	0.52	0.0020	0.5000	0	103	85	115			
Cadmium	0.48	0.0020	0.5000	0	95.7	85	115			
Chromium	0.48	0.0060	0.5000	0	96.0	85	115			
Cobalt	0.46	0.0060	0.5000	0	92.9	85	115			
Nickel	0.47	0.010	0.5000	0	93.2	85	115			
Silver	0.098	0.0050	0.1000	0	98.0	85	115			
Vanadium	0.50	0.050	0.5000	0	99.3	85	115			
Zinc	0.49	0.010	0.5000	0	98.3	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203667**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB-66642** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**

Client ID: **PBW** Batch ID: **66642** RunNo: **87030**

Prep Date: **4/5/2022** Analysis Date: **4/6/2022** SeqNo: **3075584** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS-66642** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**

Client ID: **BatchQC** Batch ID: **66642** RunNo: **87030**

Prep Date: **4/5/2022** Analysis Date: **4/6/2022** SeqNo: **3075585** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0018	0.0030	0.002000	0	88.4	50	150			J
Beryllium	0.0020	0.0020	0.002000	0	99.0	50	150			J
Cadmium	0.0016	0.0020	0.002000	0	78.0	50	150			J
Chromium	0.0063	0.0060	0.006000	0	105	50	150			
Cobalt	0.0061	0.0060	0.006000	0	102	50	150			
Nickel	0.0034	0.010	0.005000	0	67.7	50	150			J
Silver	0.0044	0.0050	0.005000	0	88.7	50	150			J
Vanadium	0.010	0.050	0.01000	0	101	50	150			J
Zinc	0.011	0.010	0.01000	0	107	50	150			

Sample ID: **LCS-66642** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**

Client ID: **LCSW** Batch ID: **66642** RunNo: **87030**

Prep Date: **4/5/2022** Analysis Date: **4/6/2022** SeqNo: **3075586** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0030	0.5000	0	97.1	85	115			
Beryllium	0.52	0.0020	0.5000	0	104	85	115			
Cadmium	0.47	0.0020	0.5000	0	94.7	85	115			
Chromium	0.49	0.0060	0.5000	0	97.6	85	115			
Cobalt	0.47	0.0060	0.5000	0	93.7	85	115			
Nickel	0.47	0.010	0.5000	0	93.3	85	115			
Silver	0.098	0.0050	0.1000	0	98.3	85	115			
Vanadium	0.49	0.050	0.5000	0	99.0	85	115			
Zinc	0.48	0.010	0.5000	0	95.7	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203667**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **2203667-004DMS** SampType: **MS** TestCode: **EPA Method 200.7: Metals**
Client ID: **OW-57** Batch ID: **66642** RunNo: **87030**
Prep Date: **4/5/2022** Analysis Date: **4/6/2022** SeqNo: **3075660** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.51	0.0020	0.5000	0	103	70	130			
Cadmium	0.47	0.0020	0.5000	0	93.6	70	130			
Chromium	0.49	0.0060	0.5000	0	97.3	70	130			
Cobalt	0.46	0.0060	0.5000	0	91.1	70	130			
Nickel	0.51	0.010	0.5000	0.05548	90.9	70	130			
Silver	0.10	0.0050	0.1000	0	101	70	130			
Vanadium	0.51	0.050	0.5000	0.003622	100	70	130			
Zinc	0.45	0.010	0.5000	0	90.3	70	130			

Sample ID: **2203667-004DMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Metals**
Client ID: **OW-57** Batch ID: **66642** RunNo: **87030**
Prep Date: **4/5/2022** Analysis Date: **4/6/2022** SeqNo: **3075661** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.51	0.0020	0.5000	0	103	70	130	0.128	20	
Cadmium	0.45	0.0020	0.5000	0	90.5	70	130	3.44	20	
Chromium	0.47	0.0060	0.5000	0	93.1	70	130	4.36	20	
Cobalt	0.44	0.0060	0.5000	0	87.8	70	130	3.67	20	
Nickel	0.49	0.010	0.5000	0.05548	87.2	70	130	3.70	20	
Silver	0.096	0.0050	0.1000	0	96.1	70	130	4.69	20	
Vanadium	0.50	0.050	0.5000	0.003622	98.5	70	130	1.94	20	
Zinc	0.43	0.010	0.5000	0	86.7	70	130	4.02	20	

Sample ID: **2203667-005DMS** SampType: **MS** TestCode: **EPA Method 200.7: Metals**
Client ID: **OW-58** Batch ID: **66642** RunNo: **87030**
Prep Date: **4/5/2022** Analysis Date: **4/6/2022** SeqNo: **3075666** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.51	0.0020	0.5000	0	103	70	130			
Cadmium	0.46	0.0020	0.5000	0	91.4	70	130			
Chromium	0.48	0.0060	0.5000	0	95.1	70	130			
Cobalt	0.45	0.0060	0.5000	0	90.1	70	130			
Nickel	0.50	0.010	0.5000	0.05068	89.1	70	130			
Silver	0.10	0.0050	0.1000	0	100	70	130			
Vanadium	0.50	0.050	0.5000	0.004904	99.9	70	130			
Zinc	0.44	0.010	0.5000	0	88.5	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203667**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **2203667-005DMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Metals**
Client ID: **OW-58** Batch ID: **66642** RunNo: **87030**
Prep Date: **4/5/2022** Analysis Date: **4/6/2022** SeqNo: **3075667** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.51	0.0020	0.5000	0	103	70	130	0.132	20	
Cadmium	0.46	0.0020	0.5000	0	92.1	70	130	0.776	20	
Chromium	0.49	0.0060	0.5000	0	97.2	70	130	2.19	20	
Cobalt	0.46	0.0060	0.5000	0	91.8	70	130	1.86	20	
Nickel	0.51	0.010	0.5000	0.05068	90.9	70	130	1.88	20	
Silver	0.10	0.0050	0.1000	0	101	70	130	0.950	20	
Vanadium	0.51	0.050	0.5000	0.004904	100	70	130	0.518	20	
Zinc	0.45	0.010	0.5000	0	90.3	70	130	2.10	20	

Sample ID: **2203667-004DMS** SampType: **MS** TestCode: **EPA Method 200.7: Metals**
Client ID: **OW-57** Batch ID: **66642** RunNo: **87067**
Prep Date: **4/5/2022** Analysis Date: **4/7/2022** SeqNo: **3077717** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	3.8	0.015	0.5000	3.376	77.3	70	130			

Sample ID: **2203667-004DMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Metals**
Client ID: **OW-57** Batch ID: **66642** RunNo: **87067**
Prep Date: **4/5/2022** Analysis Date: **4/7/2022** SeqNo: **3077718** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	3.9	0.015	0.5000	3.376	99.8	70	130	2.94	20	

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **A87332** RunNo: **87332**
Prep Date: Analysis Date: **4/19/2022** SeqNo: **3088697** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								

Sample ID: **LLLCS** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **A87332** RunNo: **87332**
Prep Date: Analysis Date: **4/19/2022** SeqNo: **3088702** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0020	0.0030	0.002000	0	99.4	50	150			J

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203667**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **A87332**	RunNo: **87332**
Prep Date:	Analysis Date: **4/19/2022**	SeqNo: **3088704** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0030	0.5000	0	103	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203667**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW** Batch ID: **A86443** RunNo: **86443**
Prep Date: Analysis Date: **3/14/2022** SeqNo: **3049710** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **A86443** RunNo: **86443**
Prep Date: Analysis Date: **3/14/2022** SeqNo: **3049712** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0021	0.0020	0.002000	0	105	50	150			
Beryllium	0.0018	0.0020	0.002000	0	90.8	50	150			J
Cadmium	0.0019	0.0020	0.002000	0	95.3	50	150			J
Chromium	0.0062	0.0060	0.006000	0	104	50	150			
Cobalt	0.0063	0.0060	0.006000	0	104	50	150			
Nickel	0.0040	0.010	0.005000	0	79.1	50	150			J
Silver	0.0049	0.0050	0.005000	0	97.1	50	150			J
Vanadium	0.010	0.050	0.01000	0	101	50	150			J
Zinc	0.012	0.010	0.01000	0	120	50	150			

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **A86443** RunNo: **86443**
Prep Date: Analysis Date: **3/14/2022** SeqNo: **3049777** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0020	0.5000	0	99.6	85	115			
Beryllium	0.50	0.0020	0.5000	0	100	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.2	85	115			
Chromium	0.50	0.0060	0.5000	0	101	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.1	85	115			
Nickel	0.48	0.010	0.5000	0	96.4	85	115			
Silver	0.10	0.0050	0.1000	0	100	85	115			
Vanadium	0.51	0.050	0.5000	0	102	85	115			
Zinc	0.50	0.010	0.5000	0	100	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203667**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A87332**	RunNo: **87332**
Prep Date:	Analysis Date: **4/19/2022**	SeqNo: **3088745** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								

Sample ID: **LLLCS**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A87332**	RunNo: **87332**
Prep Date:	Analysis Date: **4/19/2022**	SeqNo: **3088746** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0020	0.0020	0.002000	0	99.4	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A87332**	RunNo: **87332**
Prep Date:	Analysis Date: **4/19/2022**	SeqNo: **3088747** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0020	0.5000	0	103	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203667**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**							
Client ID: **PBW**	Batch ID: **A86537**	RunNo: **86537**							
Prep Date:	Analysis Date: **3/16/2022**	SeqNo: **3053956**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.00050								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**							
Client ID: **BatchQC**	Batch ID: **A86537**	RunNo: **86537**							
Prep Date:	Analysis Date: **3/16/2022**	SeqNo: **3053957**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.00049	0.00050	0.0005000	0	98.2	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**							
Client ID: **LCSW**	Batch ID: **A86537**	RunNo: **86537**							
Prep Date:	Analysis Date: **3/16/2022**	SeqNo: **3053958**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.012	0.00050	0.01250	0	97.4	85	115			

Sample ID: **MB-66191**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**							
Client ID: **PBW**	Batch ID: **66191**	RunNo: **86564**							
Prep Date: **3/15/2022**	Analysis Date: **3/17/2022**	SeqNo: **3055017**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **MSLLLCS-66191**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**							
Client ID: **BatchQC**	Batch ID: **66191**	RunNo: **86564**							
Prep Date: **3/15/2022**	Analysis Date: **3/17/2022**	SeqNo: **3055018**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0012	0.0010	0.001000	0	120	50	150			
Arsenic	0.0012	0.0010	0.001000	0	117	50	150			
Lead	0.00051	0.00050	0.0005000	0	103	50	150			

Sample ID: **MSLCS-66191**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**							
Client ID: **LCSW**	Batch ID: **66191**	RunNo: **86564**							
Prep Date: **3/15/2022**	Analysis Date: **3/17/2022**	SeqNo: **3055019**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203667**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **MSLCS-66191**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **66191**	RunNo: **86564**
Prep Date: **3/15/2022**	Analysis Date: **3/17/2022**	SeqNo: **3055019** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	105	85	115			
Arsenic	0.026	0.0010	0.02500	0	103	85	115			
Lead	0.013	0.00050	0.01250	0	101	85	115			
Selenium	0.027	0.0010	0.02500	0	107	85	115			

Sample ID: **MSLLLCS-66191**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **66191**	RunNo: **86564**
Prep Date: **3/15/2022**	Analysis Date: **3/17/2022**	SeqNo: **3055052** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.00078	0.0010	0.001000	0	78.5	50	150			J

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203667**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A86482**	RunNo: **86482**
Prep Date:	Analysis Date: **3/15/2022**	SeqNo: **3051645** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A86482**	RunNo: **86482**
Prep Date:	Analysis Date: **3/15/2022**	SeqNo: **3051646** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00068	0.0010	0.001000	0	67.8	50	150			J
Arsenic	0.00095	0.0010	0.001000	0	95.1	50	150			J
Lead	0.00052	0.00050	0.0005000	0	104	50	150			
Selenium	0.0013	0.0010	0.001000	0	126	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A86482**	RunNo: **86482**
Prep Date:	Analysis Date: **3/15/2022**	SeqNo: **3051647** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.022	0.0010	0.02500	0	87.5	85	115			
Arsenic	0.026	0.0010	0.02500	0	103	85	115			
Lead	0.012	0.00050	0.01250	0	98.4	85	115			
Selenium	0.025	0.0010	0.02500	0	98.2	85	115			

Sample ID: **2203667-001EMS**	SampType: **MS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **EB 3-10-22**	Batch ID: **A86482**	RunNo: **86482**
Prep Date:	Analysis Date: **3/15/2022**	SeqNo: **3051681** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.020	0.0010	0.02500	0	81.0	70	130			
Arsenic	0.026	0.0010	0.02500	0	103	70	130			
Selenium	0.025	0.0010	0.02500	0	99.2	70	130			

Sample ID: **2203667-001EMSD**	SampType: **MSD**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **EB 3-10-22**	Batch ID: **A86482**	RunNo: **86482**
Prep Date:	Analysis Date: **3/15/2022**	SeqNo: **3051682** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.023	0.0010	0.02500	0	90.4	70	130	11.0	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203667**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **2203667-001EMSD** SampType: **MSD** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **EB 3-10-22** Batch ID: **A86482** RunNo: **86482**
Prep Date: Analysis Date: **3/15/2022** SeqNo: **3051682** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.026	0.0010	0.02500	0	104	70	130	0.806	20	
Selenium	0.026	0.0010	0.02500	0	105	70	130	5.66	20	

Sample ID: **2203667-002EMSLL** SampType: **MS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **MKTF-46** Batch ID: **A86537** RunNo: **86537**
Prep Date: Analysis Date: **3/16/2022** SeqNo: **3053989** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.011	0.00050	0.01250	0	88.5	70	130			

Sample ID: **2203667-002EMSDL** SampType: **MSD** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **MKTF-46** Batch ID: **A86537** RunNo: **86537**
Prep Date: Analysis Date: **3/16/2022** SeqNo: **3053990** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.011	0.00050	0.01250	0	89.3	70	130	0.906	20	

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **A86537** RunNo: **86537**
Prep Date: Analysis Date: **3/16/2022** SeqNo: **3055193** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.00050								

Sample ID: **LCSLL** SampType: **LCSLL** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **A86537** RunNo: **86537**
Prep Date: Analysis Date: **3/16/2022** SeqNo: **3055194** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.00049	0.00050	0.0005000	0	98.2	50	150			J

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **A86537** RunNo: **86537**
Prep Date: Analysis Date: **3/16/2022** SeqNo: **3055195** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.012	0.00050	0.01250	0	97.4	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203667**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB-66283**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW**	Batch ID: **66283**	RunNo: **86625**
Prep Date: **3/21/2022**	Analysis Date: **3/21/2022**	SeqNo: **3058101** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-66283**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC**	Batch ID: **66283**	RunNo: **86625**
Prep Date: **3/21/2022**	Analysis Date: **3/21/2022**	SeqNo: **3058102** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00016	0.00020	0.0001500	0	108	50	150			J

Sample ID: **LCS-66283**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW**	Batch ID: **66283**	RunNo: **86625**
Prep Date: **3/21/2022**	Analysis Date: **3/21/2022**	SeqNo: **3058103** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0049	0.00020	0.005000	0	98.0	85	115			

Sample ID: **2203667-008DMS**	SampType: **MS**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **DUP 3-10-22**	Batch ID: **66283**	RunNo: **86625**
Prep Date: **3/21/2022**	Analysis Date: **3/21/2022**	SeqNo: **3058159** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0052	0.0010	0.005000	0	104	75	125			

Sample ID: **2203667-008DMSD**	SampType: **MSD**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **DUP 3-10-22**	Batch ID: **66283**	RunNo: **86625**
Prep Date: **3/21/2022**	Analysis Date: **3/21/2022**	SeqNo: **3058160** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.0010	0.005000	0	102	75	125	2.15	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203667**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB-66149**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **66149**	RunNo: **86477**							
Prep Date: **3/15/2022**	Analysis Date: **3/15/2022**	SeqNo: **3052009**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **MB-66149**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **66149**	RunNo: **86477**							
Prep Date: **3/15/2022**	Analysis Date: **3/15/2022**	SeqNo: **3052010**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-66149**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **LCSW**	Batch ID: **66149**	RunNo: **86477**							
Prep Date: **3/15/2022**	Analysis Date: **3/15/2022**	SeqNo: **3052120**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.094	0.010	0.1000	0	94.4	70	130			

Sample ID: **LCSD-66149**	SampType: **LCSD**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **LCSS02**	Batch ID: **66149**	RunNo: **86477**							
Prep Date: **3/15/2022**	Analysis Date: **3/15/2022**	SeqNo: **3052127**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.093	0.010	0.1000	0	93.1	70	130	1.37	20	

Sample ID: **MB-66232**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **66232**	RunNo: **86558**							
Prep Date: **3/17/2022**	Analysis Date: **3/17/2022**	SeqNo: **3054885**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **MB-66232**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **66232**	RunNo: **86558**							
Prep Date: **3/17/2022**	Analysis Date: **3/17/2022**	SeqNo: **3054886**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203667**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **LCS-66232**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **LCSW**	Batch ID: **66232**	RunNo: **86558**							
Prep Date: **3/17/2022**	Analysis Date: **3/17/2022**	SeqNo: **3054887**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.098	0.010	0.1000	0	97.8	70	130			

Sample ID: **LCSD-66232**	SampType: **LCSD**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **LCSS02**	Batch ID: **66232**	RunNo: **86558**							
Prep Date: **3/17/2022**	Analysis Date: **3/17/2022**	SeqNo: **3054888**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.094	0.010	0.1000	0	94.2	70	130	3.77	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203667**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB-66129**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **PBW**	Batch ID: **66129**	RunNo: **86465**							
Prep Date: **3/11/2022**	Analysis Date: **3/15/2022**	SeqNo: **3052729**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.026	0.064								J
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.036		0.03750		95.7	42.2	138			

Sample ID: **LCSD-66129**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSS02**	Batch ID: **66129**	RunNo: **86465**							
Prep Date: **3/11/2022**	Analysis Date: **3/15/2022**	SeqNo: **3052743**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.11	0.064	0.1875	0	60.5	31.7	75.4	3.68	20	
Surr: DNOP	0.018		0.01875		96.9	42.2	138	0	0	

Sample ID: **LCS-66129**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSW**	Batch ID: **66129**	RunNo: **86465**							
Prep Date: **3/11/2022**	Analysis Date: **3/15/2022**	SeqNo: **3052754**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.11	0.064	0.1875	0	58.3	31.7	75.4			
Surr: DNOP	0.018		0.01875		96.6	42.2	138			

Sample ID: **MB-66219**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **PBW**	Batch ID: **66219**	RunNo: **86571**							
Prep Date: **3/16/2022**	Analysis Date: **3/18/2022**	SeqNo: **3057145**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.018	0.064								J
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.037		0.03750		98.4	42.2	138			

Sample ID: **LCS-66219**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSW**	Batch ID: **66219**	RunNo: **86571**							
Prep Date: **3/16/2022**	Analysis Date: **3/18/2022**	SeqNo: **3057146**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.15	0.064	0.1875	0	77.8	31.7	75.4			S
Surr: DNOP	0.022		0.01875		116	42.2	138			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203667**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **LCSD-66219**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02**	Batch ID: **66219**	RunNo: **86571**
Prep Date: **3/16/2022**	Analysis Date: **3/18/2022**	SeqNo: **3057152** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.13	0.064	0.1875	0	70.5	31.7	75.4	9.82	20	
Surr: DNOP	0.019		0.01875		99.4	42.2	138	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203667**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R86601**	RunNo: **86601**
Prep Date:	Analysis Date: **3/18/2022**	SeqNo: **3056870** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	94.9	70	130			
Toluene	21	1.0	20.00	0	107	70	130			
Chlorobenzene	22	1.0	20.00	0	108	70	130			
1,1-Dichloroethene	17	1.0	20.00	0	86.9	70	130			
Trichloroethene (TCE)	17	1.0	20.00	0	86.6	70	130			
Surr: 1,2-Dichloroethane-d4	9.3		10.00		93.3	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		105	70	130			
Surr: Dibromofluoromethane	9.1		10.00		91.2	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Sample ID: **2203667-002ams**	SampType: **MS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **MKTF-46**	Batch ID: **R86601**	RunNo: **86601**
Prep Date:	Analysis Date: **3/18/2022**	SeqNo: **3056878** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	92.6	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Chlorobenzene	21	1.0	20.00	0.1862	103	70	130			
1,1-Dichloroethene	17	1.0	20.00	0	86.1	70	130			
Trichloroethene (TCE)	17	1.0	20.00	0	84.8	70	130			
Surr: 1,2-Dichloroethane-d4	9.6		10.00		96.4	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.1	70	130			
Surr: Dibromofluoromethane	9.5		10.00		94.6	70	130			
Surr: Toluene-d8	9.9		10.00		99.4	70	130			

Sample ID: **2203667-002amsd**	SampType: **MSD**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **MKTF-46**	Batch ID: **R86601**	RunNo: **86601**
Prep Date:	Analysis Date: **3/18/2022**	SeqNo: **3056879** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	17	1.0	20.00	0	86.5	70	130	6.80	20	
Toluene	20	1.0	20.00	0	98.3	70	130	3.59	20	
Chlorobenzene	21	1.0	20.00	0.1862	102	70	130	1.34	20	
1,1-Dichloroethene	16	1.0	20.00	0	80.8	70	130	6.34	20	
Trichloroethene (TCE)	16	1.0	20.00	0	77.8	70	130	8.65	20	
Surr: 1,2-Dichloroethane-d4	9.5		10.00		94.6	70	130	0	0	
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130	0	0	
Surr: Dibromofluoromethane	9.6		10.00		95.7	70	130	0	0	
Surr: Toluene-d8	10		10.00		104	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203667**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R86601**	RunNo: **86601**
Prep Date:	Analysis Date: **3/18/2022**	SeqNo: **3056908** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	0.66	3.0								J
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.1		10.00		91.2	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		105	70	130			
Surr: Dibromofluoromethane	9.1		10.00		90.8	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203667**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R86626**	RunNo: **86626**
Prep Date:	Analysis Date: **3/21/2022**	SeqNo: **3058196** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	96.9	70	130			
Toluene	22	1.0	20.00	0	111	70	130			
Chlorobenzene	23	1.0	20.00	0	113	70	130			
1,1-Dichloroethene	19	1.0	20.00	0	93.6	70	130			
Trichloroethene (TCE)	17	1.0	20.00	0	86.8	70	130			
Surr: 1,2-Dichloroethane-d4	9.0		10.00		90.1	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	9.0		10.00		89.7	70	130			
Surr: Toluene-d8	9.9		10.00		98.8	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R86626**	RunNo: **86626**
Prep Date:	Analysis Date: **3/21/2022**	SeqNo: **3058226** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	0.68	3.0								J
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203667**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R86626**	RunNo: **86626**
Prep Date:	Analysis Date: **3/21/2022**	SeqNo: **3058226** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Styrene	ND	1.0								
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.0		10.00		90.0	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		105	70	130			
Surr: Dibromofluoromethane	9.6		10.00		95.7	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203667**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB-66142**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **66142**	RunNo: **86559**
Prep Date: **3/14/2022**	Analysis Date: **3/17/2022**	SeqNo: **3054966** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	5.0								
2,4-Dinitrophenol	ND	5.0								
2-Methylphenol	ND	5.0								
3+4-Methylphenol	ND	5.0								
Phenol	ND	5.0								
Pyridine	ND	10								
2,4,6-Trichlorophenol	ND	5.0								
Surr: 2-Fluorophenol	120		200.0		61.7	29.4	87.7			
Surr: Phenol-d5	91		200.0		45.6	28.5	64.7			
Surr: 2,4,6-Tribromophenol	130		200.0		65.3	18.6	129			
Surr: Nitrobenzene-d5	68		100.0		67.8	36.9	103			
Surr: 2-Fluorobiphenyl	62		100.0		61.8	38.1	99.9			
Surr: 4-Terphenyl-d14	94		100.0		94.5	48	155			

Sample ID: **LCS-66142**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **66142**	RunNo: **86559**
Prep Date: **3/14/2022**	Analysis Date: **3/17/2022**	SeqNo: **3054967** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	52	5.0	100.0	0	52.5	15	87.6			
Phenol	75	5.0	200.0	0	37.5	16.8	70.5			
Surr: 2-Fluorophenol	98		200.0		49.2	29.4	87.7			
Surr: Phenol-d5	76		200.0		38.0	28.5	64.7			
Surr: 2,4,6-Tribromophenol	140		200.0		71.7	18.6	129			
Surr: Nitrobenzene-d5	65		100.0		65.3	36.9	103			
Surr: 2-Fluorobiphenyl	63		100.0		62.6	38.1	99.9			
Surr: 4-Terphenyl-d14	97		100.0		96.6	48	155			

Sample ID: **LCSD-66142**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **66142**	RunNo: **86559**
Prep Date: **3/14/2022**	Analysis Date: **3/17/2022**	SeqNo: **3054968** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203667**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **LCSD-66142**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **66142**	RunNo: **86559**
Prep Date: **3/14/2022**	Analysis Date: **3/17/2022**	SeqNo: **3054968** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	44	5.0	100.0	0	43.8	15	87.6	18.1	30.4	
Phenol	58	5.0	200.0	0	29.2	16.8	70.5	24.9	37.2	
Surr: 2-Fluorophenol	74		200.0		37.2	29.4	87.7	0	0	
Surr: Phenol-d5	61		200.0		30.4	28.5	64.7	0	0	
Surr: 2,4,6-Tribromophenol	110		200.0		57.2	18.6	129	0	0	
Surr: Nitrobenzene-d5	52		100.0		51.8	36.9	103	0	0	
Surr: 2-Fluorobiphenyl	50		100.0		49.7	38.1	99.9	0	0	
Surr: 4-Terphenyl-d14	91		100.0		91.0	48	155	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203667**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **mb-66142**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**							
Client ID: **PBW**	Batch ID: **R86533**	RunNo: **86533**							
Prep Date:	Analysis Date: **3/16/2022**	SeqNo: **3053785**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.10								
2-Methylnaphthalene	ND	0.10								
Acenaphthene	ND	0.10								
Fluorene	ND	0.10								
Phenanthrene	ND	0.10								
Anthracene	ND	0.10								
Fluoranthene	ND	0.20								
Pyrene	ND	0.20								
Benz(a)anthracene	ND	0.10								
Chrysene	ND	0.10								
Benzo(b)fluoranthene	ND	0.10								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	73		100.0		73.5	31.6	100			
Surr: 2,4,6-Tribromophenol	92		200.0		46.0	22	101			
Surr: 2-Fluorobiphenyl	68		100.0		67.8	26.7	90.1			
Surr: 4-Terphenyl-d14	100		100.0		104	72.3	147			E

Sample ID: **lcs-66142**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**							
Client ID: **LCSW**	Batch ID: **R86533**	RunNo: **86533**							
Prep Date:	Analysis Date: **3/17/2022**	SeqNo: **3053786**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	70	0.10	100.0	0	69.9	29.8	82.7			E
Pyrene	100	0.20	100.0	0	99.8	51	113			E
Surr: Nitrobenzene-d5	65		100.0		65.4	31.6	100			
Surr: 2,4,6-Tribromophenol	130		200.0		66.6	22	101			
Surr: 2-Fluorobiphenyl	86		100.0		86.4	26.7	90.1			
Surr: 4-Terphenyl-d14	110		100.0		112	72.3	147			E

Sample ID: **lcsd-66142**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**							
Client ID: **LCSS02**	Batch ID: **R86533**	RunNo: **86533**							
Prep Date:	Analysis Date: **3/17/2022**	SeqNo: **3053787**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	46	0.10	100.0	0	46.4	29.8	82.7	40.5	27.8	ER
Pyrene	100	0.20	100.0	0	103	51	113	2.96	20	E
Surr: Nitrobenzene-d5	53		100.0		52.9	31.6	100	0	0	
Surr: 2,4,6-Tribromophenol	120		200.0		57.7	22	101	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203667**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **lcsd-66142**	SampType: **LCSD**			TestCode: **EPA Method 8270SIM**						
Client ID: **LCSS02**	Batch ID: **R86533**			RunNo: **86533**						
Prep Date:	Analysis Date: **3/17/2022**			SeqNo: **3053787**	Units: **µg/L**					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorobiphenyl	52		100.0		51.8	26.7	90.1	0	0	
Surr: 4-Terphenyl-d14	120		100.0		119	72.3	147	0	0	E

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203667**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **2.5ug lcs gro**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **R86601**	RunNo: **86601**
Prep Date:	Analysis Date: **3/18/2022**	SeqNo: **3057007** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.51	0.050	0.5000	0	103	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		98.0	70	130			

Sample ID: **2203667-003ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **MKTF-35**	Batch ID: **R86601**	RunNo: **86601**
Prep Date:	Analysis Date: **3/18/2022**	SeqNo: **3057011** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	53	0.50	5.000	43.28	195	70	130			S
Surr: 4-Bromofluorobenzene	99		100.0		98.8	70	130			

Sample ID: **2203667-003amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **MKTF-35**	Batch ID: **R86601**	RunNo: **86601**
Prep Date:	Analysis Date: **3/18/2022**	SeqNo: **3057012** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	53	0.50	5.000	43.28	196	70	130	0.0490	20	S
Surr: 4-Bromofluorobenzene	97		100.0		97.3	70	130	0	0	

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **R86601**	RunNo: **86601**
Prep Date:	Analysis Date: **3/18/2022**	SeqNo: **3057029** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.044	0.050								J
Surr: 4-Bromofluorobenzene	11		10.00		107	70	130			

Sample ID: **2.5ug lcs gro**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **G86626**	RunNo: **86626**
Prep Date:	Analysis Date: **3/21/2022**	SeqNo: **3058229** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.50	0.050	0.5000	0	101	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **G86626**	RunNo: **86626**
Prep Date:	Analysis Date: **3/21/2022**	SeqNo: **3058249** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203667**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **G86626**	RunNo: **86626**
Prep Date:	Analysis Date: **3/21/2022**	SeqNo: **3058249** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.034	0.050								J
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: **Marathon** Work Order Number: **2203667** RcptNo: **1**

Received By: **Cheyenne Cason** **3/11/2022 8:00:00 AM** CM

Completed By: **Desiree Dominguez** **3/11/2022 9:07:44 AM** DD

Reviewed By: JGR 3/11/22

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☐	No ☑	NA ☐
5. Sample(s) in proper container(s)?	Samples not frozen Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: 16 8 (<2 or >12 unless noted)

Adjusted? no

Checked by: CM 3/11/22

Labeled KRG 3/11/22

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.3	Good	Yes			
2	0.8	Good	Yes			
3	-0.8	Good	Yes			
4	-0.5	Good	Yes			
5	1.1	Good	Yes			

Released to Imaging: 4/21/2023 9:40:26 AM
Received by OCD: 4/21/2023 9:21:57 AM

Chain-of-Custody Record

Client: Marathon Gallup Refinery

Mailing Address: 92 Giant Crossing Road
Jamestown, NM,87347

Phone #: 808-640-1823

email or Fax#:

QA/QC Package:
X Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

X EDD (Type)

Turn-Around Time:
X Standard Rush

Project Name:
2022 GW Sampling 1st Quarter

Project #: **697-080-001**

Project Manager:
Lesli Alexander/Mackensie Swift

Sampler:

On Ice: ☒ Yes ☐ No

# of Coolers: (5)

Cooler Temp(including CF): See Remarks

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2203667	See Analyte List	8260B: VOC	8270C: SVOC	8270C SIM: PAH, 1,4 Dioxane	8015: TPH GRO/DRO/MRO	E200.7: Metals	E200.7: Dissolved Metals	E245.1 Mercury	E504.1: EDB	E335.4: Cyanide Subbed		537.1: PFAS	SM 5201B: BOD	410.4: COD	SM9223B E. Coli
3/10/2022	8:00	GW	EB 3-10-22	13		-001	X	X	X	X	X	X	X	X	X	X					
3/10/2022	8:00	GW	MKTF-46	13		-002	X	X	X	X	X	X	X	X	X	X					
3/10/2022	9:00	GW	MKTF-35	13		-003	X	X	X	X	X	X	X	X	X	X					
3/10/2022	9:30	GW	OW-57	13		-004	X	X	X	X	X	X	X	X	X	X					
3/10/2022	10:00	GW	OW-58	13		-005	X	X	X	X	X	X	X	X	X	X					
3/10/2022	10:30	GW	OW-58A	13		-006	X	X	X	X	X	X	X	X	X	X					
3/10/2022	9:30	GW	OW-63	15		-007	X	X	X	X	X	X	X	X	X	X		X			
3/10/2022	-	GW	DUP 3-10-22	13		-008	X	X	X	X	X	X	X	X	X	X					
3/10/2022	10:30	GW	FB 3-10-22	3		-009		X													
3/10/2022	9:30	water	PFAS - FB	1		-010	X	X	X	X	X	X	X	X	X	X		X			

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
3/10/22	13:00			Courier	3/11/22	0800
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

① 5.3°c ④ -0.5°c
② 0.8°c ⑤ 1.1°c
③ -0.8°c

Samples not Frozen
CF=0.0°c DAD 3-11-22

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

March 21, 2022

Brian McLoughlin
Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX:

RE: 2022 GW Sampling 1st Qtr OrderNo.: 2203670

Dear Brian McLoughlin:

Hall Environmental Analysis Laboratory received 2 sample(s) on 3/11/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order: **2203670**
Date Reported: **3/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-57
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022 9:30:00 AM
Lab ID: 2203670-001
Matrix: GROUNDWA
Received Date: 3/11/2022 8:00:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
SM 2540D: TSS							Analyst: **KS**	
Suspended Solids	29	4.0	4.0		mg/L	1	3/17/2022 7:22:00 AM	66210

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order: **2203670**
Date Reported: **3/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58A
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/10/2022 10:30:00 AM
Lab ID: 2203670-002
Matrix: GROUNDWA
Received Date: 3/11/2022 8:00:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
SM 2540D: TSS							Analyst: **KS**	
Suspended Solids	30	4.0	4.0		mg/L	1	3/17/2022 7:22:00 AM	66210

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203670**

21-Mar-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB-66210**	SampType: **MBLK**	TestCode: **SM 2540D: TSS**
Client ID: **PBW**	Batch ID: **66210**	RunNo: **86525**
Prep Date: **3/16/2022**	Analysis Date: **3/17/2022**	SeqNo: **3053365** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Suspended Solids	ND	4.0								

Sample ID: **LCS-66210**	SampType: **LCS**	TestCode: **SM 2540D: TSS**
Client ID: **LCSW**	Batch ID: **66210**	RunNo: **86525**
Prep Date: **3/16/2022**	Analysis Date: **3/17/2022**	SeqNo: **3053366** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Suspended Solids	92	4.0	92.40	0	99.6	83.44	119.05			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: **Marathon** Work Order Number: **2203670** RcptNo: 1

Received By: **Cheyenne Cason** **3/11/2022 8:00:00 AM**

Completed By: **Desiree Dominguez** **3/11/2022 9:13:08 AM**

Reviewed By: SGL 3/11/22

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☐	No ☑	NA ☐
	Samples not frozen		
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: (<2 or >12 unless noted)

Adjusted?

Checked by: CM 3/11/22

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: Date:

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.3	Good	Yes			
2	0.8	Good	Yes			
3	-0.8	Good	Yes			
4	-0.5	Good	Yes			
5	1.1	Good	Yes			

Released to Imaging: 4/21/2023 9:40:26 AM
Received by OCD: 4/21/2023 9:21:57 AM

Chain of Custody Record

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Client: Marathon Gallup Refinery	X Standard Rush_____
Mailing Address: 92 Giant Crossing Road, Jamestown, NM,87347	Project Name: **2022 GW Sampling 1st Quarter**
Phone #: 808-640-1823	Project #: **697-080-001**
email or Fax#:	Project Manager: James Hageman/Brian McLoughlin
QA/QC Package: X Standard ☐ Level 4 (Full Validation)	
Accreditation: ☐ Az Compliance ☐ NELAC ☐ Other_____	Sampler: Hilario / Brian
X EDD (Type) _____	On Ice: ☒ Yes ☐ No
	# of Coolers: 5
	Cooler Temp(including CF): See Remarks

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2203670	TSS
3-10	9:30		OW-57	14		-001	X
3-10	10:30		OW-58 A	14		-002	X

Date	Time:	Relinquished by:	Received by:	Via:	Date	Time
3/10/22	1:00	Hilario Trejo	Cam Cain		3/11/22	0800
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

5.3 - 0 = 5.3
0.8 - 0 = 0.8
-0.8 - 0 = -0.8
-0.5 - 0 = -0.5
1.1 - 0 = 1.1

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

March 28, 2022

Lesli Alexander

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX (505) 632-3911

RE: 2022 GW Sampling 1st Qtr OrderNo.: 2203825

Dear Lesli Alexander:

Hall Environmental Analysis Laboratory received 11 sample(s) on 3/16/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Case Narrative

WO#: **2203825**
Date: **3/28/2022**

CLIENT: Marathon
Project: 2022 GW Sampling 1st Qtr

Analytical Notes Regarding EPA Method 8270:
"S" flagged surrogates denote low surrogate recoveries due to matrix interferences/sample dilution.

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-15-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 8:30:00 AM
Lab ID: 2203825-001A
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	0.23	0.23	1.0	J	µg/L	1	3/19/2022 1:00:49 AM	R86601
Toluene	ND	0.20	1.0		µg/L	1	3/19/2022 1:00:49 AM	R86601
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/19/2022 1:00:49 AM	R86601
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/19/2022 1:00:49 AM	R86601
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/19/2022 1:00:49 AM	R86601
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/19/2022 1:00:49 AM	R86601
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	3/19/2022 1:00:49 AM	R86601
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/19/2022 1:00:49 AM	R86601
Acetone	ND	2.5	10		µg/L	1	3/19/2022 1:00:49 AM	R86601
Bromomethane	ND	0.85	3.0		µg/L	1	3/19/2022 1:00:49 AM	R86601
2-Butanone	7.3	2.0	10	J	µg/L	1	3/19/2022 1:00:49 AM	R86601
Carbon disulfide	ND	0.59	10		µg/L	1	3/19/2022 1:00:49 AM	R86601
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/19/2022 1:00:49 AM	R86601
Chloroform	ND	0.13	1.0		µg/L	1	3/19/2022 1:00:49 AM	R86601
Chloromethane	0.91	0.41	3.0	J	µg/L	1	3/19/2022 1:00:49 AM	R86601
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/19/2022 1:00:49 AM	R86601
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/19/2022 1:00:49 AM	R86601
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/19/2022 1:00:49 AM	R86601
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/19/2022 1:00:49 AM	R86601
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/19/2022 1:00:49 AM	R86601
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/19/2022 1:00:49 AM	R86601
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/19/2022 1:00:49 AM	R86601
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/19/2022 1:00:49 AM	R86601
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/19/2022 1:00:49 AM	R86601
Styrene	ND	0.14	1.0		µg/L	1	3/19/2022 1:00:49 AM	R86601
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/19/2022 1:00:49 AM	R86601
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/19/2022 1:00:49 AM	R86601
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/19/2022 1:00:49 AM	R86601
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/19/2022 1:00:49 AM	R86601
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/19/2022 1:00:49 AM	R86601
Surr: 1,2-Dichloroethane-d4	90.6	0	70-130		%Rec	1	3/19/2022 1:00:49 AM	R86601
Surr: 4-Bromofluorobenzene	96.6	0	70-130		%Rec	1	3/19/2022 1:00:49 AM	R86601
Surr: Dibromofluoromethane	94.9	0	70-130		%Rec	1	3/19/2022 1:00:49 AM	R86601
Surr: Toluene-d8	102	0	70-130		%Rec	1	3/19/2022 1:00:49 AM	R86601
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.037	0.012	0.050	J	mg/L	1	3/19/2022 1:00:49 AM	R86601
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	3/19/2022 1:00:49 AM	R86601

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-15-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 8:30:00 AM
Lab ID: 2203825-001B
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	3/21/2022 4:05:39 PM	66256

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-15-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 8:30:00 AM
Lab ID: 2203825-001C
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.026	0.016	0.064	J	mg/L	1	3/18/2022 4:29:41 PM	66219
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/18/2022 4:29:41 PM	66219
Surr: DNOP	101	0	42.2-138		%Rec	1	3/18/2022 4:29:41 PM	66219
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	1.1	20		µg/L	1	3/22/2022 12:03:15 PM	66226
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/22/2022 12:03:15 PM	66226
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/22/2022 12:03:15 PM	66226
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/22/2022 12:03:15 PM	66226
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/22/2022 12:03:15 PM	66226
Diethyl phthalate	ND	3.9	10		µg/L	1	3/22/2022 12:03:15 PM	66226
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/22/2022 12:03:15 PM	66226
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/22/2022 12:03:15 PM	66226
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/22/2022 12:03:15 PM	66226
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/22/2022 12:03:15 PM	66226
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/22/2022 12:03:15 PM	66226
Phenol	ND	0.33	5.0		µg/L	1	3/22/2022 12:03:15 PM	66226
Pyridine	ND	10	10		µg/L	1	3/22/2022 12:03:15 PM	66226
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/22/2022 12:03:15 PM	66226
Surr: 2-Fluorophenol	42.7	0	29.4-87.7		%Rec	1	3/22/2022 12:03:15 PM	66226
Surr: Phenol-d5	32.0	0	28.5-64.7		%Rec	1	3/22/2022 12:03:15 PM	66226
Surr: 2,4,6-Tribromophenol	50.8	0	18.6-129		%Rec	1	3/22/2022 12:03:15 PM	66226
Surr: Nitrobenzene-d5	53.8	0	36.9-103		%Rec	1	3/22/2022 12:03:15 PM	66226
Surr: 2-Fluorobiphenyl	54.8	0	38.1-99.9		%Rec	1	3/22/2022 12:03:15 PM	66226
Surr: 4-Terphenyl-d14	91.6	0	48-155		%Rec	1	3/22/2022 12:03:15 PM	66226
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.048	1.0		µg/L	1	3/21/2022 12:57:00 PM	R86628
Naphthalene	ND	0.034	0.10		µg/L	1	3/21/2022 12:57:00 PM	R86628
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/21/2022 12:57:00 PM	R86628
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/21/2022 12:57:00 PM	R86628
Acenaphthene	ND	0.031	0.10		µg/L	1	3/21/2022 12:57:00 PM	R86628
Fluorene	ND	0.031	0.10		µg/L	1	3/21/2022 12:57:00 PM	R86628
Phenanthrene	ND	0.057	0.10		µg/L	1	3/21/2022 12:57:00 PM	R86628
Anthracene	ND	0.034	0.10		µg/L	1	3/21/2022 12:57:00 PM	R86628
Fluoranthene	ND	0.10	0.20		µg/L	1	3/21/2022 12:57:00 PM	R86628
Pyrene	ND	0.16	0.40		µg/L	1	3/21/2022 12:57:00 PM	R86628
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/21/2022 12:57:00 PM	R86628
Chrysene	ND	0.024	0.10		µg/L	1	3/21/2022 12:57:00 PM	R86628
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/21/2022 12:57:00 PM	R86628
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/21/2022 12:57:00 PM	R86628

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-15-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 8:30:00 AM
Lab ID: 2203825-001C
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	56.6	0	31.6-100		%Rec	1	3/21/2022 12:57:00 PM	R86628
Surr: 2-Fluorobiphenyl	54.6	0	26.7-90.1		%Rec	1	3/21/2022 12:57:00 PM	R86628
Surr: 4-Terphenyl-d14	101	0	72.3-147		%Rec	1	3/21/2022 12:57:00 PM	R86628

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-15-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 8:30:00 AM
Lab ID: 2203825-001D
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **bcv**	
Cobalt	ND	0.00017	0.0010		mg/L	1	3/21/2022 1:26:19 PM	66254
Vanadium	ND	0.00058	0.0010		mg/L	1	3/21/2022 1:26:19 PM	66254
Antimony	ND	0.00044	0.0010		mg/L	1	3/21/2022 1:26:19 PM	66254
Arsenic	ND	0.00013	0.0010		mg/L	1	3/21/2022 1:26:19 PM	66254
Barium	ND	0.00046	0.0010		mg/L	1	3/21/2022 1:26:19 PM	66254
Beryllium	ND	0.00025	0.0010		mg/L	1	3/21/2022 1:26:19 PM	66254
Cadmium	ND	0.000080	0.00050		mg/L	1	3/21/2022 1:26:19 PM	66254
Chromium	ND	0.00056	0.0010		mg/L	1	3/21/2022 1:26:19 PM	66254
Lead	ND	0.000061	0.00050		mg/L	1	3/21/2022 1:26:19 PM	66254
Nickel	ND	0.00048	0.0010		mg/L	1	3/21/2022 1:26:19 PM	66254
Selenium	ND	0.00037	0.0010		mg/L	1	3/21/2022 1:26:19 PM	66254
Silver	ND	0.00022	0.00050		mg/L	1	3/21/2022 1:26:19 PM	66254
Zinc	ND	0.0038	0.010		mg/L	1	3/21/2022 1:26:19 PM	66254
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/21/2022 4:18:40 PM	66284

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-15-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 8:30:00 AM
Lab ID: 2203825-001E
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Cobalt	ND	0.0024	0.0060		mg/L	1	3/17/2022 9:16:12 AM	A86535
Silver	ND	0.0013	0.0050		mg/L	1	3/17/2022 9:16:12 AM	A86535
Vanadium	ND	0.0017	0.050		mg/L	1	3/17/2022 9:16:12 AM	A86535
Zinc	0.0063	0.0032	0.010	J	mg/L	1	3/17/2022 9:16:12 AM	A86535
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/21/2022 5:05:46 PM	A86624
Arsenic	ND	0.00012	0.0010		mg/L	1	3/18/2022 2:46:16 PM	B86600
Barium	0.00082	0.00046	0.0010	J	mg/L	1	3/18/2022 2:46:16 PM	B86600
Beryllium	ND	0.00020	0.0010		mg/L	1	3/18/2022 2:46:16 PM	B86600
Cadmium	ND	0.000066	0.00050		mg/L	1	3/18/2022 2:46:16 PM	B86600
Chromium	ND	0.00014	0.0010		mg/L	1	3/18/2022 2:46:16 PM	B86600
Lead	ND	0.000057	0.00050		mg/L	1	3/18/2022 2:46:16 PM	B86600
Nickel	ND	0.00048	0.0010		mg/L	1	3/18/2022 2:46:16 PM	B86600
Selenium	ND	0.00034	0.0010		mg/L	1	3/18/2022 2:46:16 PM	B86600
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/21/2022 4:20:49 PM	66284

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-1
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 9:00:00 AM
Lab ID: 2203825-002A
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	3/19/2022 1:29:19 AM	R86601
Toluene	ND	0.20	1.0		µg/L	1	3/19/2022 1:29:19 AM	R86601
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/19/2022 1:29:19 AM	R86601
Methyl tert-butyl ether (MTBE)	2.3	0.39	1.0		µg/L	1	3/19/2022 1:29:19 AM	R86601
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/19/2022 1:29:19 AM	R86601
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/19/2022 1:29:19 AM	R86601
1,2-Dichloroethane (EDC)	0.42	0.25	1.0	J	µg/L	1	3/19/2022 1:29:19 AM	R86601
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/19/2022 1:29:19 AM	R86601
Acetone	ND	2.5	10		µg/L	1	3/19/2022 1:29:19 AM	R86601
Bromomethane	ND	0.85	3.0		µg/L	1	3/19/2022 1:29:19 AM	R86601
2-Butanone	ND	2.0	10		µg/L	1	3/19/2022 1:29:19 AM	R86601
Carbon disulfide	ND	0.59	10		µg/L	1	3/19/2022 1:29:19 AM	R86601
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/19/2022 1:29:19 AM	R86601
Chloroform	ND	0.13	1.0		µg/L	1	3/19/2022 1:29:19 AM	R86601
Chloromethane	0.77	0.41	3.0	J	µg/L	1	3/19/2022 1:29:19 AM	R86601
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/19/2022 1:29:19 AM	R86601
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/19/2022 1:29:19 AM	R86601
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/19/2022 1:29:19 AM	R86601
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/19/2022 1:29:19 AM	R86601
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/19/2022 1:29:19 AM	R86601
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/19/2022 1:29:19 AM	R86601
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/19/2022 1:29:19 AM	R86601
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/19/2022 1:29:19 AM	R86601
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/19/2022 1:29:19 AM	R86601
Styrene	ND	0.14	1.0		µg/L	1	3/19/2022 1:29:19 AM	R86601
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/19/2022 1:29:19 AM	R86601
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/19/2022 1:29:19 AM	R86601
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/19/2022 1:29:19 AM	R86601
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/19/2022 1:29:19 AM	R86601
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/19/2022 1:29:19 AM	R86601
Surr: 1,2-Dichloroethane-d4	91.5	0	70-130		%Rec	1	3/19/2022 1:29:19 AM	R86601
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	3/19/2022 1:29:19 AM	R86601
Surr: Dibromofluoromethane	93.2	0	70-130		%Rec	1	3/19/2022 1:29:19 AM	R86601
Surr: Toluene-d8	104	0	70-130		%Rec	1	3/19/2022 1:29:19 AM	R86601
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.041	0.012	0.050	J	mg/L	1	3/19/2022 1:29:19 AM	R86601
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	3/19/2022 1:29:19 AM	R86601

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-1
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 9:00:00 AM
Lab ID: 2203825-002B
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0035	0.0095		µg/L	1	3/21/2022 4:20:47 PM	66256

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-1
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 9:00:00 AM
Lab ID: 2203825-002C
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.022	0.016	0.064	J	mg/L	1	3/18/2022 4:53:22 PM	66219
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/18/2022 4:53:22 PM	66219
Surr: DNOP	94.8	0	42.2-138		%Rec	1	3/18/2022 4:53:22 PM	66219
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	1.1	20		µg/L	1	3/22/2022 12:44:40 PM	66226
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/22/2022 12:44:40 PM	66226
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/22/2022 12:44:40 PM	66226
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/22/2022 12:44:40 PM	66226
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/22/2022 12:44:40 PM	66226
Diethyl phthalate	ND	3.9	10		µg/L	1	3/22/2022 12:44:40 PM	66226
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/22/2022 12:44:40 PM	66226
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/22/2022 12:44:40 PM	66226
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/22/2022 12:44:40 PM	66226
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/22/2022 12:44:40 PM	66226
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/22/2022 12:44:40 PM	66226
Phenol	ND	0.33	5.0		µg/L	1	3/22/2022 12:44:40 PM	66226
Pyridine	ND	10	10		µg/L	1	3/22/2022 12:44:40 PM	66226
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/22/2022 12:44:40 PM	66226
Surr: 2-Fluorophenol	38.4	0	29.4-87.7		%Rec	1	3/22/2022 12:44:40 PM	66226
Surr: Phenol-d5	29.2	0	28.5-64.7		%Rec	1	3/22/2022 12:44:40 PM	66226
Surr: 2,4,6-Tribromophenol	53.8	0	18.6-129		%Rec	1	3/22/2022 12:44:40 PM	66226
Surr: Nitrobenzene-d5	50.4	0	36.9-103		%Rec	1	3/22/2022 12:44:40 PM	66226
Surr: 2-Fluorobiphenyl	49.0	0	38.1-99.9		%Rec	1	3/22/2022 12:44:40 PM	66226
Surr: 4-Terphenyl-d14	95.2	0	48-155		%Rec	1	3/22/2022 12:44:40 PM	66226
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	0.20	0.048	1.0	J	µg/L	1	3/21/2022 1:42:00 PM	R86628
Naphthalene	0.14	0.034	0.10		µg/L	1	3/21/2022 1:42:00 PM	R86628
1-Methylnaphthalene	0.28	0.024	0.10		µg/L	1	3/21/2022 1:42:00 PM	R86628
2-Methylnaphthalene	0.40	0.034	0.10		µg/L	1	3/21/2022 1:42:00 PM	R86628
Acenaphthene	ND	0.031	0.10		µg/L	1	3/21/2022 1:42:00 PM	R86628
Fluorene	ND	0.031	0.10		µg/L	1	3/21/2022 1:42:00 PM	R86628
Phenanthrene	0.080	0.057	0.10	J	µg/L	1	3/21/2022 1:42:00 PM	R86628
Anthracene	ND	0.034	0.10		µg/L	1	3/21/2022 1:42:00 PM	R86628
Fluoranthene	ND	0.10	0.20		µg/L	1	3/21/2022 1:42:00 PM	R86628
Pyrene	0.24	0.16	0.40	J	µg/L	1	3/21/2022 1:42:00 PM	R86628
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/21/2022 1:42:00 PM	R86628
Chrysene	ND	0.024	0.10		µg/L	1	3/21/2022 1:42:00 PM	R86628
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/21/2022 1:42:00 PM	R86628
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/21/2022 1:42:00 PM	R86628

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-1
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 9:00:00 AM
Lab ID: 2203825-002C
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	54.0	0	31.6-100		%Rec	1	3/21/2022 1:42:00 PM	R86628
Surr: 2-Fluorobiphenyl	50.9	0	26.7-90.1		%Rec	1	3/21/2022 1:42:00 PM	R86628
Surr: 4-Terphenyl-d14	100	0	72.3-147		%Rec	1	3/21/2022 1:42:00 PM	R86628

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-1
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 9:00:00 AM
Lab ID: 2203825-002D
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **bcv**	
Cobalt	ND	0.00017	0.0010		mg/L	1	3/21/2022 1:33:38 PM	66254
Vanadium	0.044	0.0029	0.0050		mg/L	5	3/21/2022 2:27:23 PM	66254
Antimony	ND	0.00044	0.0010		mg/L	1	3/21/2022 1:33:38 PM	66254
Arsenic	0.00069	0.00013	0.0010	J	mg/L	1	3/21/2022 1:33:38 PM	66254
Barium	0.044	0.0023	0.0050		mg/L	5	3/21/2022 2:27:23 PM	66254
Beryllium	ND	0.00025	0.0010		mg/L	1	3/21/2022 1:33:38 PM	66254
Cadmium	ND	0.000080	0.00050		mg/L	1	3/21/2022 1:33:38 PM	66254
Chromium	0.0031	0.00056	0.0010		mg/L	1	3/21/2022 1:33:38 PM	66254
Lead	0.00020	0.000061	0.00050	J	mg/L	1	3/21/2022 1:33:38 PM	66254
Nickel	0.0021	0.00048	0.0010		mg/L	1	3/21/2022 1:33:38 PM	66254
Selenium	0.0027	0.00037	0.0010		mg/L	1	3/21/2022 1:33:38 PM	66254
Silver	ND	0.00022	0.00050		mg/L	1	3/21/2022 1:33:38 PM	66254
Zinc	ND	0.0038	0.010		mg/L	1	3/21/2022 1:33:38 PM	66254
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/21/2022 4:22:59 PM	66284

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-1
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 9:00:00 AM
Lab ID: 2203825-002E
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Cobalt	ND	0.0024	0.0060		mg/L	1	3/17/2022 9:25:52 AM	A86535
Silver	ND	0.0013	0.0050		mg/L	1	3/17/2022 9:25:52 AM	A86535
Vanadium	0.041	0.0017	0.050	J	mg/L	1	3/17/2022 9:25:52 AM	A86535
Zinc	0.0094	0.0032	0.010	J	mg/L	1	3/17/2022 9:25:52 AM	A86535
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/21/2022 5:08:27 PM	A86624
Arsenic	0.00052	0.00012	0.0010	J	mg/L	1	3/18/2022 2:48:57 PM	B86600
Barium	0.046	0.00046	0.0010		mg/L	1	3/18/2022 2:48:57 PM	B86600
Beryllium	ND	0.00020	0.0010		mg/L	1	3/18/2022 2:48:57 PM	B86600
Cadmium	ND	0.000066	0.00050		mg/L	1	3/18/2022 2:48:57 PM	B86600
Chromium	0.00052	0.00014	0.0010	J	mg/L	1	3/18/2022 2:48:57 PM	B86600
Lead	0.000077	0.000057	0.00050	J	mg/L	1	3/18/2022 2:48:57 PM	B86600
Nickel	0.00052	0.00048	0.0010	J	mg/L	1	3/18/2022 2:48:57 PM	B86600
Selenium	0.0027	0.00034	0.0010		mg/L	1	3/18/2022 2:48:57 PM	B86600
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00036	0.000091	0.00020		mg/L	1	3/21/2022 4:25:09 PM	66284

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-17R
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 10:00:00 AM
Lab ID: 2203825-003A
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	4500	23	100		µg/L	100	3/19/2022 3:51:42 AM	R86601
Toluene	22000	200	1000		µg/L	1E+	3/21/2022 1:20:31 PM	R86626
Ethylbenzene	1400	21	100		µg/L	100	3/19/2022 3:51:42 AM	R86601
Methyl tert-butyl ether (MTBE)	4800	39	100		µg/L	100	3/19/2022 3:51:42 AM	R86601
1,2,4-Trimethylbenzene	830	1.2	10		µg/L	10	3/19/2022 4:20:08 AM	R86601
1,3,5-Trimethylbenzene	210	1.8	10		µg/L	10	3/19/2022 4:20:08 AM	R86601
1,2-Dichloroethane (EDC)	4.2	2.5	10	J	µg/L	10	3/19/2022 4:20:08 AM	R86601
1,2-Dibromoethane (EDB)	ND	3.0	10		µg/L	10	3/19/2022 4:20:08 AM	R86601
Acetone	ND	25	100		µg/L	10	3/19/2022 4:20:08 AM	R86601
Bromomethane	ND	8.5	30		µg/L	10	3/19/2022 4:20:08 AM	R86601
2-Butanone	ND	20	100		µg/L	10	3/19/2022 4:20:08 AM	R86601
Carbon disulfide	ND	5.9	100		µg/L	10	3/19/2022 4:20:08 AM	R86601
Chlorobenzene	ND	1.6	10		µg/L	10	3/19/2022 4:20:08 AM	R86601
Chloroform	7.2	1.3	10	J	µg/L	10	3/19/2022 4:20:08 AM	R86601
Chloromethane	ND	4.1	30		µg/L	10	3/19/2022 4:20:08 AM	R86601
cis-1,2-DCE	ND	3.9	10		µg/L	10	3/19/2022 4:20:08 AM	R86601
1,1-Dichloroethane	7.5	2.7	10	J	µg/L	10	3/19/2022 4:20:08 AM	R86601
1,1-Dichloroethene	ND	2.0	10		µg/L	10	3/19/2022 4:20:08 AM	R86601
Isopropylbenzene	55	1.8	10		µg/L	10	3/19/2022 4:20:08 AM	R86601
4-Isopropyltoluene	5.0	2.0	10	J	µg/L	10	3/19/2022 4:20:08 AM	R86601
Methylene Chloride	ND	5.0	30		µg/L	10	3/19/2022 4:20:08 AM	R86601
n-Butylbenzene	16	2.5	30	J	µg/L	10	3/19/2022 4:20:08 AM	R86601
n-Propylbenzene	140	1.8	10		µg/L	10	3/19/2022 4:20:08 AM	R86601
sec-Butylbenzene	5.5	1.4	10	J	µg/L	10	3/19/2022 4:20:08 AM	R86601
Styrene	2.6	1.4	10	J	µg/L	10	3/19/2022 4:20:08 AM	R86601
Tetrachloroethene (PCE)	ND	3.6	10		µg/L	10	3/19/2022 4:20:08 AM	R86601
1,1,1-Trichloroethane	ND	3.0	10		µg/L	10	3/19/2022 4:20:08 AM	R86601
Trichloroethene (TCE)	ND	2.0	10		µg/L	10	3/19/2022 4:20:08 AM	R86601
Vinyl chloride	4.4	3.2	10	J	µg/L	10	3/19/2022 4:20:08 AM	R86601
Xylenes, Total	6800	37	150		µg/L	100	3/19/2022 3:51:42 AM	R86601
Surr: 1,2-Dichloroethane-d4	90.9	0	70-130		%Rec	10	3/19/2022 4:20:08 AM	R86601
Surr: 4-Bromofluorobenzene	93.1	0	70-130		%Rec	10	3/19/2022 4:20:08 AM	R86601
Surr: Dibromofluoromethane	87.3	0	70-130		%Rec	10	3/19/2022 4:20:08 AM	R86601
Surr: Toluene-d8	102	0	70-130		%Rec	10	3/19/2022 4:20:08 AM	R86601
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	78	0.12	0.50		mg/L	10	3/19/2022 4:20:08 AM	R86601
Surr: 4-Bromofluorobenzene	96.2	0	70-130		%Rec	10	3/19/2022 4:20:08 AM	R86601

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Estimated value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-17R
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 10:00:00 AM
Lab ID: 2203825-003B
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	3/21/2022 4:35:55 PM	66256

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-17R
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 10:00:00 AM
Lab ID: 2203825-003C
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	7.0	0.16	0.64		mg/L	10	3/21/2022 2:17:33 PM	66219
Motor Oil Range Organics (MRO)	ND	0.52	0.80	D	mg/L	10	3/21/2022 2:17:33 PM	66219
Surr: DNOP	0	0	42.2-138	S	%Rec	10	3/21/2022 2:17:33 PM	66219
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	1.1	20		µg/L	1	3/22/2022 1:25:55 PM	66226
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/22/2022 1:25:55 PM	66226
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/22/2022 1:25:55 PM	66226
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/22/2022 1:25:55 PM	66226
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/22/2022 1:25:55 PM	66226
Diethyl phthalate	ND	3.9	10		µg/L	1	3/22/2022 1:25:55 PM	66226
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/22/2022 1:25:55 PM	66226
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/22/2022 1:25:55 PM	66226
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/22/2022 1:25:55 PM	66226
1-Methylnaphthalene	28	0.60	5.0		µg/L	1	3/22/2022 1:25:55 PM	66226
2-Methylnaphthalene	38	0.41	5.0		µg/L	1	3/22/2022 1:25:55 PM	66226
2-Methylphenol	20	0.51	5.0		µg/L	1	3/22/2022 1:25:55 PM	66226
3+4-Methylphenol	11	0.45	5.0		µg/L	1	3/22/2022 1:25:55 PM	66226
Naphthalene	ND	2.2	5.0		µg/L	1	3/22/2022 1:25:55 PM	66226
Phenol	7.5	0.33	5.0		µg/L	1	3/22/2022 1:25:55 PM	66226
Pyridine	ND	10	10		µg/L	1	3/22/2022 1:25:55 PM	66226
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/22/2022 1:25:55 PM	66226
Surr: 2-Fluorophenol	0	0	29.4-87.7	S	%Rec	1	3/22/2022 1:25:55 PM	66226
Surr: Phenol-d5	27.3	0	28.5-64.7	S	%Rec	1	3/22/2022 1:25:55 PM	66226
Surr: 2,4,6-Tribromophenol	66.0	0	18.6-129		%Rec	1	3/22/2022 1:25:55 PM	66226
Surr: Nitrobenzene-d5	47.0	0	36.9-103		%Rec	1	3/22/2022 1:25:55 PM	66226
Surr: 2-Fluorobiphenyl	44.1	0	38.1-99.9		%Rec	1	3/22/2022 1:25:55 PM	66226
Surr: 4-Terphenyl-d14	75.0	0	48-155		%Rec	1	3/22/2022 1:25:55 PM	66226
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	4.0	0.048	1.0		µg/L	1	3/21/2022 2:27:00 PM	R86628
Acenaphthene	1.4	0.031	0.10		µg/L	1	3/21/2022 2:27:00 PM	R86628
Fluorene	3.3	0.031	0.10		µg/L	1	3/21/2022 2:27:00 PM	R86628
Phenanthrene	3.3	0.057	0.10		µg/L	1	3/21/2022 2:27:00 PM	R86628
Anthracene	0.52	0.034	0.10		µg/L	1	3/21/2022 2:27:00 PM	R86628
Fluoranthene	0.24	0.10	0.20		µg/L	1	3/21/2022 2:27:00 PM	R86628
Pyrene	0.42	0.16	0.40		µg/L	1	3/21/2022 2:27:00 PM	R86628
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/21/2022 2:27:00 PM	R86628
Chrysene	ND	0.024	0.10		µg/L	1	3/21/2022 2:27:00 PM	R86628
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/21/2022 2:27:00 PM	R86628
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/21/2022 2:27:00 PM	R86628

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Estimated value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-17R
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 10:00:00 AM
Lab ID: 2203825-003C
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	51.0	0	31.6-100		%Rec	1	3/21/2022 2:27:00 PM	R86628
Surr: 2-Fluorobiphenyl	47.0	0	26.7-90.1		%Rec	1	3/21/2022 2:27:00 PM	R86628
Surr: 4-Terphenyl-d14	76.2	0	72.3-147		%Rec	1	3/21/2022 2:27:00 PM	R86628

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-17R
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 10:00:00 AM
Lab ID: 2203825-003D
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **bcv**	
Cobalt	0.0023	0.00017	0.0010		mg/L	1	3/21/2022 1:38:31 PM	66254
Vanadium	0.0062	0.00058	0.0010		mg/L	1	3/21/2022 1:38:31 PM	66254
Antimony	ND	0.00044	0.0010		mg/L	1	3/21/2022 1:38:31 PM	66254
Arsenic	0.0045	0.00013	0.0010		mg/L	1	3/21/2022 1:38:31 PM	66254
Barium	0.45	0.0092	0.020		mg/L	20	3/21/2022 2:32:15 PM	66254
Beryllium	ND	0.00025	0.0010		mg/L	1	3/21/2022 1:38:31 PM	66254
Cadmium	ND	0.000080	0.00050		mg/L	1	3/21/2022 1:38:31 PM	66254
Chromium	0.0031	0.00056	0.0010		mg/L	1	3/21/2022 1:38:31 PM	66254
Lead	0.0021	0.000061	0.00050		mg/L	1	3/21/2022 1:38:31 PM	66254
Nickel	0.0076	0.00048	0.0010		mg/L	1	3/21/2022 1:38:31 PM	66254
Selenium	ND	0.00037	0.0010		mg/L	1	3/21/2022 1:38:31 PM	66254
Silver	ND	0.00022	0.00050		mg/L	1	3/21/2022 1:38:31 PM	66254
Zinc	0.049	0.0038	0.010		mg/L	1	3/21/2022 1:38:31 PM	66254
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/21/2022 4:27:19 PM	66284

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-17R
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 10:00:00 AM
Lab ID: 2203825-003E
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Cobalt	0.0033	0.0024	0.0060	J	mg/L	1	3/17/2022 9:29:12 AM	A86535
Silver	ND	0.0013	0.0050		mg/L	1	3/17/2022 9:29:12 AM	A86535
Vanadium	ND	0.0017	0.050		mg/L	1	3/17/2022 9:29:12 AM	A86535
Zinc	0.033	0.0032	0.010		mg/L	1	3/17/2022 9:29:12 AM	A86535
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/21/2022 5:11:09 PM	A86624
Arsenic	0.0037	0.00012	0.0010		mg/L	1	3/18/2022 2:57:02 PM	B86600
Barium	0.45	0.0046	0.010		mg/L	10	3/18/2022 3:47:45 PM	B86600
Beryllium	ND	0.00020	0.0010		mg/L	1	3/18/2022 2:57:02 PM	B86600
Cadmium	ND	0.000066	0.00050		mg/L	1	3/18/2022 2:57:02 PM	B86600
Chromium	0.00023	0.00014	0.0010	J	mg/L	1	3/18/2022 2:57:02 PM	B86600
Lead	0.00024	0.000057	0.00050	J	mg/L	1	3/18/2022 2:57:02 PM	B86600
Nickel	0.0057	0.00048	0.0010		mg/L	1	3/18/2022 2:57:02 PM	B86600
Selenium	ND	0.00034	0.0010		mg/L	1	3/18/2022 2:57:02 PM	B86600
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/21/2022 4:29:27 PM	66284

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18R
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 10:20:00 AM
Lab ID: 2203825-004A
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	1800	23	100		µg/L	100	3/19/2022 4:48:32 AM	R86601
Toluene	630	2.0	10		µg/L	10	3/19/2022 5:16:54 AM	R86601
Ethylbenzene	42	2.1	10		µg/L	10	3/19/2022 5:16:54 AM	R86601
Methyl tert-butyl ether (MTBE)	110	3.9	10		µg/L	10	3/19/2022 5:16:54 AM	R86601
1,2,4-Trimethylbenzene	38	1.2	10		µg/L	10	3/19/2022 5:16:54 AM	R86601
1,3,5-Trimethylbenzene	12	1.8	10		µg/L	10	3/19/2022 5:16:54 AM	R86601
1,2-Dichloroethane (EDC)	ND	2.5	10		µg/L	10	3/19/2022 5:16:54 AM	R86601
1,2-Dibromoethane (EDB)	ND	3.0	10		µg/L	10	3/19/2022 5:16:54 AM	R86601
Acetone	ND	25	100		µg/L	10	3/19/2022 5:16:54 AM	R86601
Bromomethane	ND	8.5	30		µg/L	10	3/19/2022 5:16:54 AM	R86601
2-Butanone	ND	20	100		µg/L	10	3/19/2022 5:16:54 AM	R86601
Carbon disulfide	ND	5.9	100		µg/L	10	3/19/2022 5:16:54 AM	R86601
Chlorobenzene	ND	1.6	10		µg/L	10	3/19/2022 5:16:54 AM	R86601
Chloroform	1.9	1.3	10	J	µg/L	10	3/19/2022 5:16:54 AM	R86601
Chloromethane	ND	4.1	30		µg/L	10	3/19/2022 5:16:54 AM	R86601
cis-1,2-DCE	4.6	3.9	10	J	µg/L	10	3/19/2022 5:16:54 AM	R86601
1,1-Dichloroethane	ND	2.7	10		µg/L	10	3/19/2022 5:16:54 AM	R86601
1,1-Dichloroethene	ND	2.0	10		µg/L	10	3/19/2022 5:16:54 AM	R86601
Isopropylbenzene	4.4	1.8	10	J	µg/L	10	3/19/2022 5:16:54 AM	R86601
4-Isopropyltoluene	2.2	2.0	10	J	µg/L	10	3/19/2022 5:16:54 AM	R86601
Methylene Chloride	ND	5.0	30		µg/L	10	3/19/2022 5:16:54 AM	R86601
n-Butylbenzene	3.5	2.5	30	J	µg/L	10	3/19/2022 5:16:54 AM	R86601
n-Propylbenzene	6.6	1.8	10	J	µg/L	10	3/19/2022 5:16:54 AM	R86601
sec-Butylbenzene	1.7	1.4	10	J	µg/L	10	3/19/2022 5:16:54 AM	R86601
Styrene	ND	1.4	10		µg/L	10	3/19/2022 5:16:54 AM	R86601
Tetrachloroethene (PCE)	ND	3.6	10		µg/L	10	3/19/2022 5:16:54 AM	R86601
1,1,1-Trichloroethane	ND	3.0	10		µg/L	10	3/19/2022 5:16:54 AM	R86601
Trichloroethene (TCE)	ND	2.0	10		µg/L	10	3/19/2022 5:16:54 AM	R86601
Vinyl chloride	ND	3.2	10		µg/L	10	3/19/2022 5:16:54 AM	R86601
Xylenes, Total	300	3.7	15		µg/L	10	3/19/2022 5:16:54 AM	R86601
Surr: 1,2-Dichloroethane-d4	91.7	0	70-130		%Rec	10	3/19/2022 5:16:54 AM	R86601
Surr: 4-Bromofluorobenzene	94.3	0	70-130		%Rec	10	3/19/2022 5:16:54 AM	R86601
Surr: Dibromofluoromethane	91.4	0	70-130		%Rec	10	3/19/2022 5:16:54 AM	R86601
Surr: Toluene-d8	101	0	70-130		%Rec	10	3/19/2022 5:16:54 AM	R86601
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	7.2	0.12	0.50		mg/L	10	3/19/2022 5:16:54 AM	R86601
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	10	3/19/2022 5:16:54 AM	R86601

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18R
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 10:20:00 AM
Lab ID: 2203825-004B
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	3/21/2022 4:51:05 PM	66256

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18R
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 10:20:00 AM
Lab ID: 2203825-004C
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	4.0	0.16	0.64		mg/L	10	3/21/2022 2:41:08 PM	66219
Motor Oil Range Organics (MRO)	ND	0.52	0.80	D	mg/L	10	3/21/2022 2:41:08 PM	66219
Surr: DNOP	0	0	42.2-138	S	%Rec	10	3/21/2022 2:41:08 PM	66219
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	1.1	20		µg/L	1	3/22/2022 2:07:23 PM	66226
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/22/2022 2:07:23 PM	66226
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/22/2022 2:07:23 PM	66226
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/22/2022 2:07:23 PM	66226
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/22/2022 2:07:23 PM	66226
Diethyl phthalate	ND	3.9	10		µg/L	1	3/22/2022 2:07:23 PM	66226
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/22/2022 2:07:23 PM	66226
2,4-Dimethylphenol	2.7	0.97	5.0	J	µg/L	1	3/22/2022 2:07:23 PM	66226
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/22/2022 2:07:23 PM	66226
1-Methylnaphthalene	110	0.60	5.0		µg/L	1	3/22/2022 2:07:23 PM	66226
2-Methylnaphthalene	140	0.41	5.0		µg/L	1	3/22/2022 2:07:23 PM	66226
2-Methylphenol	4.4	0.51	5.0	J	µg/L	1	3/22/2022 2:07:23 PM	66226
3+4-Methylphenol	3.5	0.45	5.0	J	µg/L	1	3/22/2022 2:07:23 PM	66226
Naphthalene	ND	2.2	5.0		µg/L	1	3/22/2022 2:07:23 PM	66226
Phenol	12	0.33	5.0		µg/L	1	3/22/2022 2:07:23 PM	66226
Pyridine	ND	10	10		µg/L	1	3/22/2022 2:07:23 PM	66226
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/22/2022 2:07:23 PM	66226
Surr: 2-Fluorophenol	53.9	0	29.4-87.7		%Rec	1	3/22/2022 2:07:23 PM	66226
Surr: Phenol-d5	39.3	0	28.5-64.7		%Rec	1	3/22/2022 2:07:23 PM	66226
Surr: 2,4,6-Tribromophenol	72.1	0	18.6-129		%Rec	1	3/22/2022 2:07:23 PM	66226
Surr: Nitrobenzene-d5	62.7	0	36.9-103		%Rec	1	3/22/2022 2:07:23 PM	66226
Surr: 2-Fluorobiphenyl	61.2	0	38.1-99.9		%Rec	1	3/22/2022 2:07:23 PM	66226
Surr: 4-Terphenyl-d14	88.5	0	48-155		%Rec	1	3/22/2022 2:07:23 PM	66226
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	9.6	0.048	1.0		µg/L	1	3/21/2022 3:11:00 PM	R86628
Acenaphthene	7.1	0.031	0.10		µg/L	1	3/21/2022 3:11:00 PM	R86628
Fluorene	8.5	0.031	0.10		µg/L	1	3/21/2022 3:11:00 PM	R86628
Phenanthrene	6.7	0.057	0.10		µg/L	1	3/21/2022 3:11:00 PM	R86628
Anthracene	0.40	0.034	0.10		µg/L	1	3/21/2022 3:11:00 PM	R86628
Fluoranthene	ND	0.10	0.20		µg/L	1	3/21/2022 3:11:00 PM	R86628
Pyrene	ND	0.16	0.40		µg/L	1	3/21/2022 3:11:00 PM	R86628
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/21/2022 3:11:00 PM	R86628
Chrysene	ND	0.024	0.10		µg/L	1	3/21/2022 3:11:00 PM	R86628
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/21/2022 3:11:00 PM	R86628
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/21/2022 3:11:00 PM	R86628

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18R
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 10:20:00 AM
Lab ID: 2203825-004C
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	69.1	0	31.6-100		%Rec	1	3/21/2022 3:11:00 PM	R86628
Surr: 2-Fluorobiphenyl	63.0	0	26.7-90.1		%Rec	1	3/21/2022 3:11:00 PM	R86628
Surr: 4-Terphenyl-d14	80.9	0	72.3-147		%Rec	1	3/21/2022 3:11:00 PM	R86628

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18R
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 10:20:00 AM
Lab ID: 2203825-004D
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **bcv**	
Cobalt	0.0048	0.00017	0.0010		mg/L	1	3/21/2022 1:40:58 PM	66254
Vanadium	0.010	0.00058	0.0010		mg/L	1	3/21/2022 1:40:58 PM	66254
Antimony	ND	0.00044	0.0010		mg/L	1	3/21/2022 1:40:58 PM	66254
Arsenic	0.0070	0.00013	0.0010		mg/L	1	3/21/2022 1:40:58 PM	66254
Barium	1.7	0.023	0.050		mg/L	50	3/21/2022 2:34:42 PM	66254
Beryllium	0.00042	0.00025	0.0010	J	mg/L	1	3/21/2022 1:40:58 PM	66254
Cadmium	ND	0.000080	0.00050		mg/L	1	3/21/2022 1:40:58 PM	66254
Chromium	0.0068	0.00056	0.0010		mg/L	1	3/21/2022 1:40:58 PM	66254
Lead	0.0043	0.000061	0.00050		mg/L	1	3/21/2022 1:40:58 PM	66254
Nickel	0.010	0.00048	0.0010		mg/L	1	3/21/2022 1:40:58 PM	66254
Selenium	0.00087	0.00037	0.0010	J	mg/L	1	3/21/2022 1:40:58 PM	66254
Silver	ND	0.00022	0.00050		mg/L	1	3/21/2022 1:40:58 PM	66254
Zinc	0.0093	0.0038	0.010	J	mg/L	1	3/21/2022 1:40:58 PM	66254
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/21/2022 4:35:51 PM	66284

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18R
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 10:20:00 AM
Lab ID: 2203825-004E
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Cobalt	0.0032	0.0024	0.0060	J	mg/L	1	3/17/2022 9:32:31 AM	A86535
Silver	ND	0.0013	0.0050		mg/L	1	3/17/2022 9:32:31 AM	A86535
Vanadium	ND	0.0017	0.050		mg/L	1	3/17/2022 9:32:31 AM	A86535
Zinc	0.010	0.0032	0.010		mg/L	1	3/17/2022 9:32:31 AM	A86535
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/21/2022 5:19:15 PM	A86624
Arsenic	0.0056	0.00012	0.0010		mg/L	1	3/18/2022 2:59:43 PM	B86600
Barium	1.7	0.023	0.050		mg/L	50	3/18/2022 3:50:26 PM	B86600
Beryllium	ND	0.00020	0.0010		mg/L	1	3/18/2022 2:59:43 PM	B86600
Cadmium	ND	0.000066	0.00050		mg/L	1	3/18/2022 2:59:43 PM	B86600
Chromium	0.00025	0.00014	0.0010	J	mg/L	1	3/18/2022 2:59:43 PM	B86600
Lead	ND	0.000057	0.00050		mg/L	1	3/18/2022 2:59:43 PM	B86600
Nickel	0.0059	0.00048	0.0010		mg/L	1	3/18/2022 2:59:43 PM	B86600
Selenium	ND	0.00034	0.0010		mg/L	1	3/18/2022 2:59:43 PM	B86600
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/21/2022 4:38:00 PM	66284

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 10:45:00 AM
Lab ID: 2203825-005A
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	0.49	0.23	1.0	J	µg/L	1	3/19/2022 5:45:16 AM	R86601
Toluene	0.80	0.20	1.0	J	µg/L	1	3/19/2022 5:45:16 AM	R86601
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/19/2022 5:45:16 AM	R86601
Methyl tert-butyl ether (MTBE)	1.4	0.39	1.0		µg/L	1	3/19/2022 5:45:16 AM	R86601
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/19/2022 5:45:16 AM	R86601
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/19/2022 5:45:16 AM	R86601
1,2-Dichloroethane (EDC)	0.41	0.25	1.0	J	µg/L	1	3/19/2022 5:45:16 AM	R86601
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/19/2022 5:45:16 AM	R86601
Acetone	ND	2.5	10		µg/L	1	3/19/2022 5:45:16 AM	R86601
Bromomethane	ND	0.85	3.0		µg/L	1	3/19/2022 5:45:16 AM	R86601
2-Butanone	ND	2.0	10		µg/L	1	3/19/2022 5:45:16 AM	R86601
Carbon disulfide	ND	0.59	10		µg/L	1	3/19/2022 5:45:16 AM	R86601
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/19/2022 5:45:16 AM	R86601
Chloroform	ND	0.13	1.0		µg/L	1	3/19/2022 5:45:16 AM	R86601
Chloromethane	0.78	0.41	3.0	J	µg/L	1	3/19/2022 5:45:16 AM	R86601
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/19/2022 5:45:16 AM	R86601
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/19/2022 5:45:16 AM	R86601
1,1-Dichloroethene	0.61	0.20	1.0	J	µg/L	1	3/19/2022 5:45:16 AM	R86601
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/19/2022 5:45:16 AM	R86601
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/19/2022 5:45:16 AM	R86601
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/19/2022 5:45:16 AM	R86601
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/19/2022 5:45:16 AM	R86601
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/19/2022 5:45:16 AM	R86601
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/19/2022 5:45:16 AM	R86601
Styrene	ND	0.14	1.0		µg/L	1	3/19/2022 5:45:16 AM	R86601
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/19/2022 5:45:16 AM	R86601
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/19/2022 5:45:16 AM	R86601
Trichloroethene (TCE)	0.57	0.20	1.0	J	µg/L	1	3/19/2022 5:45:16 AM	R86601
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/19/2022 5:45:16 AM	R86601
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/19/2022 5:45:16 AM	R86601
Surr: 1,2-Dichloroethane-d4	89.2	0	70-130		%Rec	1	3/19/2022 5:45:16 AM	R86601
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	3/19/2022 5:45:16 AM	R86601
Surr: Dibromofluoromethane	88.4	0	70-130		%Rec	1	3/19/2022 5:45:16 AM	R86601
Surr: Toluene-d8	103	0	70-130		%Rec	1	3/19/2022 5:45:16 AM	R86601
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.047	0.012	0.050	J	mg/L	1	3/19/2022 5:45:16 AM	R86601
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	3/19/2022 5:45:16 AM	R86601

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 10:45:00 AM
Lab ID: 2203825-005B
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	3/21/2022 5:06:09 PM	66256

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 10:45:00 AM
Lab ID: 2203825-005C
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.11	0.016	0.064		mg/L	1	3/18/2022 6:04:37 PM	66219
Motor Oil Range Organics (MRO)	0.066	0.052	0.080	J	mg/L	1	3/18/2022 6:04:37 PM	66219
Surr: DNOP	99.3	0	42.2-138		%Rec	1	3/18/2022 6:04:37 PM	66219
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	1.1	20		µg/L	1	3/22/2022 2:48:37 PM	66226
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/22/2022 2:48:37 PM	66226
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/22/2022 2:48:37 PM	66226
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/22/2022 2:48:37 PM	66226
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/22/2022 2:48:37 PM	66226
Diethyl phthalate	ND	3.9	10		µg/L	1	3/22/2022 2:48:37 PM	66226
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/22/2022 2:48:37 PM	66226
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/22/2022 2:48:37 PM	66226
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/22/2022 2:48:37 PM	66226
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/22/2022 2:48:37 PM	66226
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/22/2022 2:48:37 PM	66226
Phenol	ND	0.33	5.0		µg/L	1	3/22/2022 2:48:37 PM	66226
Pyridine	ND	10	10		µg/L	1	3/22/2022 2:48:37 PM	66226
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/22/2022 2:48:37 PM	66226
Surr: 2-Fluorophenol	41.5	0	29.4-87.7		%Rec	1	3/22/2022 2:48:37 PM	66226
Surr: Phenol-d5	31.8	0	28.5-64.7		%Rec	1	3/22/2022 2:48:37 PM	66226
Surr: 2,4,6-Tribromophenol	33.8	0	18.6-129		%Rec	1	3/22/2022 2:48:37 PM	66226
Surr: Nitrobenzene-d5	54.8	0	36.9-103		%Rec	1	3/22/2022 2:48:37 PM	66226
Surr: 2-Fluorobiphenyl	54.2	0	38.1-99.9		%Rec	1	3/22/2022 2:48:37 PM	66226
Surr: 4-Terphenyl-d14	73.6	0	48-155		%Rec	1	3/22/2022 2:48:37 PM	66226
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	2.6	0.048	1.0		µg/L	1	3/21/2022 3:56:00 PM	R86628
Naphthalene	0.10	0.034	0.10		µg/L	1	3/21/2022 3:56:00 PM	R86628
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/21/2022 3:56:00 PM	R86628
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/21/2022 3:56:00 PM	R86628
Acenaphthene	ND	0.031	0.10		µg/L	1	3/21/2022 3:56:00 PM	R86628
Fluorene	ND	0.031	0.10		µg/L	1	3/21/2022 3:56:00 PM	R86628
Phenanthrene	ND	0.057	0.10		µg/L	1	3/21/2022 3:56:00 PM	R86628
Anthracene	ND	0.034	0.10		µg/L	1	3/21/2022 3:56:00 PM	R86628
Fluoranthene	ND	0.10	0.20		µg/L	1	3/21/2022 3:56:00 PM	R86628
Pyrene	0.16	0.16	0.40	J	µg/L	1	3/21/2022 3:56:00 PM	R86628
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/21/2022 3:56:00 PM	R86628
Chrysene	ND	0.024	0.10		µg/L	1	3/21/2022 3:56:00 PM	R86628
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/21/2022 3:56:00 PM	R86628
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/21/2022 3:56:00 PM	R86628

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 10:45:00 AM
Lab ID: 2203825-005C
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	61.7	0	31.6-100		%Rec	1	3/21/2022 3:56:00 PM	R86628
Surr: 2-Fluorobiphenyl	56.3	0	26.7-90.1		%Rec	1	3/21/2022 3:56:00 PM	R86628
Surr: 4-Terphenyl-d14	87.1	0	72.3-147		%Rec	1	3/21/2022 3:56:00 PM	R86628

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 10:45:00 AM
Lab ID: 2203825-005D
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **bcv**	
Cobalt	0.010	0.00017	0.0010		mg/L	1	3/21/2022 1:43:24 PM	66254
Vanadium	0.030	0.00058	0.0010		mg/L	1	3/21/2022 1:43:24 PM	66254
Antimony	ND	0.00044	0.0010		mg/L	1	3/21/2022 1:43:24 PM	66254
Arsenic	0.0047	0.00013	0.0010		mg/L	1	3/21/2022 1:43:24 PM	66254
Barium	0.71	0.0092	0.020		mg/L	20	3/21/2022 2:37:08 PM	66254
Beryllium	0.0011	0.00025	0.0010		mg/L	1	3/21/2022 1:43:24 PM	66254
Cadmium	0.00010	0.000080	0.00050	J	mg/L	1	3/21/2022 1:43:24 PM	66254
Chromium	0.014	0.00056	0.0010		mg/L	1	3/21/2022 1:43:24 PM	66254
Lead	0.011	0.000061	0.00050		mg/L	1	3/21/2022 1:43:24 PM	66254
Nickel	0.016	0.00048	0.0010		mg/L	1	3/21/2022 1:43:24 PM	66254
Selenium	0.0037	0.00037	0.0010		mg/L	1	3/21/2022 1:43:24 PM	66254
Silver	ND	0.00022	0.00050		mg/L	1	3/21/2022 1:43:24 PM	66254
Zinc	0.029	0.0038	0.010		mg/L	1	3/21/2022 1:43:24 PM	66254
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/21/2022 4:40:08 PM	66284

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 10:45:00 AM
Lab ID: 2203825-005E
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Cobalt	0.0038	0.0024	0.0060	J	mg/L	1	3/17/2022 9:35:19 AM	A86535
Silver	ND	0.0013	0.0050		mg/L	1	3/17/2022 9:35:19 AM	A86535
Vanadium	0.0041	0.0017	0.050	J	mg/L	1	3/17/2022 9:35:19 AM	A86535
Zinc	0.0055	0.0032	0.010	J	mg/L	1	3/17/2022 9:35:19 AM	A86535
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/21/2022 5:21:56 PM	A86624
Arsenic	0.0028	0.00012	0.0010		mg/L	1	3/18/2022 3:02:25 PM	B86600
Barium	0.061	0.0023	0.0050		mg/L	5	3/18/2022 3:53:07 PM	B86600
Beryllium	ND	0.00020	0.0010		mg/L	1	3/18/2022 3:02:25 PM	B86600
Cadmium	ND	0.000066	0.00050		mg/L	1	3/18/2022 3:02:25 PM	B86600
Chromium	0.0047	0.00014	0.0010		mg/L	1	3/18/2022 3:02:25 PM	B86600
Lead	0.000068	0.000057	0.00050	J	mg/L	1	3/18/2022 3:02:25 PM	B86600
Nickel	0.0081	0.00048	0.0010		mg/L	1	3/18/2022 3:02:25 PM	B86600
Selenium	0.0021	0.00034	0.0010		mg/L	1	3/18/2022 3:02:25 PM	B86600
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/21/2022 4:42:17 PM	66284

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-04R
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 11:10:00 AM
Lab ID: 2203825-006A
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	500	11	50		µg/L	50	3/21/2022 1:49:08 PM	R86626
Toluene	6.1	1.0	5.0		µg/L	5	3/19/2022 6:13:40 AM	R86601
Ethylbenzene	47	1.1	5.0		µg/L	5	3/19/2022 6:13:40 AM	R86601
Methyl tert-butyl ether (MTBE)	850	2.0	5.0		µg/L	5	3/19/2022 6:13:40 AM	R86601
1,2,4-Trimethylbenzene	70	0.61	5.0		µg/L	5	3/19/2022 6:13:40 AM	R86601
1,3,5-Trimethylbenzene	8.3	0.91	5.0		µg/L	5	3/19/2022 6:13:40 AM	R86601
1,2-Dichloroethane (EDC)	2.8	1.3	5.0	J	µg/L	5	3/19/2022 6:13:40 AM	R86601
1,2-Dibromoethane (EDB)	ND	1.5	5.0		µg/L	5	3/19/2022 6:13:40 AM	R86601
Acetone	ND	13	50		µg/L	5	3/19/2022 6:13:40 AM	R86601
Bromomethane	ND	4.3	15		µg/L	5	3/19/2022 6:13:40 AM	R86601
2-Butanone	ND	10	50		µg/L	5	3/19/2022 6:13:40 AM	R86601
Carbon disulfide	ND	3.0	50		µg/L	5	3/19/2022 6:13:40 AM	R86601
Chlorobenzene	ND	0.78	5.0		µg/L	5	3/19/2022 6:13:40 AM	R86601
Chloroform	2.1	0.67	5.0	J	µg/L	5	3/19/2022 6:13:40 AM	R86601
Chloromethane	3.9	2.1	15	J	µg/L	5	3/19/2022 6:13:40 AM	R86601
cis-1,2-DCE	20	1.9	5.0		µg/L	5	3/19/2022 6:13:40 AM	R86601
1,1-Dichloroethane	41	1.4	5.0		µg/L	5	3/19/2022 6:13:40 AM	R86601
1,1-Dichloroethene	64	1.0	5.0		µg/L	5	3/19/2022 6:13:40 AM	R86601
Isopropylbenzene	2.3	0.91	5.0	J	µg/L	5	3/19/2022 6:13:40 AM	R86601
4-Isopropyltoluene	1.3	1.0	5.0	J	µg/L	5	3/19/2022 6:13:40 AM	R86601
Methylene Chloride	ND	2.5	15		µg/L	5	3/19/2022 6:13:40 AM	R86601
n-Butylbenzene	ND	1.3	15		µg/L	5	3/19/2022 6:13:40 AM	R86601
n-Propylbenzene	3.1	0.91	5.0	J	µg/L	5	3/19/2022 6:13:40 AM	R86601
sec-Butylbenzene	ND	0.72	5.0		µg/L	5	3/19/2022 6:13:40 AM	R86601
Styrene	ND	0.68	5.0		µg/L	5	3/19/2022 6:13:40 AM	R86601
Tetrachloroethene (PCE)	ND	1.8	5.0		µg/L	5	3/19/2022 6:13:40 AM	R86601
1,1,1-Trichloroethane	ND	1.5	5.0		µg/L	5	3/19/2022 6:13:40 AM	R86601
Trichloroethene (TCE)	2.5	1.0	5.0	J	µg/L	5	3/19/2022 6:13:40 AM	R86601
Vinyl chloride	ND	1.6	5.0		µg/L	5	3/19/2022 6:13:40 AM	R86601
Xylenes, Total	88	1.9	7.5		µg/L	5	3/19/2022 6:13:40 AM	R86601
Surr: 1,2-Dichloroethane-d4	87.6	0	70-130		%Rec	5	3/19/2022 6:13:40 AM	R86601
Surr: 4-Bromofluorobenzene	99.7	0	70-130		%Rec	5	3/19/2022 6:13:40 AM	R86601
Surr: Dibromofluoromethane	86.9	0	70-130		%Rec	5	3/19/2022 6:13:40 AM	R86601
Surr: Toluene-d8	105	0	70-130		%Rec	5	3/19/2022 6:13:40 AM	R86601
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	3.7	0.061	0.25		mg/L	5	3/19/2022 6:13:40 AM	R86601
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	5	3/19/2022 6:13:40 AM	R86601

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-04R
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 11:10:00 AM
Lab ID: 2203825-006B
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	3/21/2022 5:21:18 PM	66256

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-04R
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 11:10:00 AM
Lab ID: 2203825-006C
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	1.5	0.016	0.064		mg/L	1	3/18/2022 6:28:19 PM	66219
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/18/2022 6:28:19 PM	66219
Surr: DNOP	102	0	42.2-138		%Rec	1	3/18/2022 6:28:19 PM	66219
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	1.1	20		µg/L	1	3/22/2022 3:29:59 PM	66226
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/22/2022 3:29:59 PM	66226
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/22/2022 3:29:59 PM	66226
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/22/2022 3:29:59 PM	66226
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/22/2022 3:29:59 PM	66226
Diethyl phthalate	ND	3.9	10		µg/L	1	3/22/2022 3:29:59 PM	66226
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/22/2022 3:29:59 PM	66226
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/22/2022 3:29:59 PM	66226
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/22/2022 3:29:59 PM	66226
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/22/2022 3:29:59 PM	66226
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/22/2022 3:29:59 PM	66226
Phenol	5.5	0.33	5.0		µg/L	1	3/22/2022 3:29:59 PM	66226
Pyridine	ND	10	10		µg/L	1	3/22/2022 3:29:59 PM	66226
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/22/2022 3:29:59 PM	66226
Surr: 2-Fluorophenol	51.8	0	29.4-87.7		%Rec	1	3/22/2022 3:29:59 PM	66226
Surr: Phenol-d5	38.1	0	28.5-64.7		%Rec	1	3/22/2022 3:29:59 PM	66226
Surr: 2,4,6-Tribromophenol	65.1	0	18.6-129		%Rec	1	3/22/2022 3:29:59 PM	66226
Surr: Nitrobenzene-d5	62.6	0	36.9-103		%Rec	1	3/22/2022 3:29:59 PM	66226
Surr: 2-Fluorobiphenyl	62.2	0	38.1-99.9		%Rec	1	3/22/2022 3:29:59 PM	66226
Surr: 4-Terphenyl-d14	82.7	0	48-155		%Rec	1	3/22/2022 3:29:59 PM	66226
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	31	0.48	10		µg/L	10	3/22/2022 6:15:00 PM	R86665
Naphthalene	11	0.034	0.10		µg/L	1	3/21/2022 4:41:00 PM	R86628
1-Methylnaphthalene	8.7	0.024	0.10		µg/L	1	3/21/2022 4:41:00 PM	R86628
2-Methylnaphthalene	2.4	0.034	0.10		µg/L	1	3/21/2022 4:41:00 PM	R86628
Acenaphthene	0.86	0.031	0.10		µg/L	1	3/21/2022 4:41:00 PM	R86628
Fluorene	1.1	0.031	0.10		µg/L	1	3/21/2022 4:41:00 PM	R86628
Phenanthrene	0.54	0.057	0.10		µg/L	1	3/21/2022 4:41:00 PM	R86628
Anthracene	0.26	0.034	0.10		µg/L	1	3/21/2022 4:41:00 PM	R86628
Fluoranthene	ND	0.10	0.20		µg/L	1	3/21/2022 4:41:00 PM	R86628
Pyrene	0.22	0.16	0.40	J	µg/L	1	3/21/2022 4:41:00 PM	R86628
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/21/2022 4:41:00 PM	R86628
Chrysene	ND	0.024	0.10		µg/L	1	3/21/2022 4:41:00 PM	R86628
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/21/2022 4:41:00 PM	R86628
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/21/2022 4:41:00 PM	R86628

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-04R
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 11:10:00 AM
Lab ID: 2203825-006C
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	67.2	0	31.6-100		%Rec	1	3/21/2022 4:41:00 PM	R86628
Surr: 2-Fluorobiphenyl	61.5	0	26.7-90.1		%Rec	1	3/21/2022 4:41:00 PM	R86628
Surr: 4-Terphenyl-d14	82.3	0	72.3-147		%Rec	1	3/21/2022 4:41:00 PM	R86628

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-04R
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 11:10:00 AM
Lab ID: 2203825-006D
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **bcv**	
Cobalt	0.010	0.00017	0.0010		mg/L	1	3/21/2022 1:50:45 PM	66254
Vanadium	0.024	0.00058	0.0010		mg/L	1	3/21/2022 1:50:45 PM	66254
Antimony	ND	0.00044	0.0010		mg/L	1	3/21/2022 1:50:45 PM	66254
Arsenic	0.0045	0.00013	0.0010		mg/L	1	3/21/2022 1:50:45 PM	66254
Barium	0.99	0.023	0.050		mg/L	50	3/21/2022 2:39:35 PM	66254
Beryllium	0.0016	0.00025	0.0010		mg/L	1	3/21/2022 1:50:45 PM	66254
Cadmium	ND	0.000080	0.00050		mg/L	1	3/21/2022 1:50:45 PM	66254
Chromium	0.015	0.00056	0.0010		mg/L	1	3/21/2022 1:50:45 PM	66254
Lead	0.0075	0.000061	0.00050		mg/L	1	3/21/2022 1:50:45 PM	66254
Nickel	0.020	0.00048	0.0010		mg/L	1	3/21/2022 1:50:45 PM	66254
Selenium	0.0016	0.00037	0.0010		mg/L	1	3/21/2022 1:50:45 PM	66254
Silver	ND	0.00022	0.00050		mg/L	1	3/21/2022 1:50:45 PM	66254
Zinc	0.025	0.0038	0.010		mg/L	1	3/21/2022 1:50:45 PM	66254
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/21/2022 4:44:26 PM	66284

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-04R
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 11:10:00 AM
Lab ID: 2203825-006E
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Cobalt	0.0056	0.0024	0.0060	J	mg/L	1	3/17/2022 9:43:35 AM	A86535
Silver	ND	0.0013	0.0050		mg/L	1	3/17/2022 9:43:35 AM	A86535
Vanadium	ND	0.0017	0.050		mg/L	1	3/17/2022 9:43:35 AM	A86535
Zinc	0.012	0.0032	0.010		mg/L	1	3/17/2022 9:43:35 AM	A86535
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/21/2022 5:24:37 PM	A86624
Arsenic	0.0026	0.00012	0.0010		mg/L	1	3/18/2022 3:05:06 PM	B86600
Barium	0.69	0.0092	0.020		mg/L	20	3/18/2022 3:55:48 PM	B86600
Beryllium	ND	0.00020	0.0010		mg/L	1	3/18/2022 3:05:06 PM	B86600
Cadmium	ND	0.000066	0.00050		mg/L	1	3/18/2022 3:05:06 PM	B86600
Chromium	0.00026	0.00014	0.0010	J	mg/L	1	3/18/2022 3:05:06 PM	B86600
Lead	ND	0.000057	0.00050		mg/L	1	3/18/2022 3:05:06 PM	B86600
Nickel	0.0089	0.00048	0.0010		mg/L	1	3/18/2022 3:05:06 PM	B86600
Selenium	ND	0.00034	0.0010		mg/L	1	3/18/2022 3:05:06 PM	B86600
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/21/2022 4:46:34 PM	66284

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 11:30:00 AM
Lab ID: 2203825-007A
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	5300	23	100		µg/L	100	3/19/2022 6:42:01 AM	R86601
Toluene	320	2.0	10		µg/L	10	3/19/2022 7:10:20 AM	R86601
Ethylbenzene	450	2.1	10		µg/L	10	3/19/2022 7:10:20 AM	R86601
Methyl tert-butyl ether (MTBE)	24	3.9	10		µg/L	10	3/19/2022 7:10:20 AM	R86601
1,2,4-Trimethylbenzene	220	1.2	10		µg/L	10	3/19/2022 7:10:20 AM	R86601
1,3,5-Trimethylbenzene	46	1.8	10		µg/L	10	3/19/2022 7:10:20 AM	R86601
1,2-Dichloroethane (EDC)	4.3	2.5	10	J	µg/L	10	3/19/2022 7:10:20 AM	R86601
1,2-Dibromoethane (EDB)	ND	3.0	10		µg/L	10	3/19/2022 7:10:20 AM	R86601
Acetone	ND	25	100		µg/L	10	3/19/2022 7:10:20 AM	R86601
Bromomethane	ND	8.5	30		µg/L	10	3/19/2022 7:10:20 AM	R86601
2-Butanone	ND	20	100		µg/L	10	3/19/2022 7:10:20 AM	R86601
Carbon disulfide	ND	5.9	100		µg/L	10	3/19/2022 7:10:20 AM	R86601
Chlorobenzene	ND	1.6	10		µg/L	10	3/19/2022 7:10:20 AM	R86601
Chloroform	3.5	1.3	10	J	µg/L	10	3/19/2022 7:10:20 AM	R86601
Chloromethane	ND	4.1	30		µg/L	10	3/19/2022 7:10:20 AM	R86601
cis-1,2-DCE	ND	3.9	10		µg/L	10	3/19/2022 7:10:20 AM	R86601
1,1-Dichloroethane	14	2.7	10		µg/L	10	3/19/2022 7:10:20 AM	R86601
1,1-Dichloroethene	ND	2.0	10		µg/L	10	3/19/2022 7:10:20 AM	R86601
Isopropylbenzene	16	1.8	10		µg/L	10	3/19/2022 7:10:20 AM	R86601
4-Isopropyltoluene	ND	2.0	10		µg/L	10	3/19/2022 7:10:20 AM	R86601
Methylene Chloride	ND	5.0	30		µg/L	10	3/19/2022 7:10:20 AM	R86601
n-Butylbenzene	5.3	2.5	30	J	µg/L	10	3/19/2022 7:10:20 AM	R86601
n-Propylbenzene	29	1.8	10		µg/L	10	3/19/2022 7:10:20 AM	R86601
sec-Butylbenzene	4.4	1.4	10	J	µg/L	10	3/19/2022 7:10:20 AM	R86601
Styrene	ND	1.4	10		µg/L	10	3/19/2022 7:10:20 AM	R86601
Tetrachloroethene (PCE)	ND	3.6	10		µg/L	10	3/19/2022 7:10:20 AM	R86601
1,1,1-Trichloroethane	ND	3.0	10		µg/L	10	3/19/2022 7:10:20 AM	R86601
Trichloroethene (TCE)	ND	2.0	10		µg/L	10	3/19/2022 7:10:20 AM	R86601
Vinyl chloride	16	3.2	10		µg/L	10	3/19/2022 7:10:20 AM	R86601
Xylenes, Total	1300	3.7	15		µg/L	10	3/19/2022 7:10:20 AM	R86601
Surr: 1,2-Dichloroethane-d4	88.6	0	70-130		%Rec	10	3/19/2022 7:10:20 AM	R86601
Surr: 4-Bromofluorobenzene	97.9	0	70-130		%Rec	10	3/19/2022 7:10:20 AM	R86601
Surr: Dibromofluoromethane	85.5	0	70-130		%Rec	10	3/19/2022 7:10:20 AM	R86601
Surr: Toluene-d8	100	0	70-130		%Rec	10	3/19/2022 7:10:20 AM	R86601
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	19	0.12	0.50		mg/L	10	3/19/2022 7:10:20 AM	R86601
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	10	3/19/2022 7:10:20 AM	R86601

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 11:30:00 AM
Lab ID: 2203825-007B
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	3/21/2022 5:36:28 PM	66256

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 11:30:00 AM
Lab ID: 2203825-007C
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.92	0.016	0.064		mg/L	1	3/18/2022 6:51:54 PM	66219
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/18/2022 6:51:54 PM	66219
Surr: DNOP	106	0	42.2-138		%Rec	1	3/18/2022 6:51:54 PM	66219
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	1.1	20		µg/L	1	3/23/2022 12:28:27 PM	66226
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/23/2022 12:28:27 PM	66226
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/23/2022 12:28:27 PM	66226
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/23/2022 12:28:27 PM	66226
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/23/2022 12:28:27 PM	66226
Diethyl phthalate	ND	3.9	10		µg/L	1	3/23/2022 12:28:27 PM	66226
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/23/2022 12:28:27 PM	66226
2,4-Dimethylphenol	4.3	0.97	5.0	J	µg/L	1	3/23/2022 12:28:27 PM	66226
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/23/2022 12:28:27 PM	66226
2-Methylphenol	6.4	0.51	5.0		µg/L	1	3/23/2022 12:28:27 PM	66226
3+4-Methylphenol	3.8	0.45	5.0	J	µg/L	1	3/23/2022 12:28:27 PM	66226
Phenol	30	0.33	5.0		µg/L	1	3/23/2022 12:28:27 PM	66226
Pyridine	ND	10	10		µg/L	1	3/23/2022 12:28:27 PM	66226
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/23/2022 12:28:27 PM	66226
Surr: 2-Fluorophenol	32.6	0	29.4-87.7		%Rec	1	3/23/2022 12:28:27 PM	66226
Surr: Phenol-d5	26.9	0	28.5-64.7	S	%Rec	1	3/23/2022 12:28:27 PM	66226
Surr: 2,4,6-Tribromophenol	12.6	0	18.6-129	S	%Rec	1	3/23/2022 12:28:27 PM	66226
Surr: Nitrobenzene-d5	44.3	0	36.9-103		%Rec	1	3/23/2022 12:28:27 PM	66226
Surr: 2-Fluorobiphenyl	40.1	0	38.1-99.9		%Rec	1	3/23/2022 12:28:27 PM	66226
Surr: 4-Terphenyl-d14	84.9	0	48-155		%Rec	1	3/23/2022 12:28:27 PM	66226
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	5.7	0.048	1.0		µg/L	1	3/21/2022 5:26:00 PM	R86628
Naphthalene	16	0.034	0.10		µg/L	1	3/21/2022 5:26:00 PM	R86628
1-Methylnaphthalene	4.4	0.024	0.10		µg/L	1	3/21/2022 5:26:00 PM	R86628
2-Methylnaphthalene	4.7	0.034	0.10		µg/L	1	3/21/2022 5:26:00 PM	R86628
Acenaphthene	0.30	0.031	0.10		µg/L	1	3/21/2022 5:26:00 PM	R86628
Fluorene	0.78	0.031	0.10		µg/L	1	3/21/2022 5:26:00 PM	R86628
Phenanthrene	0.26	0.057	0.10		µg/L	1	3/21/2022 5:26:00 PM	R86628
Anthracene	ND	0.034	0.10		µg/L	1	3/21/2022 5:26:00 PM	R86628
Fluoranthene	ND	0.10	0.20		µg/L	1	3/21/2022 5:26:00 PM	R86628
Pyrene	0.20	0.16	0.40	J	µg/L	1	3/21/2022 5:26:00 PM	R86628
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/21/2022 5:26:00 PM	R86628
Chrysene	ND	0.024	0.10		µg/L	1	3/21/2022 5:26:00 PM	R86628
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/21/2022 5:26:00 PM	R86628
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/21/2022 5:26:00 PM	R86628

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 11:30:00 AM
Lab ID: 2203825-007C
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	46.6	0	31.6-100		%Rec	1	3/21/2022 5:26:00 PM	R86628
Surr: 2-Fluorobiphenyl	43.5	0	26.7-90.1		%Rec	1	3/21/2022 5:26:00 PM	R86628
Surr: 4-Terphenyl-d14	84.6	0	72.3-147		%Rec	1	3/21/2022 5:26:00 PM	R86628

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 11:30:00 AM
Lab ID: 2203825-007D
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **bcv**	
Cobalt	0.0039	0.00084	0.0050	J	mg/L	5	3/21/2022 2:42:00 PM	66254
Vanadium	0.0049	0.0029	0.0050	J	mg/L	5	3/21/2022 2:42:00 PM	66254
Antimony	ND	0.0022	0.0050		mg/L	5	3/21/2022 2:42:00 PM	66254
Arsenic	0.015	0.00063	0.0050	*	mg/L	5	3/21/2022 2:42:00 PM	66254
Barium	4.6	0.092	0.20		mg/L	200	3/21/2022 2:49:22 PM	66254
Beryllium	ND	0.0012	0.0050		mg/L	5	3/21/2022 2:42:00 PM	66254
Cadmium	ND	0.000080	0.00050		mg/L	1	3/21/2022 1:53:11 PM	66254
Chromium	0.0038	0.0028	0.0050	J	mg/L	5	3/21/2022 2:42:00 PM	66254
Lead	0.0020	0.00031	0.0025	J	mg/L	5	3/21/2022 2:42:00 PM	66254
Nickel	0.028	0.0024	0.0050		mg/L	5	3/21/2022 2:42:00 PM	66254
Selenium	ND	0.0019	0.0050		mg/L	5	3/21/2022 2:42:00 PM	66254
Silver	ND	0.0011	0.0025		mg/L	5	3/21/2022 2:42:00 PM	66254
Zinc	0.069	0.019	0.050		mg/L	5	3/21/2022 2:42:00 PM	66254
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/21/2022 4:48:43 PM	66284

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 11:30:00 AM
Lab ID: 2203825-007E
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Cobalt	0.0058	0.0024	0.0060	J	mg/L	1	3/17/2022 9:48:14 AM	A86535
Silver	ND	0.0013	0.0050		mg/L	1	3/17/2022 9:48:14 AM	A86535
Vanadium	ND	0.0017	0.050		mg/L	1	3/17/2022 9:48:14 AM	A86535
Zinc	0.010	0.0032	0.010		mg/L	1	3/17/2022 9:48:14 AM	A86535
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/21/2022 5:27:18 PM	A86624
Arsenic	0.013	0.00012	0.0010	*	mg/L	1	3/18/2022 3:07:47 PM	B86600
Barium	4.5	0.092	0.20		mg/L	200	3/18/2022 3:58:29 PM	B86600
Beryllium	ND	0.00020	0.0010		mg/L	1	3/18/2022 3:07:47 PM	B86600
Cadmium	ND	0.000066	0.00050		mg/L	1	3/18/2022 3:07:47 PM	B86600
Chromium	0.00045	0.00014	0.0010	J	mg/L	1	3/18/2022 3:07:47 PM	B86600
Lead	ND	0.000057	0.00050		mg/L	1	3/18/2022 3:07:47 PM	B86600
Nickel	0.026	0.00048	0.0010		mg/L	1	3/18/2022 3:07:47 PM	B86600
Selenium	0.00046	0.00034	0.0010	J	mg/L	1	3/18/2022 3:07:47 PM	B86600
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/21/2022 4:50:52 PM	66284

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-10
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 11:50:00 AM
Lab ID: 2203825-008A
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	6300	23	100		µg/L	100	3/19/2022 7:38:39 AM	R86601
Toluene	220	2.0	10		µg/L	10	3/19/2022 8:06:58 AM	R86601
Ethylbenzene	1600	21	100		µg/L	100	3/19/2022 7:38:39 AM	R86601
Methyl tert-butyl ether (MTBE)	9.6	3.9	10	J	µg/L	10	3/19/2022 8:06:58 AM	R86601
1,2,4-Trimethylbenzene	930	1.2	10		µg/L	10	3/19/2022 8:06:58 AM	R86601
1,3,5-Trimethylbenzene	220	1.8	10		µg/L	10	3/19/2022 8:06:58 AM	R86601
1,2-Dichloroethane (EDC)	4.1	2.5	10	J	µg/L	10	3/19/2022 8:06:58 AM	R86601
1,2-Dibromoethane (EDB)	ND	3.0	10		µg/L	10	3/19/2022 8:06:58 AM	R86601
Acetone	ND	25	100		µg/L	10	3/19/2022 8:06:58 AM	R86601
Bromomethane	ND	8.5	30		µg/L	10	3/19/2022 8:06:58 AM	R86601
2-Butanone	21	20	100	J	µg/L	10	3/19/2022 8:06:58 AM	R86601
Carbon disulfide	ND	5.9	100		µg/L	10	3/19/2022 8:06:58 AM	R86601
Chlorobenzene	ND	1.6	10		µg/L	10	3/19/2022 8:06:58 AM	R86601
Chloroform	4.0	1.3	10	J	µg/L	10	3/19/2022 8:06:58 AM	R86601
Chloromethane	27	4.1	30	J	µg/L	10	3/19/2022 8:06:58 AM	R86601
cis-1,2-DCE	6.2	3.9	10	J	µg/L	10	3/19/2022 8:06:58 AM	R86601
1,1-Dichloroethane	12	2.7	10		µg/L	10	3/19/2022 8:06:58 AM	R86601
1,1-Dichloroethene	ND	2.0	10		µg/L	10	3/19/2022 8:06:58 AM	R86601
Isopropylbenzene	58	1.8	10		µg/L	10	3/19/2022 8:06:58 AM	R86601
4-Isopropyltoluene	7.7	2.0	10	J	µg/L	10	3/19/2022 8:06:58 AM	R86601
Methylene Chloride	5.6	5.0	30	J	µg/L	10	3/19/2022 8:06:58 AM	R86601
n-Butylbenzene	11	2.5	30	J	µg/L	10	3/19/2022 8:06:58 AM	R86601
n-Propylbenzene	100	1.8	10		µg/L	10	3/19/2022 8:06:58 AM	R86601
sec-Butylbenzene	5.7	1.4	10	J	µg/L	10	3/19/2022 8:06:58 AM	R86601
Styrene	ND	1.4	10		µg/L	10	3/19/2022 8:06:58 AM	R86601
Tetrachloroethene (PCE)	ND	3.6	10		µg/L	10	3/19/2022 8:06:58 AM	R86601
1,1,1-Trichloroethane	ND	3.0	10		µg/L	10	3/19/2022 8:06:58 AM	R86601
Trichloroethene (TCE)	ND	2.0	10		µg/L	10	3/19/2022 8:06:58 AM	R86601
Vinyl chloride	8.0	3.2	10	J	µg/L	10	3/19/2022 8:06:58 AM	R86601
Xylenes, Total	6700	37	150		µg/L	100	3/19/2022 7:38:39 AM	R86601
Surr: 1,2-Dichloroethane-d4	85.8	0	70-130		%Rec	10	3/19/2022 8:06:58 AM	R86601
Surr: 4-Bromofluorobenzene	91.1	0	70-130		%Rec	10	3/19/2022 8:06:58 AM	R86601
Surr: Dibromofluoromethane	84.1	0	70-130		%Rec	10	3/19/2022 8:06:58 AM	R86601
Surr: Toluene-d8	100	0	70-130		%Rec	10	3/19/2022 8:06:58 AM	R86601
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	41	0.12	0.50		mg/L	10	3/19/2022 8:06:58 AM	R86601
Surr: 4-Bromofluorobenzene	92.2	0	70-130		%Rec	10	3/19/2022 8:06:58 AM	R86601

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-10
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 11:50:00 AM
Lab ID: 2203825-008B
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	3/21/2022 5:51:32 PM	66256

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-10
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 11:50:00 AM
Lab ID: 2203825-008C
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	1.9	0.016	0.064		mg/L	1	3/18/2022 7:15:36 PM	66219
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/18/2022 7:15:36 PM	66219
Surr: DNOP	95.4	0	42.2-138		%Rec	1	3/18/2022 7:15:36 PM	66219
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	1.1	20		µg/L	1	3/23/2022 1:09:39 PM	66226
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/23/2022 1:09:39 PM	66226
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/23/2022 1:09:39 PM	66226
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/23/2022 1:09:39 PM	66226
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/23/2022 1:09:39 PM	66226
Diethyl phthalate	ND	3.9	10		µg/L	1	3/23/2022 1:09:39 PM	66226
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/23/2022 1:09:39 PM	66226
2,4-Dimethylphenol	16	0.97	5.0		µg/L	1	3/23/2022 1:09:39 PM	66226
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/23/2022 1:09:39 PM	66226
1-Methylnaphthalene	43	0.60	5.0		µg/L	1	3/23/2022 1:09:39 PM	66226
2-Methylnaphthalene	73	0.41	5.0		µg/L	1	3/23/2022 1:09:39 PM	66226
2-Methylphenol	6.1	0.51	5.0		µg/L	1	3/23/2022 1:09:39 PM	66226
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/23/2022 1:09:39 PM	66226
Naphthalene	120	2.2	5.0		µg/L	1	3/23/2022 1:09:39 PM	66226
Phenol	22	0.33	5.0		µg/L	1	3/23/2022 1:09:39 PM	66226
Pyridine	ND	10	10		µg/L	1	3/23/2022 1:09:39 PM	66226
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/23/2022 1:09:39 PM	66226
Surr: 2-Fluorophenol	0	0	29.4-87.7	S	%Rec	1	3/23/2022 1:09:39 PM	66226
Surr: Phenol-d5	24.7	0	28.5-64.7	S	%Rec	1	3/23/2022 1:09:39 PM	66226
Surr: 2,4,6-Tribromophenol	1.82	0	18.6-129	S	%Rec	1	3/23/2022 1:09:39 PM	66226
Surr: Nitrobenzene-d5	65.4	0	36.9-103		%Rec	1	3/23/2022 1:09:39 PM	66226
Surr: 2-Fluorobiphenyl	63.3	0	38.1-99.9		%Rec	1	3/23/2022 1:09:39 PM	66226
Surr: 4-Terphenyl-d14	88.9	0	48-155		%Rec	1	3/23/2022 1:09:39 PM	66226
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	3.6	0.048	1.0		µg/L	1	3/21/2022 6:11:00 PM	R86628
Acenaphthene	0.88	0.031	0.10		µg/L	1	3/21/2022 6:11:00 PM	R86628
Fluorene	1.8	0.031	0.10		µg/L	1	3/21/2022 6:11:00 PM	R86628
Phenanthrene	1.4	0.057	0.10		µg/L	1	3/21/2022 6:11:00 PM	R86628
Anthracene	ND	0.034	0.10		µg/L	1	3/21/2022 6:11:00 PM	R86628
Fluoranthene	ND	0.10	0.20		µg/L	1	3/21/2022 6:11:00 PM	R86628
Pyrene	0.18	0.16	0.40	J	µg/L	1	3/21/2022 6:11:00 PM	R86628
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/21/2022 6:11:00 PM	R86628
Chrysene	ND	0.024	0.10		µg/L	1	3/21/2022 6:11:00 PM	R86628
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/21/2022 6:11:00 PM	R86628
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/21/2022 6:11:00 PM	R86628

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-10
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 11:50:00 AM
Lab ID: 2203825-008C
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	66.8	0	31.6-100		%Rec	1	3/21/2022 6:11:00 PM	R86628
Surr: 2-Fluorobiphenyl	60.2	0	26.7-90.1		%Rec	1	3/21/2022 6:11:00 PM	R86628
Surr: 4-Terphenyl-d14	88.1	0	72.3-147		%Rec	1	3/21/2022 6:11:00 PM	R86628

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-10
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 11:50:00 AM
Lab ID: 2203825-008D
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **bcv**	
Cobalt	0.0050	0.00084	0.0050	J	mg/L	5	3/21/2022 2:51:49 PM	66254
Vanadium	0.020	0.0029	0.0050		mg/L	5	3/21/2022 2:51:49 PM	66254
Antimony	ND	0.00044	0.0010		mg/L	1	3/21/2022 1:55:37 PM	66254
Arsenic	0.0061	0.00063	0.0050		mg/L	5	3/21/2022 2:51:49 PM	66254
Barium	7.9	0.23	0.50		mg/L	500	3/21/2022 2:54:15 PM	66254
Beryllium	ND	0.0012	0.0050		mg/L	5	3/21/2022 2:51:49 PM	66254
Cadmium	ND	0.000080	0.00050		mg/L	1	3/21/2022 1:55:37 PM	66254
Chromium	0.012	0.0028	0.0050		mg/L	5	3/21/2022 2:51:49 PM	66254
Lead	0.0082	0.00031	0.0025		mg/L	5	3/21/2022 2:51:49 PM	66254
Nickel	0.024	0.0024	0.0050		mg/L	5	3/21/2022 2:51:49 PM	66254
Selenium	ND	0.0019	0.0050		mg/L	5	3/21/2022 2:51:49 PM	66254
Silver	ND	0.00022	0.00050		mg/L	1	3/21/2022 1:55:37 PM	66254
Zinc	0.025	0.019	0.050	J	mg/L	5	3/21/2022 2:51:49 PM	66254
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/21/2022 4:53:02 PM	66284

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-10
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 11:50:00 AM
Lab ID: 2203825-008E
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Cobalt	ND	0.0024	0.0060		mg/L	1	3/17/2022 9:52:44 AM	A86535
Silver	ND	0.0013	0.0050		mg/L	1	3/17/2022 9:52:44 AM	A86535
Vanadium	ND	0.0017	0.050		mg/L	1	3/17/2022 9:52:44 AM	A86535
Zinc	0.0080	0.0032	0.010	J	mg/L	1	3/17/2022 9:52:44 AM	A86535
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/21/2022 5:35:22 PM	A86624
Arsenic	0.0038	0.00012	0.0010		mg/L	1	3/18/2022 3:10:29 PM	B86600
Barium	8.7	0.23	0.50		mg/L	500	3/18/2022 4:01:10 PM	B86600
Beryllium	ND	0.00020	0.0010		mg/L	1	3/18/2022 3:10:29 PM	B86600
Cadmium	ND	0.000066	0.00050		mg/L	1	3/18/2022 3:10:29 PM	B86600
Chromium	0.00035	0.00014	0.0010	J	mg/L	1	3/18/2022 3:10:29 PM	B86600
Lead	ND	0.000057	0.00050		mg/L	1	3/18/2022 3:10:29 PM	B86600
Nickel	0.015	0.00048	0.0010		mg/L	1	3/18/2022 3:10:29 PM	B86600
Selenium	ND	0.00034	0.0010		mg/L	1	3/18/2022 3:10:29 PM	B86600
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/21/2022 4:55:12 PM	66284

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB 3-15-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022 11:50:00 AM
Lab ID: 2203825-009A
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	3/21/2022 9:54:49 PM	R86626
Toluene	ND	0.20	1.0		µg/L	1	3/21/2022 9:54:49 PM	R86626
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/21/2022 9:54:49 PM	R86626
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/21/2022 9:54:49 PM	R86626
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/21/2022 9:54:49 PM	R86626
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/21/2022 9:54:49 PM	R86626
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	3/21/2022 9:54:49 PM	R86626
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/21/2022 9:54:49 PM	R86626
Acetone	ND	2.5	10		µg/L	1	3/21/2022 9:54:49 PM	R86626
Bromomethane	ND	0.85	3.0		µg/L	1	3/21/2022 9:54:49 PM	R86626
2-Butanone	7.9	2.0	10	J	µg/L	1	3/21/2022 9:54:49 PM	R86626
Carbon disulfide	ND	0.59	10		µg/L	1	3/21/2022 9:54:49 PM	R86626
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/21/2022 9:54:49 PM	R86626
Chloroform	ND	0.13	1.0		µg/L	1	3/21/2022 9:54:49 PM	R86626
Chloromethane	0.89	0.41	3.0	J	µg/L	1	3/21/2022 9:54:49 PM	R86626
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/21/2022 9:54:49 PM	R86626
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/21/2022 9:54:49 PM	R86626
1,1-Dichloroethene	0.57	0.20	1.0	J	µg/L	1	3/21/2022 9:54:49 PM	R86626
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/21/2022 9:54:49 PM	R86626
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/21/2022 9:54:49 PM	R86626
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/21/2022 9:54:49 PM	R86626
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/21/2022 9:54:49 PM	R86626
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/21/2022 9:54:49 PM	R86626
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/21/2022 9:54:49 PM	R86626
Styrene	ND	0.14	1.0		µg/L	1	3/21/2022 9:54:49 PM	R86626
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/21/2022 9:54:49 PM	R86626
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/21/2022 9:54:49 PM	R86626
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/21/2022 9:54:49 PM	R86626
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/21/2022 9:54:49 PM	R86626
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/21/2022 9:54:49 PM	R86626
Surr: 1,2-Dichloroethane-d4	93.5	0	70-130		%Rec	1	3/21/2022 9:54:49 PM	R86626
Surr: 4-Bromofluorobenzene	106	0	70-130		%Rec	1	3/21/2022 9:54:49 PM	R86626
Surr: Dibromofluoromethane	97.7	0	70-130		%Rec	1	3/21/2022 9:54:49 PM	R86626
Surr: Toluene-d8	102	0	70-130		%Rec	1	3/21/2022 9:54:49 PM	R86626

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-15-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022
Lab ID: 2203825-010A
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	3/21/2022 2:17:46 PM	R86626
Toluene	ND	0.20	1.0		µg/L	1	3/21/2022 2:17:46 PM	R86626
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/21/2022 2:17:46 PM	R86626
Methyl tert-butyl ether (MTBE)	2.3	0.39	1.0		µg/L	1	3/21/2022 2:17:46 PM	R86626
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/21/2022 2:17:46 PM	R86626
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/21/2022 2:17:46 PM	R86626
1,2-Dichloroethane (EDC)	0.41	0.25	1.0	J	µg/L	1	3/21/2022 2:17:46 PM	R86626
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/21/2022 2:17:46 PM	R86626
Acetone	ND	2.5	10		µg/L	1	3/21/2022 2:17:46 PM	R86626
Bromomethane	ND	0.85	3.0		µg/L	1	3/21/2022 2:17:46 PM	R86626
2-Butanone	ND	2.0	10		µg/L	1	3/21/2022 2:17:46 PM	R86626
Carbon disulfide	ND	0.59	10		µg/L	1	3/21/2022 2:17:46 PM	R86626
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/21/2022 2:17:46 PM	R86626
Chloroform	ND	0.13	1.0		µg/L	1	3/21/2022 2:17:46 PM	R86626
Chloromethane	0.75	0.41	3.0	J	µg/L	1	3/21/2022 2:17:46 PM	R86626
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/21/2022 2:17:46 PM	R86626
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/21/2022 2:17:46 PM	R86626
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/21/2022 2:17:46 PM	R86626
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/21/2022 2:17:46 PM	R86626
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/21/2022 2:17:46 PM	R86626
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/21/2022 2:17:46 PM	R86626
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/21/2022 2:17:46 PM	R86626
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/21/2022 2:17:46 PM	R86626
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/21/2022 2:17:46 PM	R86626
Styrene	ND	0.14	1.0		µg/L	1	3/21/2022 2:17:46 PM	R86626
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/21/2022 2:17:46 PM	R86626
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/21/2022 2:17:46 PM	R86626
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/21/2022 2:17:46 PM	R86626
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/21/2022 2:17:46 PM	R86626
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/21/2022 2:17:46 PM	R86626
Surr: 1,2-Dichloroethane-d4	93.1	0	70-130		%Rec	1	3/21/2022 2:17:46 PM	R86626
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	3/21/2022 2:17:46 PM	R86626
Surr: Dibromofluoromethane	96.8	0	70-130		%Rec	1	3/21/2022 2:17:46 PM	R86626
Surr: Toluene-d8	99.5	0	70-130		%Rec	1	3/21/2022 2:17:46 PM	R86626
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.036	0.012	0.050	J	mg/L	1	3/21/2022 2:17:46 PM	G86626
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	1	3/21/2022 2:17:46 PM	G86626

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-15-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022
Lab ID: 2203825-010B
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	3/21/2022 6:06:41 PM	66256

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-15-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022
Lab ID: 2203825-010C
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.026	0.016	0.064	J	mg/L	1	3/22/2022 3:51:22 PM	66236
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/22/2022 3:51:22 PM	66236
Surr: DNOP	104	0	42.2-138		%Rec	1	3/22/2022 3:51:22 PM	66236
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	1.1	20		µg/L	1	3/22/2022 5:33:56 PM	66226
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/22/2022 5:33:56 PM	66226
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/22/2022 5:33:56 PM	66226
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/22/2022 5:33:56 PM	66226
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/22/2022 5:33:56 PM	66226
Diethyl phthalate	ND	3.9	10		µg/L	1	3/22/2022 5:33:56 PM	66226
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/22/2022 5:33:56 PM	66226
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/22/2022 5:33:56 PM	66226
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/22/2022 5:33:56 PM	66226
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/22/2022 5:33:56 PM	66226
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/22/2022 5:33:56 PM	66226
Phenol	ND	0.33	5.0		µg/L	1	3/22/2022 5:33:56 PM	66226
Pyridine	ND	10	10		µg/L	1	3/22/2022 5:33:56 PM	66226
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/22/2022 5:33:56 PM	66226
Surr: 2-Fluorophenol	32.2	0	29.4-87.7		%Rec	1	3/22/2022 5:33:56 PM	66226
Surr: Phenol-d5	24.0	0	28.5-64.7	S	%Rec	1	3/22/2022 5:33:56 PM	66226
Surr: 2,4,6-Tribromophenol	41.9	0	18.6-129		%Rec	1	3/22/2022 5:33:56 PM	66226
Surr: Nitrobenzene-d5	41.5	0	36.9-103		%Rec	1	3/22/2022 5:33:56 PM	66226
Surr: 2-Fluorobiphenyl	39.6	0	38.1-99.9		%Rec	1	3/22/2022 5:33:56 PM	66226
Surr: 4-Terphenyl-d14	84.7	0	48-155		%Rec	1	3/22/2022 5:33:56 PM	66226
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.048	1.0		µg/L	1	3/21/2022 6:56:00 PM	R86628
Naphthalene	ND	0.034	0.10		µg/L	1	3/21/2022 6:56:00 PM	R86628
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/21/2022 6:56:00 PM	R86628
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/21/2022 6:56:00 PM	R86628
Acenaphthene	ND	0.031	0.10		µg/L	1	3/21/2022 6:56:00 PM	R86628
Fluorene	ND	0.031	0.10		µg/L	1	3/21/2022 6:56:00 PM	R86628
Phenanthrene	ND	0.057	0.10		µg/L	1	3/21/2022 6:56:00 PM	R86628
Anthracene	ND	0.034	0.10		µg/L	1	3/21/2022 6:56:00 PM	R86628
Fluoranthene	ND	0.10	0.20		µg/L	1	3/21/2022 6:56:00 PM	R86628
Pyrene	ND	0.16	0.40		µg/L	1	3/21/2022 6:56:00 PM	R86628
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/21/2022 6:56:00 PM	R86628
Chrysene	ND	0.024	0.10		µg/L	1	3/21/2022 6:56:00 PM	R86628
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/21/2022 6:56:00 PM	R86628
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/21/2022 6:56:00 PM	R86628

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-15-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022
Lab ID: 2203825-010C
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	46.9	0	31.6-100		%Rec	1	3/21/2022 6:56:00 PM	R86628
Surr: 2-Fluorobiphenyl	44.6	0	26.7-90.1		%Rec	1	3/21/2022 6:56:00 PM	R86628
Surr: 4-Terphenyl-d14	95.6	0	72.3-147		%Rec	1	3/21/2022 6:56:00 PM	R86628

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-15-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022
Lab ID: 2203825-010D
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **bcv**	
Cobalt	ND	0.00017	0.0010		mg/L	1	3/21/2022 1:58:04 PM	66254
Vanadium	0.045	0.00058	0.0010		mg/L	1	3/21/2022 1:58:04 PM	66254
Antimony	ND	0.00044	0.0010		mg/L	1	3/21/2022 1:58:04 PM	66254
Arsenic	0.00080	0.00013	0.0010	J	mg/L	1	3/21/2022 1:58:04 PM	66254
Barium	0.041	0.00046	0.0010		mg/L	1	3/21/2022 1:58:04 PM	66254
Beryllium	ND	0.00025	0.0010		mg/L	1	3/21/2022 1:58:04 PM	66254
Cadmium	ND	0.000080	0.00050		mg/L	1	3/21/2022 1:58:04 PM	66254
Chromium	0.0032	0.00056	0.0010		mg/L	1	3/21/2022 1:58:04 PM	66254
Lead	0.00018	0.000061	0.00050	J	mg/L	1	3/21/2022 1:58:04 PM	66254
Nickel	0.0022	0.00048	0.0010		mg/L	1	3/21/2022 1:58:04 PM	66254
Selenium	0.0022	0.00037	0.0010		mg/L	1	3/21/2022 1:58:04 PM	66254
Silver	ND	0.00022	0.00050		mg/L	1	3/21/2022 1:58:04 PM	66254
Zinc	ND	0.0038	0.010		mg/L	1	3/21/2022 1:58:04 PM	66254
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/21/2022 5:01:38 PM	66284

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-15-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/15/2022
Lab ID: 2203825-010E
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Cobalt	ND	0.0024	0.0060		mg/L	1	3/17/2022 9:55:35 AM	A86535
Silver	ND	0.0013	0.0050		mg/L	1	3/17/2022 9:55:35 AM	A86535
Vanadium	0.044	0.0017	0.050	J	mg/L	1	3/17/2022 9:55:35 AM	A86535
Zinc	0.0077	0.0032	0.010	J	mg/L	1	3/17/2022 9:55:35 AM	A86535
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/21/2022 5:40:44 PM	A86624
Arsenic	0.00068	0.00012	0.0010	J	mg/L	1	3/21/2022 5:40:44 PM	A86624
Barium	0.044	0.00046	0.0010		mg/L	1	3/21/2022 5:40:44 PM	A86624
Beryllium	ND	0.00020	0.0010		mg/L	1	3/21/2022 5:40:44 PM	A86624
Cadmium	ND	0.000066	0.00050		mg/L	1	3/21/2022 5:40:44 PM	A86624
Chromium	0.00051	0.00014	0.0010	J	mg/L	1	3/21/2022 5:40:44 PM	A86624
Lead	ND	0.000057	0.00050		mg/L	1	3/21/2022 5:40:44 PM	A86624
Nickel	0.00062	0.00048	0.0010	J	mg/L	1	3/21/2022 5:40:44 PM	A86624
Selenium	0.0028	0.00034	0.0010		mg/L	1	3/21/2022 5:40:44 PM	A86624
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/21/2022 5:08:04 PM	66284

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 1st Qtr
Collection Date:
Lab ID: 2203825-011A
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	3/21/2022 2:46:21 PM	R86626
Toluene	ND	0.20	1.0		µg/L	1	3/21/2022 2:46:21 PM	R86626
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/21/2022 2:46:21 PM	R86626
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/21/2022 2:46:21 PM	R86626
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/21/2022 2:46:21 PM	R86626
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/21/2022 2:46:21 PM	R86626
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	3/21/2022 2:46:21 PM	R86626
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/21/2022 2:46:21 PM	R86626
Acetone	ND	2.5	10		µg/L	1	3/21/2022 2:46:21 PM	R86626
Bromomethane	ND	0.85	3.0		µg/L	1	3/21/2022 2:46:21 PM	R86626
2-Butanone	ND	2.0	10		µg/L	1	3/21/2022 2:46:21 PM	R86626
Carbon disulfide	ND	0.59	10		µg/L	1	3/21/2022 2:46:21 PM	R86626
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/21/2022 2:46:21 PM	R86626
Chloroform	ND	0.13	1.0		µg/L	1	3/21/2022 2:46:21 PM	R86626
Chloromethane	0.66	0.41	3.0	J	µg/L	1	3/21/2022 2:46:21 PM	R86626
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/21/2022 2:46:21 PM	R86626
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/21/2022 2:46:21 PM	R86626
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/21/2022 2:46:21 PM	R86626
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/21/2022 2:46:21 PM	R86626
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/21/2022 2:46:21 PM	R86626
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/21/2022 2:46:21 PM	R86626
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/21/2022 2:46:21 PM	R86626
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/21/2022 2:46:21 PM	R86626
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/21/2022 2:46:21 PM	R86626
Styrene	ND	0.14	1.0		µg/L	1	3/21/2022 2:46:21 PM	R86626
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/21/2022 2:46:21 PM	R86626
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/21/2022 2:46:21 PM	R86626
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/21/2022 2:46:21 PM	R86626
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/21/2022 2:46:21 PM	R86626
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/21/2022 2:46:21 PM	R86626
Surr: 1,2-Dichloroethane-d4	92.6	0	70-130		%Rec	1	3/21/2022 2:46:21 PM	R86626
Surr: 4-Bromofluorobenzene	99.3	0	70-130		%Rec	1	3/21/2022 2:46:21 PM	R86626
Surr: Dibromofluoromethane	95.8	0	70-130		%Rec	1	3/21/2022 2:46:21 PM	R86626
Surr: Toluene-d8	104	0	70-130		%Rec	1	3/21/2022 2:46:21 PM	R86626
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.035	0.012	0.050	J	mg/L	1	3/21/2022 2:46:21 PM	G86626
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	1	3/21/2022 2:46:21 PM	G86626

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203825**
Date Reported: **3/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 1st Qtr
Collection Date:
Lab ID: 2203825-011B
Matrix: Groundwater

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0035	0.0095		µg/L	1	3/21/2022 6:21:47 PM	66256

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

ANALYTICAL REPORT

March 22, 2022

Hall Environmental Analysis Laboratory

Sample Delivery Group: L1472568

Samples Received: 03/17/2022

Project Number:

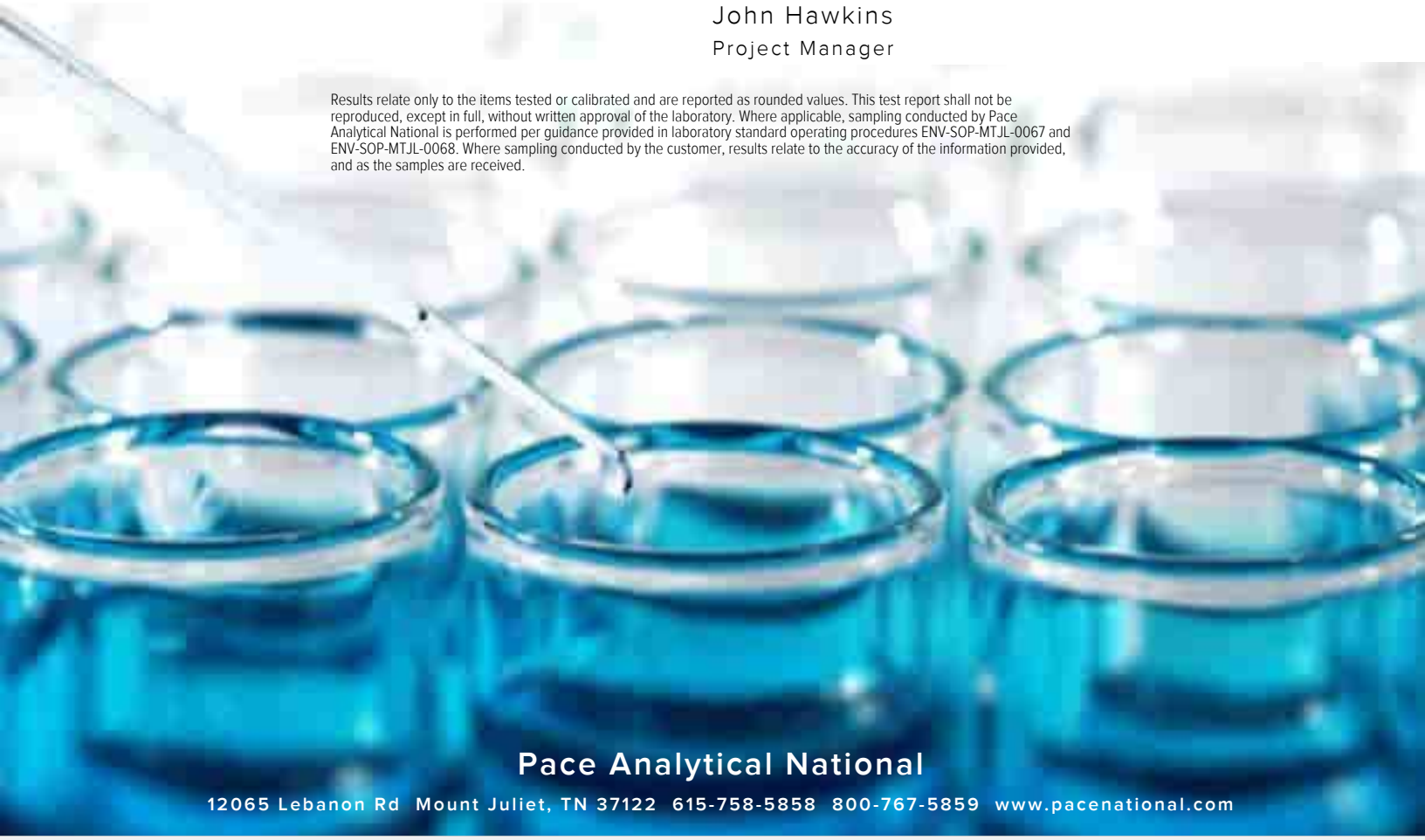
Description:

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By:

John Hawkins
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 5

Sr: Sample Results 6

2203825-001F EB 3-15-22 L1472568-01 6

2203825-002F OW-1 L1472568-02 7

2203825-003F MKTF-17R L1472568-03 8

2203825-004F MKTF-18R L1472568-04 9

2203825-005F MKTF-38 L1472568-05 10

2203825-006F MKTF-04R L1472568-06 11

2203825-007F MKTF-11 L1472568-07 12

2203825-008F MKTF-10 L1472568-08 13

2203825-009F DUP-3-15-22 L1472568-09 14

Qc: Quality Control Summary 15

Wet Chemistry by Method 4500CN E-2016 15

Gl: Glossary of Terms 16

Al: Accreditations & Locations 17

Sc: Sample Chain of Custody 18

2203825-001F EB 3-15-22 L1472568-01 WW

Collected by	Collected date/time	Received date/time
	03/15/22 08:30	03/17/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1835677	1	03/21/22 18:09	03/22/22 12:31	LDT	Mt. Juliet, TN

2203825-002F OW-1 L1472568-02 WW

Collected by	Collected date/time	Received date/time
	03/15/22 09:00	03/17/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1835677	1	03/21/22 18:09	03/22/22 12:33	LDT	Mt. Juliet, TN

2203825-003F MKTF-17R L1472568-03 WW

Collected by	Collected date/time	Received date/time
	03/15/22 10:00	03/17/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1835677	1	03/21/22 18:09	03/22/22 12:34	LDT	Mt. Juliet, TN

2203825-004F MKTF-18R L1472568-04 WW

Collected by	Collected date/time	Received date/time
	03/15/22 10:20	03/17/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1835677	1	03/21/22 18:09	03/22/22 12:35	LDT	Mt. Juliet, TN

2203825-005F MKTF-38 L1472568-05 WW

Collected by	Collected date/time	Received date/time
	03/15/22 10:45	03/17/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1835677	1	03/21/22 18:09	03/22/22 12:38	LDT	Mt. Juliet, TN

2203825-006F MKTF-04R L1472568-06 WW

Collected by	Collected date/time	Received date/time
	03/15/22 11:10	03/17/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1835677	1	03/21/22 18:09	03/22/22 12:39	LDT	Mt. Juliet, TN

2203825-007F MKTF-11 L1472568-07 WW

Collected by	Collected date/time	Received date/time
	03/15/22 11:30	03/17/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1835677	1	03/21/22 18:09	03/22/22 12:42	LDT	Mt. Juliet, TN

2203825-008F MKTF-10 L1472568-08 WW

Collected by	Collected date/time	Received date/time
	03/15/22 11:50	03/17/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1835677	1	03/21/22 18:09	03/22/22 12:43	LDT	Mt. Juliet, TN

SAMPLE SUMMARY

2203825-009F DUP-3-15-22 L1472568-09 WW

Collected by	Collected date/time	Received date/time
	03/15/22 00:00	03/17/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1835677	1	03/21/22 18:09	03/22/22 12:44	LDT	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John V Hawkins

John Hawkins
Project Manager

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	03/22/2022 12:31	WG1835677

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	03/22/2022 12:33	WG1835677

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	03/22/2022 12:34	WG1835677

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	03/22/2022 12:35	WG1835677

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	03/22/2022 12:38	WG1835677

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.00801	J6	0.00500	1	03/22/2022 12:39	WG1835677

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	03/22/2022 12:42	WG1835677

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	03/22/2022 12:43	WG1835677

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	03/22/2022 12:44	WG1835677

Method Blank (MB)

(MB) R3772598-1 03/22/22 12:14

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1472100-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1472100-06 03/22/22 12:18 • (DUP) R3772598-3 03/22/22 12:19

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

L1472568-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1472568-01 03/22/22 12:31 • (DUP) R3772598-6 03/22/22 12:32

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3772598-2 03/22/22 12:15

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.101	101	87.1-120	

L1472100-13 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1472100-13 03/22/22 12:20 • (MS) R3772598-4 03/22/22 12:21 • (MSD) R3772598-5 03/22/22 12:22

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0903	0.0851	90.3	85.1	1	90.0-110		J6	5.93	20

L1472568-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1472568-06 03/22/22 12:39 • (MS) R3772598-7 03/22/22 12:40 • (MSD) R3772598-8 03/22/22 12:41

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	0.00801	0.0912	0.0828	83.2	74.8	1	90.0-110	J6	J6	9.66	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Received by OCD: 4/21/2023 9:21:57 AM

ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: clients.hallenvironmental.com

SUB CONTRATOR	Pace TN	COMPANY	PACE TN	PHONE	(800) 767-5859
ADDRESS	12065 Lebanon Rd			ACCOUNT #	
CITY, STATE, ZIP	Mt. Juliet, TN 37122				

								ANALYTICAL COMMENTS
ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS		
1	2203825-001F	EB 3-15-22	500AMBHDP F-NAOH	Groundwater	3/15/2022 8:30:00 AM	1	Total Cyanide	-01
2	2203825-002F	OW-1	500AMBHDP F-NAOH	Groundwater	3/15/2022 9:00:00 AM	1	Total Cyanide	-02
3	2203825-003F	MKTF-17R	500AMBHDP F-NAOH	Groundwater	3/15/2022 10:00:00 AM	1	Total Cyanide	-03
4	2203825-004F	MKTF-18R	500AMBHDP F-NAOH	Groundwater	3/15/2022 10:20:00 AM	1	Total Cyanide	-04
5	2203825-005F	MKTF-38	500AMBHDP F-NAOH	Groundwater	3/15/2022 10:45:00 AM	1	Total Cyanide	-05
6	2203825-006F	MKTF-04R	500AMBHDP F-NAOH	Groundwater	3/15/2022 11:10:00 AM	1	Total Cyanide	-06
7	2203825-007F	MKTF-11	500AMBHDP F-NAOH	Groundwater	3/15/2022 11:30:00 AM	1	Total Cyanide	-07
8	2203825-008F	MKTF-10	500AMBHDP F-NAOH	Groundwater	3/15/2022 11:50:00 AM	1	Total Cyanide	-08
9	2203825-010F	DUP-3-15-22	500AMBHDP F-NAOH	Groundwater	3/15/2022	1	Total Cyanide	-09

L4772568

Sample Receipt Checklist

COC Seal Present/Intact: __Y__N
COC Signed/Accurate: __Y__N
Bottles arrive intact: __Y__N
Correct bottles used: __Y__N
Sufficient volume sent: __Y__N
RAD Screen <0.5 mR/hr: Y N

If Applicable
VOA Zero Headspace: __Y__N
Pres.Correct/Check: __Y__N

3.0 to = 3.0

5528 5947 8329

B039

3.3 to 3.3 DRAI Cnt=9 TB=0

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By:	Che	Date: 3/16/2022	Time: 8:46 AM	Received By:	T-Roberson	Date: 3/17/22	Time: 10[illegible]
Relinquished By:		Date:	Time:	Received By:		Date:	Time:
Relinquished By:		Date:	Time:	Received By:		Date:	Time:

TAT: Standard Y RUSH Next BD 2nd BD 3rd BD

REPORT TRANSMITTAL DESIRED:
HARDCOPY (extra cost) FAX EMAIL ONLINE

FOR LAB USE ONLY
Temp of samples °C Attempt to Cool ?
Comments:

Released to Imaging: 4/21/2023 9:40:26 AM

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203825**
28-Mar-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A86535**	RunNo: **86535**
Prep Date:	Analysis Date: **3/17/2022**	SeqNo: **3053829** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	ND	0.0060								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A86535**	RunNo: **86535**
Prep Date:	Analysis Date: **3/17/2022**	SeqNo: **3053831** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	0.0059	0.0060	0.006000	0	98.3	50	150			J
Silver	0.0053	0.0050	0.005000	0	105	50	150			
Vanadium	0.010	0.050	0.01000	0	103	50	150			J
Zinc	0.012	0.010	0.01000	0	117	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A86535**	RunNo: **86535**
Prep Date:	Analysis Date: **3/17/2022**	SeqNo: **3053835** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	0.49	0.0060	0.5000	0	97.2	85	115			
Silver	0.099	0.0050	0.1000	0	99.1	85	115			
Vanadium	0.50	0.050	0.5000	0	101	85	115			
Zinc	0.50	0.010	0.5000	0	99.2	85	115			

Sample ID: **2203825-001EMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB 3-15-22**	Batch ID: **A86535**	RunNo: **86535**
Prep Date:	Analysis Date: **3/17/2022**	SeqNo: **3053845** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	0.50	0.0060	0.5000	0	99.1	70	130			
Silver	0.10	0.0050	0.1000	0	102	70	130			
Vanadium	0.52	0.050	0.5000	0	103	70	130			
Zinc	0.52	0.010	0.5000	0.006303	102	70	130			

Sample ID: **2203825-001EMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB 3-15-22**	Batch ID: **A86535**	RunNo: **86535**
Prep Date:	Analysis Date: **3/17/2022**	SeqNo: **3053846** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203825**
28-Mar-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **2203825-001EMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB 3-15-22** Batch ID: **A86535** RunNo: **86535**
Prep Date: Analysis Date: **3/17/2022** SeqNo: **3053846** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	0.50	0.0060	0.5000	0	99.1	70	130	0.0498	20	
Silver	0.10	0.0050	0.1000	0	103	70	130	0.505	20	
Vanadium	0.52	0.050	0.5000	0	104	70	130	0.869	20	
Zinc	0.52	0.010	0.5000	0.006303	102	70	130	0.103	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203825**

28-Mar-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB-66254**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **66254**	RunNo: **86616**
Prep Date: **3/17/2022**	Analysis Date: **3/21/2022**	SeqNo: **3057671** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Barium	ND	0.0010								
Beryllium	ND	0.0010								
Cadmium	ND	0.00050								
Chromium	ND	0.0010								
Lead	ND	0.00050								
Nickel	ND	0.0010								
Selenium	ND	0.0010								
Silver	ND	0.00050								
Zinc	ND	0.010								

Sample ID: **MSLLLCS-66254**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **66254**	RunNo: **86616**
Prep Date: **3/17/2022**	Analysis Date: **3/21/2022**	SeqNo: **3057672** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0012	0.0010	0.001000	0	116	50	150			
Arsenic	0.00095	0.0010	0.001000	0	95.3	50	150			J
Barium	0.0010	0.0010	0.001000	0	100	50	150			
Beryllium	0.0012	0.0010	0.001000	0	115	50	150			
Cadmium	0.00057	0.00050	0.0005001	0	113	50	150			
Chromium	0.0011	0.0010	0.001000	0	106	50	150			
Lead	0.00049	0.00050	0.0005001	0	98.9	50	150			J
Nickel	0.00086	0.0010	0.001000	0	86.5	50	150			J
Selenium	0.00089	0.0010	0.001000	0	89.2	50	150			J
Silver	0.00052	0.00050	0.0005001	0	104	50	150			
Zinc	0.0095	0.010	0.01000	0	94.7	50	150			J

Sample ID: **MSLCS-66254**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **66254**	RunNo: **86616**
Prep Date: **3/17/2022**	Analysis Date: **3/21/2022**	SeqNo: **3057673** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	99.3	85	115			
Arsenic	0.025	0.0010	0.02500	0	101	85	115			
Barium	0.026	0.0010	0.02500	0	102	85	115			
Beryllium	0.027	0.0010	0.02500	0	109	85	115			
Cadmium	0.013	0.00050	0.01250	0	101	85	115			
Chromium	0.026	0.0010	0.02500	0	104	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203825**

28-Mar-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **MSLCS-66254** SampType: **LCS** TestCode: **EPA 200.8: Metals**

Client ID: **LCSW** Batch ID: **66254** RunNo: **86616**

Prep Date: **3/17/2022** Analysis Date: **3/21/2022** SeqNo: **3057673** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.013	0.00050	0.01250	0	102	85	115			
Nickel	0.025	0.0010	0.02500	0	102	85	115			
Selenium	0.026	0.0010	0.02500	0	105	85	115			
Silver	0.013	0.00050	0.01250	0	103	85	115			
Zinc	0.25	0.010	0.2500	0	99.9	85	115			

Sample ID: **2203825-001DMSLL** SampType: **MS** TestCode: **EPA 200.8: Metals**

Client ID: **EB 3-15-22** Batch ID: **66254** RunNo: **86616**

Prep Date: **3/17/2022** Analysis Date: **3/21/2022** SeqNo: **3057706** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	0.024	0.0010	0.02500	0	96.1	70	130			
Vanadium	0.025	0.0010	0.02500	0	98.1	70	130			
Antimony	0.026	0.0010	0.02500	0	105	70	130			
Arsenic	0.024	0.0010	0.02500	0	96.2	70	130			
Barium	0.024	0.0010	0.02500	0	94.0	70	130			
Beryllium	0.026	0.0010	0.02500	0	103	70	130			
Cadmium	0.012	0.00050	0.01250	0	99.9	70	130			
Chromium	0.025	0.0010	0.02500	0	99.6	70	130			
Lead	0.012	0.00050	0.01250	0	94.4	70	130			
Nickel	0.024	0.0010	0.02500	0	95.3	70	130			
Selenium	0.021	0.0010	0.02500	0	83.1	70	130			
Silver	0.012	0.00050	0.01250	0	97.5	70	130			
Zinc	0.25	0.010	0.2500	0	98.5	70	130			

Sample ID: **2203825-001DMSDL** SampType: **MSD** TestCode: **EPA 200.8: Metals**

Client ID: **EB 3-15-22** Batch ID: **66254** RunNo: **86616**

Prep Date: **3/17/2022** Analysis Date: **3/21/2022** SeqNo: **3057707** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	0.025	0.0010	0.02500	0	100	70	130	3.93	20	
Vanadium	0.025	0.0010	0.02500	0	102	70	130	3.54	20	
Antimony	0.027	0.0010	0.02500	0	107	70	130	1.59	20	
Arsenic	0.025	0.0010	0.02500	0	102	70	130	5.79	20	
Barium	0.024	0.0010	0.02500	0	97.4	70	130	3.51	20	
Beryllium	0.027	0.0010	0.02500	0	108	70	130	4.80	22	
Cadmium	0.013	0.00050	0.01250	0	105	70	130	4.72	20	
Chromium	0.026	0.0010	0.02500	0	102	70	130	2.70	20	
Lead	0.012	0.00050	0.01250	0	98.9	70	130	4.69	20	
Nickel	0.026	0.0010	0.02500	0	102	70	130	7.20	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203825**

28-Mar-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **2203825-001DMSDL**	SampType: **MSD**	TestCode: **EPA 200.8: Metals**
Client ID: **EB 3-15-22**	Batch ID: **66254**	RunNo: **86616**
Prep Date: **3/17/2022**	Analysis Date: **3/21/2022**	SeqNo: **3057707** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.024	0.0010	0.02500	0	95.6	70	130	14.1	20	
Silver	0.013	0.00050	0.01250	0	102	70	130	4.11	20	
Zinc	0.26	0.010	0.2500	0	102	70	130	3.55	20	

Sample ID: **2203825-002DMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Metals**
Client ID: **OW-1**	Batch ID: **66254**	RunNo: **86616**
Prep Date: **3/17/2022**	Analysis Date: **3/21/2022**	SeqNo: **3057721** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vanadium	0.070	0.0050	0.02500	0.04439	102	70	130			
Barium	0.067	0.0050	0.02500	0.04437	91.2	70	130			

Sample ID: **2203825-002DMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Metals**
Client ID: **OW-1**	Batch ID: **66254**	RunNo: **86616**
Prep Date: **3/17/2022**	Analysis Date: **3/21/2022**	SeqNo: **3057747** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	0.025	0.0010	0.02500	0	98.8	70	130			
Antimony	0.026	0.0010	0.02500	0	104	70	130			
Arsenic	0.027	0.0010	0.02500	0.0006876	107	70	130			
Beryllium	0.027	0.0010	0.02500	0	107	70	130			
Cadmium	0.011	0.00050	0.01250	0	84.6	70	130			
Chromium	0.030	0.0010	0.02500	0.003087	107	70	130			
Lead	0.011	0.00050	0.01250	0.0001951	85.0	70	130			
Nickel	0.026	0.0010	0.02500	0.002052	95.5	70	130			
Selenium	0.027	0.0010	0.02500	0.002696	97.6	70	130			
Silver	0.0099	0.00050	0.01250	0	79.2	70	130			
Zinc	0.24	0.010	0.2500	0	94.7	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203825**

28-Mar-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B86600**	RunNo: **86600**
Prep Date:	Analysis Date: **3/18/2022**	SeqNo: **3056942** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Barium	ND	0.0010								
Beryllium	ND	0.0010								
Cadmium	ND	0.00050								
Chromium	ND	0.0010								
Lead	ND	0.00050								
Nickel	ND	0.0010								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B86600**	RunNo: **86600**
Prep Date:	Analysis Date: **3/18/2022**	SeqNo: **3056943** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.0011	0.0010	0.001000	0	110	50	150			
Barium	0.0012	0.0010	0.001000	0	120	50	150			
Beryllium	0.0011	0.0010	0.001000	0	107	50	150			
Cadmium	0.00054	0.00050	0.0005001	0	108	50	150			
Chromium	0.0011	0.0010	0.001000	0	107	50	150			
Lead	0.00054	0.00050	0.0005001	0	109	50	150			
Nickel	0.0011	0.0010	0.001000	0	106	50	150			
Selenium	0.0012	0.0010	0.001000	0	116	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B86600**	RunNo: **86600**
Prep Date:	Analysis Date: **3/18/2022**	SeqNo: **3056944** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.026	0.0010	0.02500	0	103	85	115			
Barium	0.025	0.0010	0.02500	0	102	85	115			
Beryllium	0.026	0.0010	0.02500	0	105	85	115			
Cadmium	0.014	0.00050	0.01250	0	108	85	115			
Chromium	0.026	0.0010	0.02500	0	103	85	115			
Lead	0.013	0.00050	0.01250	0	106	85	115			
Nickel	0.026	0.0010	0.02500	0	105	85	115			
Selenium	0.028	0.0010	0.02500	0	113	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203825**

28-Mar-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A86624**	RunNo: **86624**
Prep Date:	Analysis Date: **3/21/2022**	SeqNo: **3058028** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Barium	ND	0.0010								
Beryllium	ND	0.0010								
Cadmium	ND	0.00050								
Chromium	ND	0.0010								
Lead	ND	0.00050								
Nickel	ND	0.0010								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A86624**	RunNo: **86624**
Prep Date:	Analysis Date: **3/21/2022**	SeqNo: **3058029** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0011	0.0010	0.001000	0	115	50	150			
Arsenic	0.0010	0.0010	0.001000	0	101	50	150			
Barium	0.00091	0.0010	0.001000	0	91.1	50	150			J
Beryllium	0.0011	0.0010	0.001000	0	106	50	150			
Cadmium	0.00051	0.00050	0.0005001	0	103	50	150			
Chromium	0.0010	0.0010	0.001000	0	102	50	150			
Lead	0.00054	0.00050	0.0005001	0	108	50	150			
Nickel	0.00098	0.0010	0.001000	0	98.4	50	150			J
Selenium	0.00097	0.0010	0.001000	0	96.6	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A86624**	RunNo: **86624**
Prep Date:	Analysis Date: **3/21/2022**	SeqNo: **3058030** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	102	85	115			
Arsenic	0.026	0.0010	0.02500	0	103	85	115			
Barium	0.026	0.0010	0.02500	0	103	85	115			
Beryllium	0.027	0.0010	0.02500	0	107	85	115			
Cadmium	0.013	0.00050	0.01250	0	105	85	115			
Chromium	0.027	0.0010	0.02500	0	107	85	115			
Lead	0.013	0.00050	0.01250	0	105	85	115			
Nickel	0.026	0.0010	0.02500	0	105	85	115			
Selenium	0.025	0.0010	0.02500	0	99.8	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203825**

28-Mar-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **2203825-007EMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **MKTF-11**	Batch ID: **A86624**	RunNo: **86624**
Prep Date:	Analysis Date: **3/21/2022**	SeqNo: **3058056** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.027	0.0010	0.02500	0	107	70	130			

Sample ID: **2203825-007EMSDL**	SampType: **MSD**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **MKTF-11**	Batch ID: **A86624**	RunNo: **86624**
Prep Date:	Analysis Date: **3/21/2022**	SeqNo: **3058057** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.023	0.0010	0.02500	0	92.5	70	130	14.9	20	

Sample ID: **2203825-008EMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **MKTF-10**	Batch ID: **A86624**	RunNo: **86624**
Prep Date:	Analysis Date: **3/21/2022**	SeqNo: **3058059** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	105	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203825**
28-Mar-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB-66284** SampType: **MBLK** TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW** Batch ID: **66284** RunNo: **86625**
Prep Date: **3/21/2022** Analysis Date: **3/21/2022** SeqNo: **3058104** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-66284** SampType: **LCSLL** TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC** Batch ID: **66284** RunNo: **86625**
Prep Date: **3/21/2022** Analysis Date: **3/21/2022** SeqNo: **3058105** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00016	0.00020	0.0001501	0	109	50	150			J

Sample ID: **LCS-66284** SampType: **LCS** TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW** Batch ID: **66284** RunNo: **86625**
Prep Date: **3/21/2022** Analysis Date: **3/21/2022** SeqNo: **3058106** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0049	0.00020	0.005000	0	98.6	85	115			

Sample ID: **2203825-010DMS** SampType: **MS** TestCode: **EPA Method 245.1: Mercury**
Client ID: **DUP-3-15-22** Batch ID: **66284** RunNo: **86625**
Prep Date: **3/21/2022** Analysis Date: **3/21/2022** SeqNo: **3058154** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	103	75	125			

Sample ID: **2203825-010DMSD** SampType: **MSD** TestCode: **EPA Method 245.1: Mercury**
Client ID: **DUP-3-15-22** Batch ID: **66284** RunNo: **86625**
Prep Date: **3/21/2022** Analysis Date: **3/21/2022** SeqNo: **3058155** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0053	0.00020	0.005000	0	105	75	125	2.36	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203825**

28-Mar-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB-66256**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **66256**	RunNo: **86618**							
Prep Date: **3/21/2022**	Analysis Date: **3/21/2022**	SeqNo: **3057941**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **MB-66256**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **66256**	RunNo: **86618**							
Prep Date: **3/21/2022**	Analysis Date: **3/21/2022**	SeqNo: **3057948**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-66256**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **LCSW**	Batch ID: **66256**	RunNo: **86618**							
Prep Date: **3/21/2022**	Analysis Date: **3/21/2022**	SeqNo: **3057949**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.098	0.010	0.1000	0	98.4	70	130			

Sample ID: **LCSD-66256**	SampType: **LCSD**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **LCSS02**	Batch ID: **66256**	RunNo: **86618**							
Prep Date: **3/21/2022**	Analysis Date: **3/21/2022**	SeqNo: **3057951**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.098	0.010	0.1000	0	98.3	70	130	0.0963	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203825**

28-Mar-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB-66219**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **PBW**	Batch ID: **66219**	RunNo: **86571**							
Prep Date: **3/16/2022**	Analysis Date: **3/18/2022**	SeqNo: **3057145**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.018	0.064								J
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.037		0.03750		98.4	42.2	138			

Sample ID: **LCS-66219**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSW**	Batch ID: **66219**	RunNo: **86571**							
Prep Date: **3/16/2022**	Analysis Date: **3/18/2022**	SeqNo: **3057146**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.15	0.064	0.1875	0	77.8	31.7	75.4			S
Surr: DNOP	0.022		0.01875		116	42.2	138			

Sample ID: **LCSD-66219**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSS02**	Batch ID: **66219**	RunNo: **86571**							
Prep Date: **3/16/2022**	Analysis Date: **3/18/2022**	SeqNo: **3057152**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.13	0.064	0.1875	0	70.5	31.7	75.4	9.82	20	
Surr: DNOP	0.019		0.01875		99.4	42.2	138	0	0	

Sample ID: **MB-66236**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **PBW**	Batch ID: **66236**	RunNo: **86643**							
Prep Date: **3/17/2022**	Analysis Date: **3/22/2022**	SeqNo: **3059913**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.030	0.064								J
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.039		0.03750		105	42.2	138			

Sample ID: **LCSD-66236**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSS02**	Batch ID: **66236**	RunNo: **86643**							
Prep Date: **3/17/2022**	Analysis Date: **3/22/2022**	SeqNo: **3059915**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.11	0.064	0.1875	0	58.7	31.7	75.4	5.39	20	
Surr: DNOP	0.020		0.01875		105	42.2	138	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203825**
28-Mar-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **LCS-66236**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSW**	Batch ID: **66236**	RunNo: **86643**
Prep Date: **3/17/2022**	Analysis Date: **3/22/2022**	SeqNo: **3059918** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.12	0.064	0.1875	0	62.0	31.7	75.4			
Surr: DNOP	0.020		0.01875		107	42.2	138			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203825**
28-Mar-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW** Batch ID: **R86601** RunNo: **86601**
Prep Date: Analysis Date: **3/18/2022** SeqNo: **3056870** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	94.9	70	130			
Toluene	21	1.0	20.00	0	107	70	130			
Chlorobenzene	22	1.0	20.00	0	108	70	130			
1,1-Dichloroethene	17	1.0	20.00	0	86.9	70	130			
Trichloroethene (TCE)	17	1.0	20.00	0	86.6	70	130			
Surr: 1,2-Dichloroethane-d4	9.3		10.00		93.3	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		105	70	130			
Surr: Dibromofluoromethane	9.1		10.00		91.2	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW** Batch ID: **R86601** RunNo: **86601**
Prep Date: Analysis Date: **3/18/2022** SeqNo: **3056908** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	0.66	3.0								J
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203825**
28-Mar-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R86601**	RunNo: **86601**
Prep Date:	Analysis Date: **3/18/2022**	SeqNo: **3056908** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Styrene	ND	1.0								
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.1		10.00		91.2	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		105	70	130			
Surr: Dibromofluoromethane	9.1		10.00		90.8	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R86626**	RunNo: **86626**
Prep Date:	Analysis Date: **3/21/2022**	SeqNo: **3058196** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	96.9	70	130			
Toluene	22	1.0	20.00	0	111	70	130			
Chlorobenzene	23	1.0	20.00	0	113	70	130			
1,1-Dichloroethene	19	1.0	20.00	0	93.6	70	130			
Trichloroethene (TCE)	17	1.0	20.00	0	86.8	70	130			
Surr: 1,2-Dichloroethane-d4	9.0		10.00		90.1	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	9.0		10.00		89.7	70	130			
Surr: Toluene-d8	9.9		10.00		98.8	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R86626**	RunNo: **86626**
Prep Date:	Analysis Date: **3/21/2022**	SeqNo: **3058226** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Acetone	ND	10								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203825**
28-Mar-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R86626**	RunNo: **86626**
Prep Date:	Analysis Date: **3/21/2022**	SeqNo: **3058226** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	0.68	3.0								J
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.0		10.00		90.0	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		105	70	130			
Surr: Dibromofluoromethane	9.6		10.00		95.7	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203825**

28-Mar-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **mb-66226**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **66226**	RunNo: **86667**
Prep Date: **3/17/2022**	Analysis Date: **3/22/2022**	SeqNo: **3059885** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	5.0								
2,4-Dinitrophenol	ND	5.0								
1-Methylnaphthalene	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	5.0								
3+4-Methylphenol	ND	5.0								
Naphthalene	ND	5.0								
Phenol	ND	5.0								
Pyridine	ND	10								
2,4,6-Trichlorophenol	ND	5.0								
Surr: 2-Fluorophenol	89		200.0		44.3	29.4	87.7			
Surr: Phenol-d5	68		200.0		33.9	28.5	64.7			
Surr: 2,4,6-Tribromophenol	110		200.0		53.7	18.6	129			
Surr: Nitrobenzene-d5	57		100.0		56.7	36.9	103			
Surr: 2-Fluorobiphenyl	54		100.0		54.0	38.1	99.9			
Surr: 4-Terphenyl-d14	94		100.0		94.3	48	155			

Sample ID: **lcs-66226**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **66226**	RunNo: **86693**
Prep Date: **3/17/2022**	Analysis Date: **3/23/2022**	SeqNo: **3061232** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	43	5.0	100.0	0	42.9	15	87.6			
Phenol	63	5.0	200.0	0	31.4	16.8	70.5			
Surr: 2-Fluorophenol	82		200.0		41.1	29.4	87.7			
Surr: Phenol-d5	64		200.0		31.8	28.5	64.7			
Surr: 2,4,6-Tribromophenol	120		200.0		60.6	18.6	129			
Surr: Nitrobenzene-d5	56		100.0		55.7	36.9	103			
Surr: 2-Fluorobiphenyl	51		100.0		51.0	38.1	99.9			
Surr: 4-Terphenyl-d14	86		100.0		85.7	48	155			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203825**

28-Mar-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **lcsd-66226**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**							
Client ID: **LCSS02**	Batch ID: **66226**	RunNo: **86693**							
Prep Date: **3/17/2022**	Analysis Date: **3/23/2022**	SeqNo: **3061233**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	52	5.0	100.0	0	52.0	15	87.6	19.2	30.4	
Phenol	69	5.0	200.0	0	34.4	16.8	70.5	8.98	37.2	
Surr: 2-Fluorophenol	90		200.0		45.2	29.4	87.7	0	0	
Surr: Phenol-d5	69		200.0		34.6	28.5	64.7	0	0	
Surr: 2,4,6-Tribromophenol	120		200.0		59.9	18.6	129	0	0	
Surr: Nitrobenzene-d5	61		100.0		60.8	36.9	103	0	0	
Surr: 2-Fluorobiphenyl	54		100.0		54.2	38.1	99.9	0	0	
Surr: 4-Terphenyl-d14	88		100.0		88.0	48	155	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203825**

28-Mar-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **mb-66226**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**							
Client ID: **PBW**	Batch ID: **R86628**	RunNo: **86628**							
Prep Date:	Analysis Date: **3/21/2022**	SeqNo: **3058293**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.10								
2-Methylnaphthalene	ND	0.10								
Acenaphthene	ND	0.10								
Fluorene	ND	0.10								
Phenanthrene	ND	0.10								
Anthracene	ND	0.10								
Fluoranthene	ND	0.20								
Pyrene	0.22	0.40								J
Benz(a)anthracene	ND	0.10								
Chrysene	ND	0.10								
Benzo(b)fluoranthene	ND	0.10								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	63		100.0		63.4	31.6	100			
Surr: 2,4,6-Tribromophenol	84		200.0		42.2	22	101			
Surr: 2-Fluorobiphenyl	62		100.0		61.6	26.7	90.1			
Surr: 4-Terphenyl-d14	110		100.0		112	72.3	147			

Sample ID: **lcs-66226**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**							
Client ID: **LCSW**	Batch ID: **R86628**	RunNo: **86628**							
Prep Date:	Analysis Date: **3/21/2022**	SeqNo: **3058294**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.68	0.10	2.000	0	34.0	20.2	48.4			
Naphthalene	1.0	0.10	2.000	0	52.0	21.3	79.9			
1-Methylnaphthalene	1.0	0.10	2.000	0	52.0	22.2	80.3			
2-Methylnaphthalene	1.0	0.10	2.000	0	51.0	20.6	80.1			
Acenaphthene	1.2	0.10	2.000	0	58.0	29.8	82.7			
Fluorene	1.2	0.10	2.000	0	59.0	33.3	86			
Phenanthrene	1.3	0.10	2.000	0	64.0	38.2	93.9			
Anthracene	1.3	0.10	2.000	0	64.0	41.1	95.6			
Fluoranthene	1.7	0.20	2.000	0	87.0	52.9	123			
Pyrene	1.7	0.40	2.000	0	84.0	51	113			
Benz(a)anthracene	2.1	0.10	2.000	0	105	51	147			
Chrysene	1.7	0.10	2.000	0	87.0	55.3	115			
Benzo(b)fluoranthene	1.9	0.10	2.000	0	96.0	44.4	136			
Indeno(1,2,3-cd)pyrene	2.3	0.30	2.000	0	115	31.4	165			
Surr: Nitrobenzene-d5	3.5		5.000		69.2	31.6	100			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203825**

28-Mar-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **lcs-66226**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**							
Client ID: **LCSW**	Batch ID: **R86628**	RunNo: **86628**							
Prep Date:	Analysis Date: **3/21/2022**	SeqNo: **3058294**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	6.5		10.00		65.4	22	101			
Surr: 2-Fluorobiphenyl	3.1		5.000		62.0	26.7	90.1			
Surr: 4-Terphenyl-d14	6.3		5.000		126	72.3	147			

Sample ID: **lcsd-66226**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**							
Client ID: **LCSS02**	Batch ID: **R86628**	RunNo: **86628**							
Prep Date:	Analysis Date: **3/21/2022**	SeqNo: **3058295**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.70	0.10	2.000	0	35.0	20.2	48.4	2.90	30.1	
Naphthalene	1.0	0.10	2.000	0	52.0	21.3	79.9	0	25.6	
1-Methylnaphthalene	1.1	0.10	2.000	0	53.0	22.2	80.3	1.90	25	
2-Methylnaphthalene	1.0	0.10	2.000	0	52.0	20.6	80.1	1.94	25	
Acenaphthene	1.2	0.10	2.000	0	58.0	29.8	82.7	0	27.8	
Fluorene	1.2	0.10	2.000	0	61.0	33.3	86	3.33	26.4	
Phenanthrene	1.3	0.10	2.000	0	64.0	38.2	93.9	0	27.9	
Anthracene	1.3	0.10	2.000	0	66.0	41.1	95.6	3.08	25.6	
Fluoranthene	1.8	0.20	2.000	0	88.0	52.9	123	1.14	22.8	
Pyrene	1.7	0.40	2.000	0	86.0	51	113	2.35	20	
Benz(a)anthracene	2.0	0.10	2.000	0	100	51	147	4.88	24.1	
Chrysene	1.7	0.10	2.000	0	86.0	55.3	115	1.16	20	
Benzo(b)fluoranthene	1.9	0.10	2.000	0	95.0	44.4	136	1.05	24.5	
Indeno(1,2,3-cd)pyrene	2.2	0.30	2.000	0	112	31.4	165	2.64	21.1	
Surr: Nitrobenzene-d5	3.2		5.000		63.2	31.6	100	0	0	
Surr: 2,4,6-Tribromophenol	6.0		10.00		60.0	22	101	0	0	
Surr: 2-Fluorobiphenyl	2.7		5.000		54.4	26.7	90.1	0	0	
Surr: 4-Terphenyl-d14	6.1		5.000		122	72.3	147	0	0	

Sample ID: **mb-66244**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**							
Client ID: **PBW**	Batch ID: **R86665**	RunNo: **86665**							
Prep Date:	Analysis Date: **3/22/2022**	SeqNo: **3059830**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.10								
2-Methylnaphthalene	ND	0.10								
Acenaphthene	ND	0.10								
Fluorene	ND	0.10								
Phenanthrene	ND	0.10								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203825**
28-Mar-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **mb-66244**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**						
Client ID: **PBW**	Batch ID: **R86665**	RunNo: **86665**						
Prep Date:	Analysis Date: **3/22/2022**	SeqNo: **3059830**	Units: **µg/L**					

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Anthracene	ND	0.10								
Fluoranthene	ND	0.20								
Pyrene	ND	0.20								
Benz(a)anthracene	ND	0.10								
Chrysene	ND	0.10								
Benzo(b)fluoranthene	ND	0.10								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	59		100.0		58.9	31.6	100			
Surr: 2,4,6-Tribromophenol	82		200.0		41.0	22	101			
Surr: 2-Fluorobiphenyl	55		100.0		55.2	26.7	90.1			
Surr: 4-Terphenyl-d14	98		100.0		98.0	72.3	147			

Sample ID: **lcs-66244-lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**						
Client ID: **LCSW**	Batch ID: **R86665**	RunNo: **86665**						
Prep Date:	Analysis Date: **3/22/2022**	SeqNo: **3059831**	Units: **µg/L**					

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.72	0.10	2.000	0	36.0	20.2	48.4			
Naphthalene	1.1	0.10	2.000	0	57.0	21.3	79.9			
1-Methylnaphthalene	1.2	0.10	2.000	0	58.0	22.2	80.3			
2-Methylnaphthalene	1.1	0.10	2.000	0	56.0	20.6	80.1			
Acenaphthene	1.3	0.10	2.000	0	66.0	29.8	82.7			
Fluorene	1.4	0.10	2.000	0	70.0	33.3	86			
Phenanthrene	1.5	0.10	2.000	0	73.0	38.2	93.9			
Anthracene	1.5	0.10	2.000	0	77.0	41.1	95.6			
Fluoranthene	1.8	0.20	2.000	0	88.0	52.9	123			
Pyrene	1.7	0.20	2.000	0	83.0	51	113			
Benz(a)anthracene	2.0	0.10	2.000	0	100	51	147			
Chrysene	1.7	0.10	2.000	0	85.0	55.3	115			
Benzo(b)fluoranthene	1.9	0.10	2.000	0	95.0	44.4	136			
Indeno(1,2,3-cd)pyrene	2.2	0.30	2.000	0	110	31.4	165			
Surr: Nitrobenzene-d5	71		100.0		70.8	31.6	100			
Surr: 2,4,6-Tribromophenol	93		200.0		46.4	22	101			
Surr: 2-Fluorobiphenyl	66		100.0		66.3	26.7	90.1			
Surr: 4-Terphenyl-d14	91		100.0		90.6	72.3	147			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203825**

28-Mar-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **lcsd-66244-lf**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**							
Client ID: **LCSS02**	Batch ID: **R86665**	RunNo: **86665**							
Prep Date:	Analysis Date: **3/22/2022**	SeqNo: **3059832**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.74	0.10	2.000	0	37.0	20.2	48.4	2.74	30.1	
Surr: Nitrobenzene-d5	70		100.0		70.2	31.6	100	0	0	
Surr: 2,4,6-Tribromophenol	90		200.0		45.2	22	101	0	0	
Surr: 2-Fluorobiphenyl	65		100.0		65.3	26.7	90.1	0	0	
Surr: 4-Terphenyl-d14	91		100.0		91.3	72.3	147	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203825**

28-Mar-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **2.5ug lcs gro**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **R86601**	RunNo: **86601**
Prep Date:	Analysis Date: **3/18/2022**	SeqNo: **3057007** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.51	0.050	0.5000	0	103	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		98.0	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **R86601**	RunNo: **86601**
Prep Date:	Analysis Date: **3/18/2022**	SeqNo: **3057029** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.044	0.050								J
Surr: 4-Bromofluorobenzene	11		10.00		107	70	130			

Sample ID: **2.5ug lcs gro**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **G86626**	RunNo: **86626**
Prep Date:	Analysis Date: **3/21/2022**	SeqNo: **3058229** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.50	0.050	0.5000	0	101	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **G86626**	RunNo: **86626**
Prep Date:	Analysis Date: **3/21/2022**	SeqNo: **3058249** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.034	0.050								J
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: Marathon | Work Order Number: 2203825 | RcptNo: 1

Received By: Cheyenne Cason 3/16/2022 8:00:00 AM

Completed By: Cheyenne Cason 3/16/2022 8:25:20 AM

Reviewed By: JR 3/16/22

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preserved added to bottles? Yes ☑ ~~No ☑~~ NA ☐ CMC 3/16/22
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☑ No ☐ NA ☐
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: 18 9 (<2 or >12 unless noted)

Adjusted? ~~N~~ YES

Checked by: CMC 3/16/22

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks: added ~0.5mL HNO3 to COSD for Ph<2 CMC 3/16/22

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			
2	-0.1	Good	Yes			
3	0.8	Good	Yes			
4	0.5	Good	Yes			

ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: **Marathon** Work Order Number: **2203825** RcptNo: 1

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
5	0.6	Good	Yes			

Released to Imaging: 4/21/2023 9:40:26 AM
Received by OCD: 4/21/2023 9:21:57 AM

Chain-of-Custody Record

Client: Marathon Gallup Refinery

Mailing Address: 92 Giant Crossing Road
Jamestown, NM,87347

Phone #: 808-640-1823

Email or Fax#:

QA/QC Package:
X Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
X Standard Rush

Project Name:
2022 GW Sampling 1st Quarter

Project #: **697-080-001**

Project Manager:
Lesli Alexander/Mackensie Swift

Sampler: Hilario Trejo
On Ice: ☑ Yes ☐ No
# of Coolers: 5
Cooler Temp(including CF): See Remark

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2203825	See Analyte List	8260B: VOC	8270C: SVOC	8270C SIM: PAH, 1,4 Dioxane	8015: TPH GRO/DRO/MRO	E200.7: Metals	E200.7: Dissolved Metals	E245.1 Mercury	E504.1: EDB	E335.4: Cyanide Subbed		537.1: PFAS	SM 5201B: BOD	410.4: COD	SM9223B E Coli
3/15	8:30		EB-3-15-22	13		001	X	X	X	X	X	X	X	X	X	X					
3/15	9:00		OW-1	13		002	X	X	X	X	X	X	X	X	X	X					
3/15	10:00		MKTE-17R	13		003	X	X	X	X	X	X	X	X	X	X					
3/15	10:20		MKTE-18R	13		004	X	X	X	X	X	X	X	X	X	X					
3/15	10:45		MKTE-38	13		005	X	X	X	X	X	X	X	X	X	X					
3/15	11:10		MKTE-64R	13		006	X	X	X	X	X	X	X	X	X	X					
3/15	11:30		MKTE-11	13		007	X	X	X	X	X	X	X	X	X	X					
3/15	11:50		MKTE-16	13		008	X	X	X	X	X	X	X	X	X	X					
3/15	11:50		FB-3-15-22	2		009		X	[redacted]	[redacted]											
3/15	—		DUP-3-15-22	13		010	X	X	X	X	X	X	X	X	X	X					
[redacted]			Trip Blank			011															

Date	Time	Relinquished by	Received by	Via	Date	Time
3/15	1:00	Hilario Trejo	CM	Courier	3/16/22	0800

0.8+0.2=1.0 0.4+0.2=0.6
-0.3+0.2=-0.1
0.6+0.2=0.8
0.3+0.2=0.5

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

April 22, 2022

Lesli Alexander

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX (505) 632-3911

RE: 2022 GW Sampling 1st Qtr OrderNo.: 2203920

Dear Lesli Alexander:

Hall Environmental Analysis Laboratory received 9 sample(s) on 3/17/2022 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued April 12, 2022.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **2203920**
Date: **4/22/2022**

CLIENT: Marathon
Project: 2022 GW Sampling 1st Qtr

Analytical Notes Regarding EPA Method 8270:
"S" flagged surrogates denote low surrogate recoveries due to matrix interferences/sample dilution.

Analytical Report
Lab Order: **2203920**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-16-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/16/2022 8:00:00 AM
Lab ID: 2203920-001A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	3/21/2022 3:14:50 PM	R86626
Toluene	ND	0.20	1.0		µg/L	1	3/21/2022 3:14:50 PM	R86626
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/21/2022 3:14:50 PM	R86626
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/21/2022 3:14:50 PM	R86626
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/21/2022 3:14:50 PM	R86626
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/21/2022 3:14:50 PM	R86626
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	3/21/2022 3:14:50 PM	R86626
Acetone	ND	2.5	10		µg/L	1	3/21/2022 3:14:50 PM	R86626
Bromomethane	ND	0.85	3.0		µg/L	1	3/21/2022 3:14:50 PM	R86626
2-Butanone	8.5	2.0	10	J	µg/L	1	3/21/2022 3:14:50 PM	R86626
Carbon disulfide	ND	0.59	10		µg/L	1	3/21/2022 3:14:50 PM	R86626
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/21/2022 3:14:50 PM	R86626
Chloroform	ND	0.13	1.0		µg/L	1	3/21/2022 3:14:50 PM	R86626
Chloromethane	1.1	0.41	3.0	J	µg/L	1	3/21/2022 3:14:50 PM	R86626
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/21/2022 3:14:50 PM	R86626
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/21/2022 3:14:50 PM	R86626
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/21/2022 3:14:50 PM	R86626
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/21/2022 3:14:50 PM	R86626
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/21/2022 3:14:50 PM	R86626
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/21/2022 3:14:50 PM	R86626
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/21/2022 3:14:50 PM	R86626
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/21/2022 3:14:50 PM	R86626
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/21/2022 3:14:50 PM	R86626
Styrene	ND	0.14	1.0		µg/L	1	3/21/2022 3:14:50 PM	R86626
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/21/2022 3:14:50 PM	R86626
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/21/2022 3:14:50 PM	R86626
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/21/2022 3:14:50 PM	R86626
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/21/2022 3:14:50 PM	R86626
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/21/2022 3:14:50 PM	R86626
Surr: 1,2-Dichloroethane-d4	92.3	0	70-130		%Rec	1	3/21/2022 3:14:50 PM	R86626
Surr: 4-Bromofluorobenzene	105	0	70-130		%Rec	1	3/21/2022 3:14:50 PM	R86626
Surr: Dibromofluoromethane	98.4	0	70-130		%Rec	1	3/21/2022 3:14:50 PM	R86626
Surr: Toluene-d8	99.6	0	70-130		%Rec	1	3/21/2022 3:14:50 PM	R86626
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.036	0.012	0.050	J	mg/L	1	3/21/2022 3:14:50 PM	G86626
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	1	3/21/2022 3:14:50 PM	G86626

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203920**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-16-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/16/2022 8:00:00 AM
Lab ID: 2203920-001B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0093		µg/L	1	3/21/2022 6:37:00 PM	66256

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203920**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-16-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/16/2022 8:00:00 AM
Lab ID: 2203920-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	ND	0.016	0.064		mg/L	1	3/22/2022 4:15:00 PM	66236
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/22/2022 4:15:00 PM	66236
Surr: DNOP	106	0	42.2-138		%Rec	1	3/22/2022 4:15:00 PM	66236
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	1.1	20		µg/L	1	3/23/2022 3:55:03 PM	66244
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/23/2022 3:55:03 PM	66244
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/23/2022 3:55:03 PM	66244
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/23/2022 3:55:03 PM	66244
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/23/2022 3:55:03 PM	66244
Diethyl phthalate	ND	3.9	10		µg/L	1	3/23/2022 3:55:03 PM	66244
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/23/2022 3:55:03 PM	66244
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/23/2022 3:55:03 PM	66244
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/23/2022 3:55:03 PM	66244
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/23/2022 3:55:03 PM	66244
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/23/2022 3:55:03 PM	66244
Phenol	ND	0.33	5.0		µg/L	1	3/23/2022 3:55:03 PM	66244
Pyridine	ND	10	10		µg/L	1	3/23/2022 3:55:03 PM	66244
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/23/2022 3:55:03 PM	66244
Surr: 2-Fluorophenol	45.6	0	29.4-87.7		%Rec	1	3/23/2022 3:55:03 PM	66244
Surr: Phenol-d5	36.0	0	28.5-64.7		%Rec	1	3/23/2022 3:55:03 PM	66244
Surr: 2,4,6-Tribromophenol	64.6	0	18.6-129		%Rec	1	3/23/2022 3:55:03 PM	66244
Surr: Nitrobenzene-d5	56.8	0	36.9-103		%Rec	1	3/23/2022 3:55:03 PM	66244
Surr: 2-Fluorobiphenyl	54.4	0	38.1-99.9		%Rec	1	3/23/2022 3:55:03 PM	66244
Surr: 4-Terphenyl-d14	83.8	0	48-155		%Rec	1	3/23/2022 3:55:03 PM	66244
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.048	1.0		µg/L	1	3/22/2022 1:01:00 PM	R86665
Naphthalene	ND	0.034	0.10		µg/L	1	3/22/2022 1:01:00 PM	R86665
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/22/2022 1:01:00 PM	R86665
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/22/2022 1:01:00 PM	R86665
Acenaphthene	ND	0.031	0.10		µg/L	1	3/22/2022 1:01:00 PM	R86665
Fluorene	ND	0.031	0.10		µg/L	1	3/22/2022 1:01:00 PM	R86665
Phenanthrene	ND	0.057	0.10		µg/L	1	3/22/2022 1:01:00 PM	R86665
Anthracene	ND	0.034	0.10		µg/L	1	3/22/2022 1:01:00 PM	R86665
Fluoranthene	ND	0.10	0.20		µg/L	1	3/22/2022 1:01:00 PM	R86665
Pyrene	ND	0.16	0.20		µg/L	1	3/22/2022 1:01:00 PM	R86665
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/22/2022 1:01:00 PM	R86665
Chrysene	ND	0.024	0.10		µg/L	1	3/22/2022 1:01:00 PM	R86665
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/22/2022 1:01:00 PM	R86665
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/22/2022 1:01:00 PM	R86665

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203920**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-16-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/16/2022 8:00:00 AM
Lab ID: 2203920-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	67.3	0	31.6-100		%Rec	1	3/22/2022 1:01:00 PM	R86665
Surr: 2-Fluorobiphenyl	64.6	0	26.7-90.1		%Rec	1	3/22/2022 1:01:00 PM	R86665
Surr: 4-Terphenyl-d14	105	0	72.3-147		%Rec	1	3/22/2022 1:01:00 PM	R86665

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203920**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-16-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/16/2022 8:00:00 AM
Lab ID: 2203920-001D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	ND	0.0016	0.0030		mg/L	1	4/6/2022 12:36:41 PM	66642
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 12:36:41 PM	66642
Cadmium	ND	0.0015	0.0020		mg/L	1	4/6/2022 12:36:41 PM	66642
Chromium	ND	0.0021	0.0060		mg/L	1	4/6/2022 12:36:41 PM	66642
Cobalt	ND	0.0024	0.0060		mg/L	1	4/6/2022 12:36:41 PM	66642
Nickel	ND	0.0033	0.010		mg/L	1	4/6/2022 12:36:41 PM	66642
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 12:36:41 PM	66642
Vanadium	ND	0.0024	0.050		mg/L	1	4/6/2022 12:36:41 PM	66642
Zinc	ND	0.0064	0.010		mg/L	1	4/6/2022 12:36:41 PM	66642
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/21/2022 2:00:30 PM	66254
Arsenic	ND	0.00013	0.0010		mg/L	1	3/21/2022 2:00:30 PM	66254
Lead	ND	0.000061	0.00050		mg/L	1	3/21/2022 2:00:30 PM	66254
Selenium	ND	0.00037	0.0010		mg/L	1	3/21/2022 2:00:30 PM	66254
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/24/2022 12:30:58 PM	66370

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203920**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-16-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/16/2022 8:00:00 AM
Lab ID: 2203920-001E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	ND	0.0011	0.0020		mg/L	1	3/17/2022 10:09:34 AM	A86535
Beryllium	ND	0.00088	0.0020		mg/L	1	3/17/2022 10:09:34 AM	A86535
Cadmium	ND	0.00098	0.0020		mg/L	1	3/17/2022 10:09:34 AM	A86535
Chromium	ND	0.0020	0.0060		mg/L	1	3/17/2022 10:09:34 AM	A86535
Cobalt	ND	0.0024	0.0060		mg/L	1	3/17/2022 10:09:34 AM	A86535
Nickel	ND	0.0033	0.010		mg/L	1	3/17/2022 10:09:34 AM	A86535
Silver	ND	0.0013	0.0050		mg/L	1	3/17/2022 10:09:34 AM	A86535
Vanadium	ND	0.0017	0.050		mg/L	1	3/17/2022 10:09:34 AM	A86535
Zinc	0.0067	0.0032	0.010	J	mg/L	1	3/17/2022 10:09:34 AM	A86535
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/21/2022 5:43:26 PM	B86624
Arsenic	ND	0.00012	0.0010		mg/L	1	3/21/2022 5:43:26 PM	B86624
Lead	ND	0.000057	0.00050		mg/L	1	3/21/2022 5:43:26 PM	B86624
Selenium	ND	0.00034	0.0010		mg/L	1	3/21/2022 5:43:26 PM	B86624
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/24/2022 12:33:05 PM	66370

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203920**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/16/2022 8:30:00 AM
Lab ID: 2203920-002A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	3/21/2022 3:43:27 PM	R86626
Toluene	ND	0.20	1.0		µg/L	1	3/21/2022 3:43:27 PM	R86626
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/21/2022 3:43:27 PM	R86626
Methyl tert-butyl ether (MTBE)	1.0	0.39	1.0		µg/L	1	3/21/2022 3:43:27 PM	R86626
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/21/2022 3:43:27 PM	R86626
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/21/2022 3:43:27 PM	R86626
1,2-Dichloroethane (EDC)	0.45	0.25	1.0	J	µg/L	1	3/21/2022 3:43:27 PM	R86626
Acetone	ND	2.5	10		µg/L	1	3/21/2022 3:43:27 PM	R86626
Bromomethane	ND	0.85	3.0		µg/L	1	3/21/2022 3:43:27 PM	R86626
2-Butanone	ND	2.0	10		µg/L	1	3/21/2022 3:43:27 PM	R86626
Carbon disulfide	ND	0.59	10		µg/L	1	3/21/2022 3:43:27 PM	R86626
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/21/2022 3:43:27 PM	R86626
Chloroform	ND	0.13	1.0		µg/L	1	3/21/2022 3:43:27 PM	R86626
Chloromethane	0.75	0.41	3.0	J	µg/L	1	3/21/2022 3:43:27 PM	R86626
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/21/2022 3:43:27 PM	R86626
1,1-Dichloroethane	0.85	0.27	1.0	J	µg/L	1	3/21/2022 3:43:27 PM	R86626
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/21/2022 3:43:27 PM	R86626
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/21/2022 3:43:27 PM	R86626
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/21/2022 3:43:27 PM	R86626
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/21/2022 3:43:27 PM	R86626
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/21/2022 3:43:27 PM	R86626
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/21/2022 3:43:27 PM	R86626
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/21/2022 3:43:27 PM	R86626
Styrene	ND	0.14	1.0		µg/L	1	3/21/2022 3:43:27 PM	R86626
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/21/2022 3:43:27 PM	R86626
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/21/2022 3:43:27 PM	R86626
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/21/2022 3:43:27 PM	R86626
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/21/2022 3:43:27 PM	R86626
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/21/2022 3:43:27 PM	R86626
Surr: 1,2-Dichloroethane-d4	96.9	0	70-130		%Rec	1	3/21/2022 3:43:27 PM	R86626
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	3/21/2022 3:43:27 PM	R86626
Surr: Dibromofluoromethane	99.3	0	70-130		%Rec	1	3/21/2022 3:43:27 PM	R86626
Surr: Toluene-d8	104	0	70-130		%Rec	1	3/21/2022 3:43:27 PM	R86626
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.038	0.012	0.050	J	mg/L	1	3/21/2022 3:43:27 PM	G86626
Surr: 4-Bromofluorobenzene	105	0	70-130		%Rec	1	3/21/2022 3:43:27 PM	G86626

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203920**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/16/2022 8:30:00 AM
Lab ID: 2203920-002B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0093		µg/L	1	3/21/2022 6:52:06 PM	66256

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203920**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/16/2022 8:30:00 AM
Lab ID: 2203920-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.058	0.016	0.064	J	mg/L	1	3/22/2022 4:38:39 PM	66236
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/22/2022 4:38:39 PM	66236
Surr: DNOP	100	0	42.2-138		%Rec	1	3/22/2022 4:38:39 PM	66236
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	1.1	20		µg/L	1	3/23/2022 4:36:18 PM	66244
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/23/2022 4:36:18 PM	66244
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/23/2022 4:36:18 PM	66244
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/23/2022 4:36:18 PM	66244
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/23/2022 4:36:18 PM	66244
Diethyl phthalate	ND	3.9	10		µg/L	1	3/23/2022 4:36:18 PM	66244
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/23/2022 4:36:18 PM	66244
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/23/2022 4:36:18 PM	66244
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/23/2022 4:36:18 PM	66244
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/23/2022 4:36:18 PM	66244
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/23/2022 4:36:18 PM	66244
Phenol	ND	0.33	5.0		µg/L	1	3/23/2022 4:36:18 PM	66244
Pyridine	ND	10	10		µg/L	1	3/23/2022 4:36:18 PM	66244
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/23/2022 4:36:18 PM	66244
Surr: 2-Fluorophenol	45.7	0	29.4-87.7		%Rec	1	3/23/2022 4:36:18 PM	66244
Surr: Phenol-d5	36.3	0	28.5-64.7		%Rec	1	3/23/2022 4:36:18 PM	66244
Surr: 2,4,6-Tribromophenol	52.1	0	18.6-129		%Rec	1	3/23/2022 4:36:18 PM	66244
Surr: Nitrobenzene-d5	58.4	0	36.9-103		%Rec	1	3/23/2022 4:36:18 PM	66244
Surr: 2-Fluorobiphenyl	54.8	0	38.1-99.9		%Rec	1	3/23/2022 4:36:18 PM	66244
Surr: 4-Terphenyl-d14	78.5	0	48-155		%Rec	1	3/23/2022 4:36:18 PM	66244
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	11	0.048	1.0		µg/L	1	3/22/2022 1:46:00 PM	R86665
Naphthalene	ND	0.034	0.10		µg/L	1	3/22/2022 1:46:00 PM	R86665
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/22/2022 1:46:00 PM	R86665
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/22/2022 1:46:00 PM	R86665
Acenaphthene	ND	0.031	0.10		µg/L	1	3/22/2022 1:46:00 PM	R86665
Fluorene	ND	0.031	0.10		µg/L	1	3/22/2022 1:46:00 PM	R86665
Phenanthrene	ND	0.057	0.10		µg/L	1	3/22/2022 1:46:00 PM	R86665
Anthracene	ND	0.034	0.10		µg/L	1	3/22/2022 1:46:00 PM	R86665
Fluoranthene	ND	0.10	0.20		µg/L	1	3/22/2022 1:46:00 PM	R86665
Pyrene	ND	0.16	0.20		µg/L	1	3/22/2022 1:46:00 PM	R86665
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/22/2022 1:46:00 PM	R86665
Chrysene	ND	0.024	0.10		µg/L	1	3/22/2022 1:46:00 PM	R86665
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/22/2022 1:46:00 PM	R86665
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/22/2022 1:46:00 PM	R86665

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203920**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/16/2022 8:30:00 AM
Lab ID: 2203920-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	69.2	0	31.6-100		%Rec	1	3/22/2022 1:46:00 PM	R86665
Surr: 2-Fluorobiphenyl	66.2	0	26.7-90.1		%Rec	1	3/22/2022 1:46:00 PM	R86665
Surr: 4-Terphenyl-d14	94.4	0	72.3-147		%Rec	1	3/22/2022 1:46:00 PM	R86665

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203920**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/16/2022 8:30:00 AM
Lab ID: 2203920-002D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.12	0.0016	0.0030		mg/L	1	4/6/2022 12:39:55 PM	66642
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 12:39:55 PM	66642
Cadmium	ND	0.0015	0.0020		mg/L	1	4/6/2022 12:39:55 PM	66642
Chromium	ND	0.0021	0.0060		mg/L	1	4/6/2022 12:39:55 PM	66642
Cobalt	0.0039	0.0024	0.0060	J	mg/L	1	4/6/2022 12:39:55 PM	66642
Nickel	0.0094	0.0033	0.010	J	mg/L	1	4/6/2022 12:39:55 PM	66642
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 12:39:55 PM	66642
Vanadium	0.016	0.0024	0.050	J	mg/L	1	4/6/2022 12:39:55 PM	66642
Zinc	0.0079	0.0064	0.010	J	mg/L	1	4/6/2022 12:39:55 PM	66642
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	3/21/2022 2:56:42 PM	66254
Arsenic	0.0013	0.00063	0.0050	J	mg/L	5	3/21/2022 2:56:42 PM	66254
Lead	0.0024	0.00031	0.0025	J	mg/L	5	3/21/2022 2:56:42 PM	66254
Selenium	ND	0.0019	0.0050		mg/L	5	3/21/2022 2:56:42 PM	66254
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.000099	0.000091	0.00020	J	mg/L	1	3/24/2022 12:35:13 PM	66370

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203920**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/16/2022 8:30:00 AM
Lab ID: 2203920-002E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.060	0.0011	0.0020		mg/L	1	3/17/2022 10:11:09 AM	A86535
Beryllium	ND	0.00088	0.0020		mg/L	1	3/17/2022 10:11:09 AM	A86535
Cadmium	ND	0.00098	0.0020		mg/L	1	3/17/2022 10:11:09 AM	A86535
Chromium	ND	0.0020	0.0060		mg/L	1	3/17/2022 10:11:09 AM	A86535
Cobalt	0.0051	0.0024	0.0060	J	mg/L	1	3/17/2022 10:11:09 AM	A86535
Nickel	0.010	0.0033	0.010		mg/L	1	3/17/2022 10:11:09 AM	A86535
Silver	0.0016	0.0013	0.0050	J	mg/L	1	3/17/2022 10:11:09 AM	A86535
Vanadium	0.0084	0.0017	0.050	J	mg/L	1	3/17/2022 10:11:09 AM	A86535
Zinc	0.010	0.0032	0.010		mg/L	1	3/17/2022 10:11:09 AM	A86535
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	3/21/2022 6:26:28 PM	B86624
Arsenic	ND	0.00061	0.0050		mg/L	5	3/21/2022 6:26:28 PM	B86624
Lead	ND	0.00028	0.0025		mg/L	5	3/21/2022 6:26:28 PM	B86624
Selenium	ND	0.0017	0.0050		mg/L	5	3/21/2022 6:26:28 PM	B86624
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/24/2022 12:37:20 PM	66370

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203920**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/16/2022 9:10:00 AM
Lab ID: 2203920-003A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	1.1	5.0		µg/L	5	3/21/2022 5:09:01 PM	R86626
Toluene	ND	1.0	5.0		µg/L	5	3/21/2022 5:09:01 PM	R86626
Ethylbenzene	ND	1.1	5.0		µg/L	5	3/21/2022 5:09:01 PM	R86626
Methyl tert-butyl ether (MTBE)	350	2.0	5.0		µg/L	5	3/21/2022 5:09:01 PM	R86626
1,2,4-Trimethylbenzene	ND	0.61	5.0		µg/L	5	3/21/2022 5:09:01 PM	R86626
1,3,5-Trimethylbenzene	ND	0.91	5.0		µg/L	5	3/21/2022 5:09:01 PM	R86626
1,2-Dichloroethane (EDC)	12	1.3	5.0		µg/L	5	3/21/2022 5:09:01 PM	R86626
Acetone	ND	13	50		µg/L	5	3/21/2022 5:09:01 PM	R86626
Bromomethane	ND	4.3	15		µg/L	5	3/21/2022 5:09:01 PM	R86626
2-Butanone	ND	10	50		µg/L	5	3/21/2022 5:09:01 PM	R86626
Carbon disulfide	ND	3.0	50		µg/L	5	3/21/2022 5:09:01 PM	R86626
Chlorobenzene	ND	0.78	5.0		µg/L	5	3/21/2022 5:09:01 PM	R86626
Chloroform	ND	0.67	5.0		µg/L	5	3/21/2022 5:09:01 PM	R86626
Chloromethane	3.5	2.1	15	J	µg/L	5	3/21/2022 5:09:01 PM	R86626
cis-1,2-DCE	3.2	1.9	5.0	J	µg/L	5	3/21/2022 5:09:01 PM	R86626
1,1-Dichloroethane	27	1.4	5.0		µg/L	5	3/21/2022 5:09:01 PM	R86626
1,1-Dichloroethene	34	1.0	5.0		µg/L	5	3/21/2022 5:09:01 PM	R86626
Isopropylbenzene	ND	0.91	5.0		µg/L	5	3/21/2022 5:09:01 PM	R86626
4-Isopropyltoluene	ND	1.0	5.0		µg/L	5	3/21/2022 5:09:01 PM	R86626
Methylene Chloride	ND	2.5	15		µg/L	5	3/21/2022 5:09:01 PM	R86626
n-Butylbenzene	ND	1.3	15		µg/L	5	3/21/2022 5:09:01 PM	R86626
n-Propylbenzene	ND	0.91	5.0		µg/L	5	3/21/2022 5:09:01 PM	R86626
sec-Butylbenzene	ND	0.72	5.0		µg/L	5	3/21/2022 5:09:01 PM	R86626
Styrene	ND	0.68	5.0		µg/L	5	3/21/2022 5:09:01 PM	R86626
Tetrachloroethene (PCE)	ND	1.8	5.0		µg/L	5	3/21/2022 5:09:01 PM	R86626
1,1,1-Trichloroethane	2.3	1.5	5.0	J	µg/L	5	3/21/2022 5:09:01 PM	R86626
Trichloroethene (TCE)	5.2	1.0	5.0		µg/L	5	3/21/2022 5:09:01 PM	R86626
Vinyl chloride	ND	1.6	5.0		µg/L	5	3/21/2022 5:09:01 PM	R86626
Xylenes, Total	ND	1.9	7.5		µg/L	5	3/21/2022 5:09:01 PM	R86626
Surr: 1,2-Dichloroethane-d4	98.8	0	70-130		%Rec	5	3/21/2022 5:09:01 PM	R86626
Surr: 4-Bromofluorobenzene	99.0	0	70-130		%Rec	5	3/21/2022 5:09:01 PM	R86626
Surr: Dibromofluoromethane	98.6	0	70-130		%Rec	5	3/21/2022 5:09:01 PM	R86626
Surr: Toluene-d8	103	0	70-130		%Rec	5	3/21/2022 5:09:01 PM	R86626
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.55	0.061	0.25		mg/L	5	3/21/2022 5:09:01 PM	G86626
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	5	3/21/2022 5:09:01 PM	G86626

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203920**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/16/2022 9:10:00 AM
Lab ID: 2203920-003B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0093		µg/L	1	3/21/2022 7:07:12 PM	66256

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203920**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/16/2022 9:10:00 AM
Lab ID: 2203920-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.29	0.016	0.064		mg/L	1	3/22/2022 5:25:58 PM	66236
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/22/2022 5:25:58 PM	66236
Surr: DNOP	103	0	42.2-138		%Rec	1	3/22/2022 5:25:58 PM	66236
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	1.1	20		µg/L	1	3/23/2022 5:17:56 PM	66244
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/23/2022 5:17:56 PM	66244
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/23/2022 5:17:56 PM	66244
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/23/2022 5:17:56 PM	66244
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/23/2022 5:17:56 PM	66244
Diethyl phthalate	ND	3.9	10		µg/L	1	3/23/2022 5:17:56 PM	66244
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/23/2022 5:17:56 PM	66244
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/23/2022 5:17:56 PM	66244
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/23/2022 5:17:56 PM	66244
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/23/2022 5:17:56 PM	66244
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/23/2022 5:17:56 PM	66244
Phenol	ND	0.33	5.0		µg/L	1	3/23/2022 5:17:56 PM	66244
Pyridine	ND	10	10		µg/L	1	3/23/2022 5:17:56 PM	66244
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/23/2022 5:17:56 PM	66244
Surr: 2-Fluorophenol	40.9	0	29.4-87.7		%Rec	1	3/23/2022 5:17:56 PM	66244
Surr: Phenol-d5	33.4	0	28.5-64.7		%Rec	1	3/23/2022 5:17:56 PM	66244
Surr: 2,4,6-Tribromophenol	52.8	0	18.6-129		%Rec	1	3/23/2022 5:17:56 PM	66244
Surr: Nitrobenzene-d5	49.4	0	36.9-103		%Rec	1	3/23/2022 5:17:56 PM	66244
Surr: 2-Fluorobiphenyl	49.5	0	38.1-99.9		%Rec	1	3/23/2022 5:17:56 PM	66244
Surr: 4-Terphenyl-d14	71.7	0	48-155		%Rec	1	3/23/2022 5:17:56 PM	66244
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	81	0.48	10		µg/L	10	3/23/2022 10:54:00 PM	R86694
Naphthalene	ND	0.034	0.10		µg/L	1	3/22/2022 2:31:00 PM	R86665
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/22/2022 2:31:00 PM	R86665
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/22/2022 2:31:00 PM	R86665
Acenaphthene	ND	0.031	0.10		µg/L	1	3/22/2022 2:31:00 PM	R86665
Fluorene	ND	0.031	0.10		µg/L	1	3/22/2022 2:31:00 PM	R86665
Phenanthrene	ND	0.057	0.10		µg/L	1	3/22/2022 2:31:00 PM	R86665
Anthracene	ND	0.034	0.10		µg/L	1	3/22/2022 2:31:00 PM	R86665
Fluoranthene	ND	0.10	0.20		µg/L	1	3/22/2022 2:31:00 PM	R86665
Pyrene	ND	0.16	0.20		µg/L	1	3/22/2022 2:31:00 PM	R86665
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/22/2022 2:31:00 PM	R86665
Chrysene	ND	0.024	0.10		µg/L	1	3/22/2022 2:31:00 PM	R86665
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/22/2022 2:31:00 PM	R86665
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/22/2022 2:31:00 PM	R86665

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203920**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/16/2022 9:10:00 AM
Lab ID: 2203920-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	65.1	0	31.6-100		%Rec	1	3/22/2022 2:31:00 PM	R86665
Surr: 2-Fluorobiphenyl	59.8	0	26.7-90.1		%Rec	1	3/22/2022 2:31:00 PM	R86665
Surr: 4-Terphenyl-d14	87.9	0	72.3-147		%Rec	1	3/22/2022 2:31:00 PM	R86665

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203920**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/16/2022 9:10:00 AM
Lab ID: 2203920-003D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.30	0.0016	0.0030		mg/L	1	4/6/2022 12:42:48 PM	66642
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 12:42:48 PM	66642
Cadmium	ND	0.0015	0.0020		mg/L	1	4/6/2022 12:42:48 PM	66642
Chromium	0.010	0.0021	0.0060		mg/L	1	4/6/2022 12:42:48 PM	66642
Cobalt	0.0085	0.0024	0.0060		mg/L	1	4/6/2022 12:42:48 PM	66642
Nickel	0.012	0.0033	0.010		mg/L	1	4/6/2022 12:42:48 PM	66642
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 12:42:48 PM	66642
Vanadium	0.025	0.0024	0.050	J	mg/L	1	4/6/2022 12:42:48 PM	66642
Zinc	0.020	0.0064	0.010		mg/L	1	4/6/2022 12:42:48 PM	66642
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/21/2022 2:05:23 PM	66254
Arsenic	0.0021	0.00013	0.0010		mg/L	1	3/21/2022 2:05:23 PM	66254
Lead	0.0084	0.000061	0.00050		mg/L	1	3/21/2022 2:05:23 PM	66254
Selenium	0.0018	0.00037	0.0010		mg/L	1	3/21/2022 2:05:23 PM	66254
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00013	0.000091	0.00020	J	mg/L	1	3/24/2022 12:43:43 PM	66370

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203920**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/16/2022 9:10:00 AM
Lab ID: 2203920-003E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.12	0.0011	0.0020		mg/L	1	3/17/2022 10:14:28 AM	A86535
Beryllium	ND	0.00088	0.0020		mg/L	1	3/17/2022 10:14:28 AM	A86535
Cadmium	ND	0.00098	0.0020		mg/L	1	3/17/2022 10:14:28 AM	A86535
Chromium	ND	0.0020	0.0060		mg/L	1	3/17/2022 10:14:28 AM	A86535
Cobalt	ND	0.0024	0.0060		mg/L	1	3/17/2022 10:14:28 AM	A86535
Nickel	0.0066	0.0033	0.010	J	mg/L	1	3/17/2022 10:14:28 AM	A86535
Silver	ND	0.0013	0.0050		mg/L	1	3/17/2022 10:14:28 AM	A86535
Vanadium	0.0024	0.0017	0.050	J	mg/L	1	3/17/2022 10:14:28 AM	A86535
Zinc	0.0082	0.0032	0.010	J	mg/L	1	3/17/2022 10:14:28 AM	A86535
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/21/2022 5:54:13 PM	B86624
Arsenic	0.00059	0.00012	0.0010	J	mg/L	1	3/21/2022 5:54:13 PM	B86624
Lead	0.00012	0.000057	0.00050	J	mg/L	1	3/21/2022 5:54:13 PM	B86624
Selenium	ND	0.00034	0.0010		mg/L	1	3/21/2022 5:54:13 PM	B86624
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/24/2022 12:45:51 PM	66370

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203920**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-25
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/16/2022 9:50:00 AM
Lab ID: 2203920-004A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	96	2.3	10		µg/L	10	3/21/2022 6:34:54 PM	R86626
Toluene	ND	2.0	10		µg/L	10	3/21/2022 6:34:54 PM	R86626
Ethylbenzene	ND	2.1	10		µg/L	10	3/21/2022 6:34:54 PM	R86626
Methyl tert-butyl ether (MTBE)	180	3.9	10		µg/L	10	3/21/2022 6:34:54 PM	R86626
1,2,4-Trimethylbenzene	ND	1.2	10		µg/L	10	3/21/2022 6:34:54 PM	R86626
1,3,5-Trimethylbenzene	ND	1.8	10		µg/L	10	3/21/2022 6:34:54 PM	R86626
1,2-Dichloroethane (EDC)	5.8	2.5	5.0		µg/L	10	3/21/2022 6:34:54 PM	R86626
Acetone	ND	25	100		µg/L	10	3/21/2022 6:34:54 PM	R86626
Bromomethane	ND	8.5	30		µg/L	10	3/21/2022 6:34:54 PM	R86626
2-Butanone	ND	20	100		µg/L	10	3/21/2022 6:34:54 PM	R86626
Carbon disulfide	ND	5.9	100		µg/L	10	3/21/2022 6:34:54 PM	R86626
Chlorobenzene	ND	1.6	10		µg/L	10	3/21/2022 6:34:54 PM	R86626
Chloroform	ND	1.3	10		µg/L	10	3/21/2022 6:34:54 PM	R86626
Chloromethane	9.9	4.1	30	J	µg/L	10	3/21/2022 6:34:54 PM	R86626
cis-1,2-DCE	8.0	3.9	10	J	µg/L	10	3/21/2022 6:34:54 PM	R86626
1,1-Dichloroethane	51	2.7	10		µg/L	10	3/21/2022 6:34:54 PM	R86626
1,1-Dichloroethene	9.2	2.0	10	J	µg/L	10	3/21/2022 6:34:54 PM	R86626
Isopropylbenzene	ND	1.8	10		µg/L	10	3/21/2022 6:34:54 PM	R86626
4-Isopropyltoluene	ND	2.0	10		µg/L	10	3/21/2022 6:34:54 PM	R86626
Methylene Chloride	ND	5.0	30		µg/L	10	3/21/2022 6:34:54 PM	R86626
n-Butylbenzene	ND	2.5	30		µg/L	10	3/21/2022 6:34:54 PM	R86626
n-Propylbenzene	ND	1.8	10		µg/L	10	3/21/2022 6:34:54 PM	R86626
sec-Butylbenzene	ND	1.4	10		µg/L	10	3/21/2022 6:34:54 PM	R86626
Styrene	ND	1.4	10		µg/L	10	3/21/2022 6:34:54 PM	R86626
Tetrachloroethene (PCE)	ND	3.6	10		µg/L	10	3/21/2022 6:34:54 PM	R86626
1,1,1-Trichloroethane	ND	3.0	10		µg/L	10	3/21/2022 6:34:54 PM	R86626
Trichloroethene (TCE)	5.7	2.0	10	J	µg/L	10	3/21/2022 6:34:54 PM	R86626
Vinyl chloride	7.1	3.2	10	J	µg/L	10	3/21/2022 6:34:54 PM	R86626
Xylenes, Total	ND	3.7	15		µg/L	10	3/21/2022 6:34:54 PM	R86626
Surr: 1,2-Dichloroethane-d4	95.9	0	70-130		%Rec	10	3/21/2022 6:34:54 PM	R86626
Surr: 4-Bromofluorobenzene	98.1	0	70-130		%Rec	10	3/21/2022 6:34:54 PM	R86626
Surr: Dibromofluoromethane	99.5	0	70-130		%Rec	10	3/21/2022 6:34:54 PM	R86626
Surr: Toluene-d8	99.0	0	70-130		%Rec	10	3/21/2022 6:34:54 PM	R86626
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.97	0.12	0.50		mg/L	10	3/21/2022 6:34:54 PM	G86626
Surr: 4-Bromofluorobenzene	99.8	0	70-130		%Rec	10	3/21/2022 6:34:54 PM	G86626

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203920**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-25
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/16/2022 9:50:00 AM
Lab ID: 2203920-004B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0035	0.0095		µg/L	1	3/21/2022 7:22:16 PM	66256

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203920**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-25
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/16/2022 9:50:00 AM
Lab ID: 2203920-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.36	0.016	0.064		mg/L	1	3/22/2022 5:49:38 PM	66236
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/22/2022 5:49:38 PM	66236
Surr: DNOP	98.5	0	42.2-138		%Rec	1	3/22/2022 5:49:38 PM	66236
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	1.1	20		µg/L	1	3/23/2022 5:59:21 PM	66244
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/23/2022 5:59:21 PM	66244
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/23/2022 5:59:21 PM	66244
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/23/2022 5:59:21 PM	66244
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/23/2022 5:59:21 PM	66244
Diethyl phthalate	ND	3.9	10		µg/L	1	3/23/2022 5:59:21 PM	66244
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/23/2022 5:59:21 PM	66244
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/23/2022 5:59:21 PM	66244
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/23/2022 5:59:21 PM	66244
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/23/2022 5:59:21 PM	66244
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/23/2022 5:59:21 PM	66244
Phenol	4.1	0.33	5.0	J	µg/L	1	3/23/2022 5:59:21 PM	66244
Pyridine	ND	10	10		µg/L	1	3/23/2022 5:59:21 PM	66244
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/23/2022 5:59:21 PM	66244
Surr: 2-Fluorophenol	36.7	0	29.4-87.7		%Rec	1	3/23/2022 5:59:21 PM	66244
Surr: Phenol-d5	29.3	0	28.5-64.7		%Rec	1	3/23/2022 5:59:21 PM	66244
Surr: 2,4,6-Tribromophenol	60.0	0	18.6-129		%Rec	1	3/23/2022 5:59:21 PM	66244
Surr: Nitrobenzene-d5	50.2	0	36.9-103		%Rec	1	3/23/2022 5:59:21 PM	66244
Surr: 2-Fluorobiphenyl	51.1	0	38.1-99.9		%Rec	1	3/23/2022 5:59:21 PM	66244
Surr: 4-Terphenyl-d14	70.0	0	48-155		%Rec	1	3/23/2022 5:59:21 PM	66244
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	28	0.48	10		µg/L	10	3/23/2022 11:38:00 PM	R86694
Naphthalene	ND	0.034	0.10		µg/L	1	3/22/2022 3:16:00 PM	R86665
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/22/2022 3:16:00 PM	R86665
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/22/2022 3:16:00 PM	R86665
Acenaphthene	ND	0.031	0.10		µg/L	1	3/22/2022 3:16:00 PM	R86665
Fluorene	ND	0.031	0.10		µg/L	1	3/22/2022 3:16:00 PM	R86665
Phenanthrene	ND	0.057	0.10		µg/L	1	3/22/2022 3:16:00 PM	R86665
Anthracene	ND	0.034	0.10		µg/L	1	3/22/2022 3:16:00 PM	R86665
Fluoranthene	ND	0.10	0.20		µg/L	1	3/22/2022 3:16:00 PM	R86665
Pyrene	ND	0.16	0.20		µg/L	1	3/22/2022 3:16:00 PM	R86665
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/22/2022 3:16:00 PM	R86665
Chrysene	ND	0.024	0.10		µg/L	1	3/22/2022 3:16:00 PM	R86665
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/22/2022 3:16:00 PM	R86665
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/22/2022 3:16:00 PM	R86665

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203920**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-25
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/16/2022 9:50:00 AM
Lab ID: 2203920-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	59.1	0	31.6-100		%Rec	1	3/22/2022 3:16:00 PM	R86665
Surr: 2-Fluorobiphenyl	55.6	0	26.7-90.1		%Rec	1	3/22/2022 3:16:00 PM	R86665
Surr: 4-Terphenyl-d14	79.8	0	72.3-147		%Rec	1	3/22/2022 3:16:00 PM	R86665

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203920**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-25
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/16/2022 9:50:00 AM
Lab ID: 2203920-004D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.33	0.0016	0.0030		mg/L	1	4/6/2022 12:45:34 PM	66642
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 12:45:34 PM	66642
Cadmium	ND	0.0015	0.0020		mg/L	1	4/6/2022 12:45:34 PM	66642
Chromium	0.0037	0.0021	0.0060	J	mg/L	1	4/6/2022 12:45:34 PM	66642
Cobalt	0.0080	0.0024	0.0060		mg/L	1	4/6/2022 12:45:34 PM	66642
Nickel	0.029	0.0033	0.010		mg/L	1	4/6/2022 12:45:34 PM	66642
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 12:45:34 PM	66642
Vanadium	0.016	0.0024	0.050	J	mg/L	1	4/6/2022 12:45:34 PM	66642
Zinc	0.010	0.0064	0.010		mg/L	1	4/6/2022 12:45:34 PM	66642
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/21/2022 2:07:49 PM	66254
Arsenic	0.0031	0.00063	0.0050	J	mg/L	5	3/21/2022 3:01:35 PM	66254
Lead	0.0055	0.00031	0.0025		mg/L	5	3/21/2022 3:01:35 PM	66254
Selenium	0.0023	0.0019	0.0050	J	mg/L	5	3/21/2022 3:01:35 PM	66254
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/24/2022 12:48:00 PM	66370

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203920**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-25
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/16/2022 9:50:00 AM
Lab ID: 2203920-004E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.19	0.0011	0.0020		mg/L	1	3/17/2022 10:38:20 AM	A86535
Beryllium	ND	0.00088	0.0020		mg/L	1	3/17/2022 10:38:20 AM	A86535
Cadmium	ND	0.00098	0.0020		mg/L	1	3/17/2022 10:38:20 AM	A86535
Chromium	ND	0.0020	0.0060		mg/L	1	3/17/2022 10:38:20 AM	A86535
Cobalt	0.0058	0.0024	0.0060	J	mg/L	1	3/17/2022 10:38:20 AM	A86535
Nickel	0.029	0.0033	0.010		mg/L	1	3/17/2022 10:38:20 AM	A86535
Silver	ND	0.0013	0.0050		mg/L	1	3/17/2022 10:38:20 AM	A86535
Vanadium	ND	0.0017	0.050		mg/L	1	3/17/2022 10:38:20 AM	A86535
Zinc	0.0054	0.0032	0.010	J	mg/L	1	3/17/2022 10:38:20 AM	A86535
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/21/2022 5:56:54 PM	B86624
Arsenic	0.00079	0.00012	0.0010	J	mg/L	1	3/21/2022 5:56:54 PM	B86624
Lead	0.00023	0.000057	0.00050	J	mg/L	1	3/21/2022 5:56:54 PM	B86624
Selenium	0.00041	0.00034	0.0010	J	mg/L	1	3/21/2022 5:56:54 PM	B86624
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/24/2022 12:50:09 PM	66370

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203920**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-24
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/16/2022 10:15:00 AM
Lab ID: 2203920-005A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	4700	23	100		µg/L	100	3/21/2022 7:03:30 PM	R86626
Toluene	19	2.0	10		µg/L	10	3/21/2022 7:32:04 PM	R86626
Ethylbenzene	250	2.1	10		µg/L	10	3/21/2022 7:32:04 PM	R86626
Methyl tert-butyl ether (MTBE)	79	3.9	10		µg/L	10	3/21/2022 7:32:04 PM	R86626
1,2,4-Trimethylbenzene	ND	1.2	10		µg/L	10	3/21/2022 7:32:04 PM	R86626
1,3,5-Trimethylbenzene	ND	1.8	10		µg/L	10	3/21/2022 7:32:04 PM	R86626
1,2-Dichloroethane (EDC)	5.9	2.5	10	J	µg/L	10	3/21/2022 7:32:04 PM	R86626
Acetone	ND	25	100		µg/L	10	3/21/2022 7:32:04 PM	R86626
Bromomethane	ND	8.5	30		µg/L	10	3/21/2022 7:32:04 PM	R86626
2-Butanone	ND	20	100		µg/L	10	3/21/2022 7:32:04 PM	R86626
Carbon disulfide	ND	5.9	100		µg/L	10	3/21/2022 7:32:04 PM	R86626
Chlorobenzene	ND	1.6	10		µg/L	10	3/21/2022 7:32:04 PM	R86626
Chloroform	ND	1.3	10		µg/L	10	3/21/2022 7:32:04 PM	R86626
Chloromethane	ND	4.1	30		µg/L	10	3/21/2022 7:32:04 PM	R86626
cis-1,2-DCE	ND	3.9	10		µg/L	10	3/21/2022 7:32:04 PM	R86626
1,1-Dichloroethane	13	2.7	10		µg/L	10	3/21/2022 7:32:04 PM	R86626
1,1-Dichloroethene	6.1	2.0	10	J	µg/L	10	3/21/2022 7:32:04 PM	R86626
Isopropylbenzene	19	1.8	10		µg/L	10	3/21/2022 7:32:04 PM	R86626
4-Isopropyltoluene	ND	2.0	10		µg/L	10	3/21/2022 7:32:04 PM	R86626
Methylene Chloride	ND	5.0	30		µg/L	10	3/21/2022 7:32:04 PM	R86626
n-Butylbenzene	7.7	2.5	30	J	µg/L	10	3/21/2022 7:32:04 PM	R86626
n-Propylbenzene	34	1.8	10		µg/L	10	3/21/2022 7:32:04 PM	R86626
sec-Butylbenzene	4.6	1.4	10	J	µg/L	10	3/21/2022 7:32:04 PM	R86626
Styrene	ND	1.4	10		µg/L	10	3/21/2022 7:32:04 PM	R86626
Tetrachloroethene (PCE)	ND	3.6	10		µg/L	10	3/21/2022 7:32:04 PM	R86626
1,1,1-Trichloroethane	ND	3.0	10		µg/L	10	3/21/2022 7:32:04 PM	R86626
Trichloroethene (TCE)	3.2	2.0	10	J	µg/L	10	3/21/2022 7:32:04 PM	R86626
Vinyl chloride	25	3.2	10		µg/L	10	3/21/2022 7:32:04 PM	R86626
Xylenes, Total	ND	3.7	15		µg/L	10	3/21/2022 7:32:04 PM	R86626
Surr: 1,2-Dichloroethane-d4	95.2	0	70-130		%Rec	10	3/21/2022 7:32:04 PM	R86626
Surr: 4-Bromofluorobenzene	97.1	0	70-130		%Rec	10	3/21/2022 7:32:04 PM	R86626
Surr: Dibromofluoromethane	103	0	70-130		%Rec	10	3/21/2022 7:32:04 PM	R86626
Surr: Toluene-d8	101	0	70-130		%Rec	10	3/21/2022 7:32:04 PM	R86626
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	12	0.12	0.50		mg/L	10	3/21/2022 7:32:04 PM	G86626
Surr: 4-Bromofluorobenzene	100	0	70-130		%Rec	10	3/21/2022 7:32:04 PM	G86626

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203920**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-24
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/16/2022 10:15:00 AM
Lab ID: 2203920-005B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0035	0.0094		µg/L	1	3/21/2022 7:37:25 PM	66256

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203920**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-24
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/16/2022 10:15:00 AM
Lab ID: 2203920-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.87	0.016	0.064		mg/L	1	3/22/2022 6:13:15 PM	66236
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/22/2022 6:13:15 PM	66236
Surr: DNOP	105	0	42.2-138		%Rec	1	3/22/2022 6:13:15 PM	66236
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	1.1	20		µg/L	1	3/23/2022 6:40:50 PM	66244
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/23/2022 6:40:50 PM	66244
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/23/2022 6:40:50 PM	66244
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/23/2022 6:40:50 PM	66244
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/23/2022 6:40:50 PM	66244
Diethyl phthalate	ND	3.9	10		µg/L	1	3/23/2022 6:40:50 PM	66244
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/23/2022 6:40:50 PM	66244
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/23/2022 6:40:50 PM	66244
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/23/2022 6:40:50 PM	66244
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/23/2022 6:40:50 PM	66244
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/23/2022 6:40:50 PM	66244
Phenol	20	0.33	5.0		µg/L	1	3/23/2022 6:40:50 PM	66244
Pyridine	ND	10	10		µg/L	1	3/23/2022 6:40:50 PM	66244
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/23/2022 6:40:50 PM	66244
Surr: 2-Fluorophenol	34.5	0	29.4-87.7		%Rec	1	3/23/2022 6:40:50 PM	66244
Surr: Phenol-d5	30.3	0	28.5-64.7		%Rec	1	3/23/2022 6:40:50 PM	66244
Surr: 2,4,6-Tribromophenol	52.9	0	18.6-129		%Rec	1	3/23/2022 6:40:50 PM	66244
Surr: Nitrobenzene-d5	46.0	0	36.9-103		%Rec	1	3/23/2022 6:40:50 PM	66244
Surr: 2-Fluorobiphenyl	47.8	0	38.1-99.9		%Rec	1	3/23/2022 6:40:50 PM	66244
Surr: 4-Terphenyl-d14	70.1	0	48-155		%Rec	1	3/23/2022 6:40:50 PM	66244
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	18	0.48	10		µg/L	10	3/24/2022 12:21:00 AM	R86694
Naphthalene	1.0	0.034	0.10		µg/L	1	3/22/2022 4:01:00 PM	R86665
1-Methylnaphthalene	4.7	0.024	0.10		µg/L	1	3/22/2022 4:01:00 PM	R86665
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/22/2022 4:01:00 PM	R86665
Acenaphthene	0.46	0.031	0.10		µg/L	1	3/22/2022 4:01:00 PM	R86665
Fluorene	ND	0.031	0.10		µg/L	1	3/22/2022 4:01:00 PM	R86665
Phenanthrene	ND	0.057	0.10		µg/L	1	3/22/2022 4:01:00 PM	R86665
Anthracene	ND	0.034	0.10		µg/L	1	3/22/2022 4:01:00 PM	R86665
Fluoranthene	ND	0.10	0.20		µg/L	1	3/22/2022 4:01:00 PM	R86665
Pyrene	ND	0.16	0.20		µg/L	1	3/22/2022 4:01:00 PM	R86665
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/22/2022 4:01:00 PM	R86665
Chrysene	ND	0.024	0.10		µg/L	1	3/22/2022 4:01:00 PM	R86665
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/22/2022 4:01:00 PM	R86665
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/22/2022 4:01:00 PM	R86665

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203920**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-24
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/16/2022 10:15:00 AM
Lab ID: 2203920-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	71.1	0	31.6-100		%Rec	1	3/22/2022 4:01:00 PM	R86665
Surr: 2-Fluorobiphenyl	64.0	0	26.7-90.1		%Rec	1	3/22/2022 4:01:00 PM	R86665
Surr: 4-Terphenyl-d14	92.2	0	72.3-147		%Rec	1	3/22/2022 4:01:00 PM	R86665

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203920**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-24
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/16/2022 10:15:00 AM
Lab ID: 2203920-005D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.76	0.0016	0.0030		mg/L	1	4/6/2022 12:48:22 PM	66642
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 12:48:22 PM	66642
Cadmium	ND	0.0015	0.0020		mg/L	1	4/6/2022 12:48:22 PM	66642
Chromium	ND	0.0021	0.0060		mg/L	1	4/6/2022 12:48:22 PM	66642
Cobalt	0.012	0.0024	0.0060		mg/L	1	4/6/2022 12:48:22 PM	66642
Nickel	0.031	0.0033	0.010		mg/L	1	4/6/2022 12:48:22 PM	66642
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 12:48:22 PM	66642
Vanadium	0.0067	0.0024	0.050	J	mg/L	1	4/6/2022 12:48:22 PM	66642
Zinc	0.0076	0.0064	0.010	J	mg/L	1	4/6/2022 12:48:22 PM	66642
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/21/2022 2:10:16 PM	66254
Arsenic	0.0030	0.00063	0.0050	J	mg/L	5	3/21/2022 3:06:29 PM	66254
Lead	0.0047	0.00031	0.0025		mg/L	5	3/21/2022 3:06:29 PM	66254
Selenium	0.0019	0.0019	0.0050	J	mg/L	5	3/21/2022 3:06:29 PM	66254
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00045	0.0010		mg/L	5	3/24/2022 2:50:47 PM	66370

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203920**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-24
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/16/2022 10:15:00 AM
Lab ID: 2203920-005E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.81	0.0011	0.0020		mg/L	1	3/17/2022 10:41:39 AM	A86535
Beryllium	ND	0.00088	0.0020		mg/L	1	3/17/2022 10:41:39 AM	A86535
Cadmium	ND	0.00098	0.0020		mg/L	1	3/17/2022 10:41:39 AM	A86535
Chromium	ND	0.0020	0.0060		mg/L	1	3/17/2022 10:41:39 AM	A86535
Cobalt	0.011	0.0024	0.0060		mg/L	1	3/17/2022 10:41:39 AM	A86535
Nickel	0.033	0.0033	0.010		mg/L	1	3/17/2022 10:41:39 AM	A86535
Silver	ND	0.0013	0.0050		mg/L	1	3/17/2022 10:41:39 AM	A86535
Vanadium	ND	0.0017	0.050		mg/L	1	3/17/2022 10:41:39 AM	A86535
Zinc	0.0088	0.0032	0.010	J	mg/L	1	3/17/2022 10:41:39 AM	A86535
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/21/2022 5:59:35 PM	B86624
Arsenic	0.0031	0.00012	0.0010		mg/L	1	3/21/2022 5:59:35 PM	B86624
Lead	0.00069	0.000057	0.00050		mg/L	1	3/21/2022 5:59:35 PM	B86624
Selenium	0.00039	0.00034	0.0010	J	mg/L	1	3/21/2022 5:59:35 PM	B86624
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/24/2022 12:58:45 PM	66370

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203920**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-02R
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/16/2022 10:40:00 AM
Lab ID: 2203920-006A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	78	0.23	1.0		µg/L	1	3/21/2022 8:00:44 PM	R86626
Toluene	ND	0.20	1.0		µg/L	1	3/21/2022 8:00:44 PM	R86626
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/21/2022 8:00:44 PM	R86626
Methyl tert-butyl ether (MTBE)	53	0.39	1.0		µg/L	1	3/21/2022 8:00:44 PM	R86626
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/21/2022 8:00:44 PM	R86626
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/21/2022 8:00:44 PM	R86626
1,2-Dichloroethane (EDC)	57	0.25	1.0		µg/L	1	3/21/2022 8:00:44 PM	R86626
Acetone	ND	2.5	10		µg/L	1	3/21/2022 8:00:44 PM	R86626
Bromomethane	ND	0.85	3.0		µg/L	1	3/21/2022 8:00:44 PM	R86626
2-Butanone	ND	2.0	10		µg/L	1	3/21/2022 8:00:44 PM	R86626
Carbon disulfide	ND	0.59	10		µg/L	1	3/21/2022 8:00:44 PM	R86626
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/21/2022 8:00:44 PM	R86626
Chloroform	1.4	0.13	1.0		µg/L	1	3/21/2022 8:00:44 PM	R86626
Chloromethane	1.9	0.41	3.0	J	µg/L	1	3/21/2022 8:00:44 PM	R86626
cis-1,2-DCE	3.6	0.39	1.0		µg/L	1	3/21/2022 8:00:44 PM	R86626
1,1-Dichloroethane	100	2.7	10		µg/L	10	3/22/2022 12:49:42 PM	R86666
1,1-Dichloroethene	290	2.0	10		µg/L	10	3/22/2022 12:49:42 PM	R86666
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/21/2022 8:00:44 PM	R86626
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/21/2022 8:00:44 PM	R86626
Methylene Chloride	1.1	0.50	3.0	J	µg/L	1	3/21/2022 8:00:44 PM	R86626
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/21/2022 8:00:44 PM	R86626
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/21/2022 8:00:44 PM	R86626
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/21/2022 8:00:44 PM	R86626
Styrene	ND	0.14	1.0		µg/L	1	3/21/2022 8:00:44 PM	R86626
Tetrachloroethene (PCE)	0.36	0.36	1.0	J	µg/L	1	3/21/2022 8:00:44 PM	R86626
1,1,1-Trichloroethane	1.1	0.30	1.0		µg/L	1	3/21/2022 8:00:44 PM	R86626
Trichloroethene (TCE)	23	0.20	1.0		µg/L	1	3/21/2022 8:00:44 PM	R86626
Vinyl chloride	0.75	0.32	1.0	J	µg/L	1	3/21/2022 8:00:44 PM	R86626
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/21/2022 8:00:44 PM	R86626
Surr: 1,2-Dichloroethane-d4	93.5	0	70-130		%Rec	1	3/21/2022 8:00:44 PM	R86626
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	3/21/2022 8:00:44 PM	R86626
Surr: Dibromofluoromethane	96.2	0	70-130		%Rec	1	3/21/2022 8:00:44 PM	R86626
Surr: Toluene-d8	99.6	0	70-130		%Rec	1	3/21/2022 8:00:44 PM	R86626
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.63	0.012	0.050		mg/L	1	3/21/2022 8:00:44 PM	G86626
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	3/21/2022 8:00:44 PM	G86626

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203920**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-02R
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/16/2022 10:40:00 AM
Lab ID: 2203920-006B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	0.39	0.069	0.19		µg/L	20	3/22/2022 7:34:00 AM	66256

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203920**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-02R
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/16/2022 10:40:00 AM
Lab ID: 2203920-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.24	0.016	0.064		mg/L	1	3/22/2022 6:36:53 PM	66236
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/22/2022 6:36:53 PM	66236
Surr: DNOP	105	0	42.2-138		%Rec	1	3/22/2022 6:36:53 PM	66236
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	1.1	20		µg/L	1	3/23/2022 7:22:07 PM	66244
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/23/2022 7:22:07 PM	66244
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/23/2022 7:22:07 PM	66244
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/23/2022 7:22:07 PM	66244
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/23/2022 7:22:07 PM	66244
Diethyl phthalate	ND	3.9	10		µg/L	1	3/23/2022 7:22:07 PM	66244
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/23/2022 7:22:07 PM	66244
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/23/2022 7:22:07 PM	66244
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/23/2022 7:22:07 PM	66244
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/23/2022 7:22:07 PM	66244
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/23/2022 7:22:07 PM	66244
Phenol	ND	0.33	5.0		µg/L	1	3/23/2022 7:22:07 PM	66244
Pyridine	ND	10	10		µg/L	1	3/23/2022 7:22:07 PM	66244
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/23/2022 7:22:07 PM	66244
Surr: 2-Fluorophenol	6.13	0	29.4-87.7	S	%Rec	1	3/23/2022 7:22:07 PM	66244
Surr: Phenol-d5	19.0	0	28.5-64.7	S	%Rec	1	3/23/2022 7:22:07 PM	66244
Surr: 2,4,6-Tribromophenol	2.36	0	18.6-129	S	%Rec	1	3/23/2022 7:22:07 PM	66244
Surr: Nitrobenzene-d5	48.7	0	36.9-103		%Rec	1	3/23/2022 7:22:07 PM	66244
Surr: 2-Fluorobiphenyl	46.4	0	38.1-99.9		%Rec	1	3/23/2022 7:22:07 PM	66244
Surr: 4-Terphenyl-d14	80.2	0	48-155		%Rec	1	3/23/2022 7:22:07 PM	66244
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	110	0.48	10		µg/L	10	3/24/2022 1:05:00 AM	R86694
Naphthalene	ND	0.034	0.10		µg/L	1	3/22/2022 4:46:00 PM	R86665
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/22/2022 4:46:00 PM	R86665
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/22/2022 4:46:00 PM	R86665
Acenaphthene	ND	0.031	0.10		µg/L	1	3/22/2022 4:46:00 PM	R86665
Fluorene	ND	0.031	0.10		µg/L	1	3/22/2022 4:46:00 PM	R86665
Phenanthrene	ND	0.057	0.10		µg/L	1	3/22/2022 4:46:00 PM	R86665
Anthracene	ND	0.034	0.10		µg/L	1	3/22/2022 4:46:00 PM	R86665
Fluoranthene	ND	0.10	0.20		µg/L	1	3/22/2022 4:46:00 PM	R86665
Pyrene	ND	0.16	0.20		µg/L	1	3/22/2022 4:46:00 PM	R86665
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/22/2022 4:46:00 PM	R86665
Chrysene	ND	0.024	0.10		µg/L	1	3/22/2022 4:46:00 PM	R86665
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/22/2022 4:46:00 PM	R86665
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/22/2022 4:46:00 PM	R86665

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203920**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-02R
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/16/2022 10:40:00 AM
Lab ID: 2203920-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	55.0	0	31.6-100		%Rec	1	3/22/2022 4:46:00 PM	R86665
Surr: 2-Fluorobiphenyl	53.4	0	26.7-90.1		%Rec	1	3/22/2022 4:46:00 PM	R86665
Surr: 4-Terphenyl-d14	86.9	0	72.3-147		%Rec	1	3/22/2022 4:46:00 PM	R86665

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203920**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-02R
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/16/2022 10:40:00 AM
Lab ID: 2203920-006D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.086	0.0016	0.0030		mg/L	1	4/6/2022 12:58:58 PM	66642
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 12:58:58 PM	66642
Cadmium	ND	0.0015	0.0020		mg/L	1	4/6/2022 12:58:58 PM	66642
Chromium	ND	0.0021	0.0060		mg/L	1	4/6/2022 12:58:58 PM	66642
Cobalt	0.0060	0.0024	0.0060	J	mg/L	1	4/6/2022 12:58:58 PM	66642
Nickel	0.013	0.0033	0.010		mg/L	1	4/6/2022 12:58:58 PM	66642
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 12:58:58 PM	66642
Vanadium	0.0075	0.0024	0.050	J	mg/L	1	4/6/2022 12:58:58 PM	66642
Zinc	0.011	0.0064	0.010		mg/L	1	4/6/2022 12:58:58 PM	66642
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	3/21/2022 3:11:22 PM	66254
Arsenic	0.0021	0.00063	0.0050	J	mg/L	5	3/21/2022 3:11:22 PM	66254
Lead	0.0012	0.00031	0.0025	J	mg/L	5	3/21/2022 3:11:22 PM	66254
Selenium	ND	0.0019	0.0050		mg/L	5	3/21/2022 3:11:22 PM	66254
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/24/2022 1:00:52 PM	66370

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203920**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-02R
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/16/2022 10:40:00 AM
Lab ID: 2203920-006E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.048	0.0011	0.0020		mg/L	1	3/17/2022 10:44:49 AM	A86535
Beryllium	ND	0.00088	0.0020		mg/L	1	3/17/2022 10:44:49 AM	A86535
Cadmium	ND	0.00098	0.0020		mg/L	1	3/17/2022 10:44:49 AM	A86535
Chromium	ND	0.0020	0.0060		mg/L	1	3/17/2022 10:44:49 AM	A86535
Cobalt	0.0041	0.0024	0.0060	J	mg/L	1	3/17/2022 10:44:49 AM	A86535
Nickel	0.014	0.0033	0.010		mg/L	1	3/17/2022 10:44:49 AM	A86535
Silver	0.0016	0.0013	0.0050	J	mg/L	1	3/17/2022 10:44:49 AM	A86535
Vanadium	0.0032	0.0017	0.050	J	mg/L	1	3/17/2022 10:44:49 AM	A86535
Zinc	0.013	0.0032	0.010		mg/L	1	3/17/2022 10:44:49 AM	A86535
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/21/2022 6:02:16 PM	B86624
Arsenic	0.0018	0.00061	0.0050	J	mg/L	5	3/21/2022 6:37:13 PM	B86624
Lead	ND	0.00028	0.0025		mg/L	5	3/21/2022 6:37:13 PM	B86624
Selenium	ND	0.0017	0.0050		mg/L	5	3/21/2022 6:37:13 PM	B86624
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/24/2022 1:03:00 PM	66370

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203920**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB 3-16-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/16/2022 10:40:00 AM
Lab ID: 2203920-007A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	3/22/2022 1:18:14 PM	R86666
Toluene	ND	0.20	1.0		µg/L	1	3/22/2022 1:18:14 PM	R86666
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/22/2022 1:18:14 PM	R86666
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/22/2022 1:18:14 PM	R86666
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/22/2022 1:18:14 PM	R86666
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/22/2022 1:18:14 PM	R86666
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	3/22/2022 1:18:14 PM	R86666
Acetone	ND	2.5	10		µg/L	1	3/22/2022 1:18:14 PM	R86666
Bromomethane	ND	0.85	3.0		µg/L	1	3/22/2022 1:18:14 PM	R86666
2-Butanone	5.7	2.0	10	J	µg/L	1	3/22/2022 1:18:14 PM	R86666
Carbon disulfide	ND	0.59	10		µg/L	1	3/22/2022 1:18:14 PM	R86666
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/22/2022 1:18:14 PM	R86666
Chloroform	ND	0.13	1.0		µg/L	1	3/22/2022 1:18:14 PM	R86666
Chloromethane	0.84	0.41	3.0	J	µg/L	1	3/22/2022 1:18:14 PM	R86666
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/22/2022 1:18:14 PM	R86666
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/22/2022 1:18:14 PM	R86666
1,1-Dichloroethene	0.57	0.20	1.0	J	µg/L	1	3/22/2022 1:18:14 PM	R86666
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/22/2022 1:18:14 PM	R86666
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/22/2022 1:18:14 PM	R86666
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/22/2022 1:18:14 PM	R86666
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/22/2022 1:18:14 PM	R86666
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/22/2022 1:18:14 PM	R86666
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/22/2022 1:18:14 PM	R86666
Styrene	ND	0.14	1.0		µg/L	1	3/22/2022 1:18:14 PM	R86666
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/22/2022 1:18:14 PM	R86666
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/22/2022 1:18:14 PM	R86666
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/22/2022 1:18:14 PM	R86666
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/22/2022 1:18:14 PM	R86666
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/22/2022 1:18:14 PM	R86666
Surr: 1,2-Dichloroethane-d4	87.3	0	70-130		%Rec	1	3/22/2022 1:18:14 PM	R86666
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	3/22/2022 1:18:14 PM	R86666
Surr: Dibromofluoromethane	96.8	0	70-130		%Rec	1	3/22/2022 1:18:14 PM	R86666
Surr: Toluene-d8	98.6	0	70-130		%Rec	1	3/22/2022 1:18:14 PM	R86666

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203920**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-16-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/16/2022
Lab ID: 2203920-008A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	1.2	1.1	5.0	J	µg/L	5	3/21/2022 8:57:49 PM	R86626
Toluene	ND	1.0	5.0		µg/L	5	3/21/2022 8:57:49 PM	R86626
Ethylbenzene	ND	1.1	5.0		µg/L	5	3/21/2022 8:57:49 PM	R86626
Methyl tert-butyl ether (MTBE)	340	2.0	5.0		µg/L	5	3/21/2022 8:57:49 PM	R86626
1,2,4-Trimethylbenzene	ND	0.61	5.0		µg/L	5	3/21/2022 8:57:49 PM	R86626
1,3,5-Trimethylbenzene	ND	0.91	5.0		µg/L	5	3/21/2022 8:57:49 PM	R86626
1,2-Dichloroethane (EDC)	12	1.3	5.0		µg/L	5	3/21/2022 8:57:49 PM	R86626
Acetone	ND	13	50		µg/L	5	3/21/2022 8:57:49 PM	R86626
Bromomethane	ND	4.3	15		µg/L	5	3/21/2022 8:57:49 PM	R86626
2-Butanone	ND	10	50		µg/L	5	3/21/2022 8:57:49 PM	R86626
Carbon disulfide	ND	3.0	50		µg/L	5	3/21/2022 8:57:49 PM	R86626
Chlorobenzene	ND	0.78	5.0		µg/L	5	3/21/2022 8:57:49 PM	R86626
Chloroform	ND	0.67	5.0		µg/L	5	3/21/2022 8:57:49 PM	R86626
Chloromethane	3.4	2.1	15	J	µg/L	5	3/21/2022 8:57:49 PM	R86626
cis-1,2-DCE	3.1	1.9	5.0	J	µg/L	5	3/21/2022 8:57:49 PM	R86626
1,1-Dichloroethane	30	1.4	5.0		µg/L	5	3/21/2022 8:57:49 PM	R86626
1,1-Dichloroethene	41	1.0	5.0		µg/L	5	3/21/2022 8:57:49 PM	R86626
Isopropylbenzene	ND	0.91	5.0		µg/L	5	3/21/2022 8:57:49 PM	R86626
4-Isopropyltoluene	ND	1.0	5.0		µg/L	5	3/21/2022 8:57:49 PM	R86626
Methylene Chloride	ND	2.5	15		µg/L	5	3/21/2022 8:57:49 PM	R86626
n-Butylbenzene	ND	1.3	15		µg/L	5	3/21/2022 8:57:49 PM	R86626
n-Propylbenzene	ND	0.91	5.0		µg/L	5	3/21/2022 8:57:49 PM	R86626
sec-Butylbenzene	ND	0.72	5.0		µg/L	5	3/21/2022 8:57:49 PM	R86626
Styrene	ND	0.68	5.0		µg/L	5	3/21/2022 8:57:49 PM	R86626
Tetrachloroethene (PCE)	ND	1.8	5.0		µg/L	5	3/21/2022 8:57:49 PM	R86626
1,1,1-Trichloroethane	2.3	1.5	5.0	J	µg/L	5	3/21/2022 8:57:49 PM	R86626
Trichloroethene (TCE)	5.1	1.0	5.0		µg/L	5	3/21/2022 8:57:49 PM	R86626
Vinyl chloride	ND	1.6	5.0		µg/L	5	3/21/2022 8:57:49 PM	R86626
Xylenes, Total	ND	1.9	7.5		µg/L	5	3/21/2022 8:57:49 PM	R86626
Surr: 1,2-Dichloroethane-d4	98.7	0	70-130		%Rec	5	3/21/2022 8:57:49 PM	R86626
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	5	3/21/2022 8:57:49 PM	R86626
Surr: Dibromofluoromethane	103	0	70-130		%Rec	5	3/21/2022 8:57:49 PM	R86626
Surr: Toluene-d8	104	0	70-130		%Rec	5	3/21/2022 8:57:49 PM	R86626
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.55	0.061	0.25		mg/L	5	3/21/2022 8:57:49 PM	G86626
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	5	3/21/2022 8:57:49 PM	G86626

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203920**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-16-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/16/2022
Lab ID: 2203920-008B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	3/21/2022 8:07:34 PM	66256

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203920**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-16-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/16/2022
Lab ID: 2203920-008C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.27	0.016	0.064		mg/L	1	3/22/2022 7:00:26 PM	66236
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/22/2022 7:00:26 PM	66236
Surr: DNOP	95.6	0	42.2-138		%Rec	1	3/22/2022 7:00:26 PM	66236
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	1.1	20		µg/L	1	3/23/2022 8:54:17 PM	66244
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/23/2022 8:54:17 PM	66244
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/23/2022 8:54:17 PM	66244
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/23/2022 8:54:17 PM	66244
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/23/2022 8:54:17 PM	66244
Diethyl phthalate	ND	3.9	10		µg/L	1	3/23/2022 8:54:17 PM	66244
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/23/2022 8:54:17 PM	66244
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/23/2022 8:54:17 PM	66244
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/23/2022 8:54:17 PM	66244
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/23/2022 8:54:17 PM	66244
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/23/2022 8:54:17 PM	66244
Phenol	ND	0.33	5.0		µg/L	1	3/23/2022 8:54:17 PM	66244
Pyridine	ND	10	10		µg/L	1	3/23/2022 8:54:17 PM	66244
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/23/2022 8:54:17 PM	66244
Surr: 2-Fluorophenol	40.0	0	29.4-87.7		%Rec	1	3/23/2022 8:54:17 PM	66244
Surr: Phenol-d5	31.9	0	28.5-64.7		%Rec	1	3/23/2022 8:54:17 PM	66244
Surr: 2,4,6-Tribromophenol	56.7	0	18.6-129		%Rec	1	3/23/2022 8:54:17 PM	66244
Surr: Nitrobenzene-d5	49.1	0	36.9-103		%Rec	1	3/23/2022 8:54:17 PM	66244
Surr: 2-Fluorobiphenyl	52.5	0	38.1-99.9		%Rec	1	3/23/2022 8:54:17 PM	66244
Surr: 4-Terphenyl-d14	70.6	0	48-155		%Rec	1	3/23/2022 8:54:17 PM	66244
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	63	0.48	10		µg/L	10	3/24/2022 1:48:00 AM	R86694
Naphthalene	ND	0.034	0.10		µg/L	1	3/22/2022 5:31:00 PM	R86665
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/22/2022 5:31:00 PM	R86665
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/22/2022 5:31:00 PM	R86665
Acenaphthene	ND	0.031	0.10		µg/L	1	3/22/2022 5:31:00 PM	R86665
Fluorene	ND	0.031	0.10		µg/L	1	3/22/2022 5:31:00 PM	R86665
Phenanthrene	ND	0.057	0.10		µg/L	1	3/22/2022 5:31:00 PM	R86665
Anthracene	ND	0.034	0.10		µg/L	1	3/22/2022 5:31:00 PM	R86665
Fluoranthene	ND	0.10	0.20		µg/L	1	3/22/2022 5:31:00 PM	R86665
Pyrene	ND	0.16	0.20		µg/L	1	3/22/2022 5:31:00 PM	R86665
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/22/2022 5:31:00 PM	R86665
Chrysene	ND	0.024	0.10		µg/L	1	3/22/2022 5:31:00 PM	R86665
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/22/2022 5:31:00 PM	R86665
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/22/2022 5:31:00 PM	R86665

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203920**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-16-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/16/2022
Lab ID: 2203920-008C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	59.6	0	31.6-100		%Rec	1	3/22/2022 5:31:00 PM	R86665
Surr: 2-Fluorobiphenyl	62.7	0	26.7-90.1		%Rec	1	3/22/2022 5:31:00 PM	R86665
Surr: 4-Terphenyl-d14	85.6	0	72.3-147		%Rec	1	3/22/2022 5:31:00 PM	R86665

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203920**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-16-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/16/2022
Lab ID: 2203920-008D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.34	0.0016	0.0030		mg/L	1	4/6/2022 1:01:46 PM	66643
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 1:01:46 PM	66643
Cadmium	ND	0.0015	0.0020		mg/L	1	4/6/2022 1:01:46 PM	66643
Chromium	0.0091	0.0021	0.0060		mg/L	1	4/6/2022 1:01:46 PM	66643
Cobalt	0.0075	0.0024	0.0060		mg/L	1	4/6/2022 1:01:46 PM	66643
Nickel	0.012	0.0033	0.010		mg/L	1	4/6/2022 1:01:46 PM	66643
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 1:01:46 PM	66643
Vanadium	0.026	0.0024	0.050	J	mg/L	1	4/6/2022 1:01:46 PM	66643
Zinc	0.022	0.0064	0.010		mg/L	1	4/6/2022 1:01:46 PM	66643
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/21/2022 2:20:03 PM	66254
Arsenic	0.0023	0.00013	0.0010		mg/L	1	3/21/2022 2:20:03 PM	66254
Lead	0.0095	0.00031	0.0025		mg/L	5	3/21/2022 3:18:43 PM	66254
Selenium	0.0019	0.00037	0.0010		mg/L	1	3/21/2022 2:20:03 PM	66254
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/24/2022 1:09:23 PM	66370

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203920**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-16-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/16/2022
Lab ID: 2203920-008E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.12	0.0011	0.0020		mg/L	1	3/17/2022 10:48:08 AM	A86535
Beryllium	ND	0.00088	0.0020		mg/L	1	3/17/2022 10:48:08 AM	A86535
Cadmium	ND	0.00098	0.0020		mg/L	1	3/17/2022 10:48:08 AM	A86535
Chromium	ND	0.0020	0.0060		mg/L	1	3/17/2022 10:48:08 AM	A86535
Cobalt	ND	0.0024	0.0060		mg/L	1	3/17/2022 10:48:08 AM	A86535
Nickel	0.0051	0.0033	0.010	J	mg/L	1	3/17/2022 10:48:08 AM	A86535
Silver	ND	0.0013	0.0050		mg/L	1	3/17/2022 10:48:08 AM	A86535
Vanadium	0.0022	0.0017	0.050	J	mg/L	1	3/17/2022 10:48:08 AM	A86535
Zinc	0.0096	0.0032	0.010	J	mg/L	1	3/17/2022 10:48:08 AM	A86535
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/21/2022 6:04:58 PM	B86624
Arsenic	0.00049	0.00012	0.0010	J	mg/L	1	3/21/2022 6:04:58 PM	B86624
Lead	0.00015	0.000057	0.00050	J	mg/L	1	3/21/2022 6:04:58 PM	B86624
Selenium	ND	0.00034	0.0010		mg/L	1	3/21/2022 6:04:58 PM	B86624
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/24/2022 1:11:31 PM	66370

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203920**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 1st Qtr
Collection Date:
Lab ID: 2203920-009A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	3/21/2022 9:26:16 PM	R86626
Toluene	ND	0.20	1.0		µg/L	1	3/21/2022 9:26:16 PM	R86626
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/21/2022 9:26:16 PM	R86626
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/21/2022 9:26:16 PM	R86626
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/21/2022 9:26:16 PM	R86626
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/21/2022 9:26:16 PM	R86626
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	3/21/2022 9:26:16 PM	R86626
Acetone	ND	2.5	10		µg/L	1	3/21/2022 9:26:16 PM	R86626
Bromomethane	ND	0.85	3.0		µg/L	1	3/21/2022 9:26:16 PM	R86626
2-Butanone	ND	2.0	10		µg/L	1	3/21/2022 9:26:16 PM	R86626
Carbon disulfide	ND	0.59	10		µg/L	1	3/21/2022 9:26:16 PM	R86626
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/21/2022 9:26:16 PM	R86626
Chloroform	ND	0.13	1.0		µg/L	1	3/21/2022 9:26:16 PM	R86626
Chloromethane	0.69	0.41	3.0	J	µg/L	1	3/21/2022 9:26:16 PM	R86626
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/21/2022 9:26:16 PM	R86626
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/21/2022 9:26:16 PM	R86626
1,1-Dichloroethene	0.68	0.20	1.0	J	µg/L	1	3/21/2022 9:26:16 PM	R86626
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/21/2022 9:26:16 PM	R86626
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/21/2022 9:26:16 PM	R86626
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/21/2022 9:26:16 PM	R86626
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/21/2022 9:26:16 PM	R86626
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/21/2022 9:26:16 PM	R86626
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/21/2022 9:26:16 PM	R86626
Styrene	ND	0.14	1.0		µg/L	1	3/21/2022 9:26:16 PM	R86626
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/21/2022 9:26:16 PM	R86626
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/21/2022 9:26:16 PM	R86626
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/21/2022 9:26:16 PM	R86626
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/21/2022 9:26:16 PM	R86626
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/21/2022 9:26:16 PM	R86626
Surr: 1,2-Dichloroethane-d4	96.8	0	70-130		%Rec	1	3/21/2022 9:26:16 PM	R86626
Surr: 4-Bromofluorobenzene	98.0	0	70-130		%Rec	1	3/21/2022 9:26:16 PM	R86626
Surr: Dibromofluoromethane	102	0	70-130		%Rec	1	3/21/2022 9:26:16 PM	R86626
Surr: Toluene-d8	103	0	70-130		%Rec	1	3/21/2022 9:26:16 PM	R86626

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203920**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 1st Qtr
Collection Date:
Lab ID: 2203920-009B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0035	0.0095		µg/L	1	3/21/2022 8:22:40 PM	66256

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

ANALYTICAL REPORT

April 01, 2022

Hall Environmental Analysis Laboratory

Sample Delivery Group: L1473076

Samples Received: 03/18/2022

Project Number:

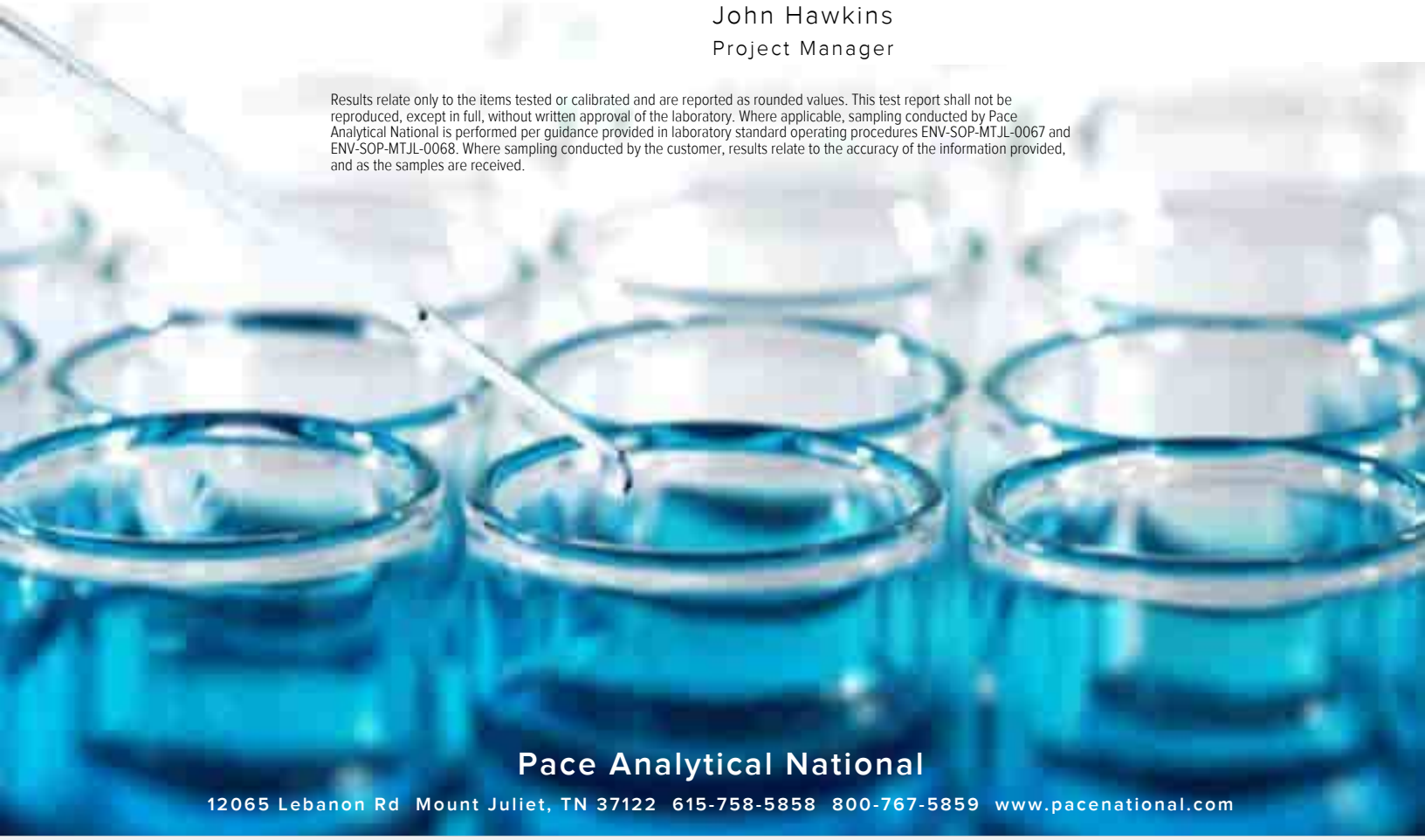
Description:

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By:

John Hawkins
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 4

Sr: Sample Results 5

22039020-001F EB 3-16-22 L1473076-01 5

2203920-002F MKTF-40 L1473076-02 6

2203920-003F MKTF-31 L1473076-03 7

2203920-004F MKTF-25 L1473076-04 8

2203920-005F MKTF-24 L1473076-05 9

2203920-006F MKTF-02R L1473076-06 10

2203920-008F DUP-3-16-22 L1473076-07 11

Qc: Quality Control Summary 12

Wet Chemistry by Method 4500CN E-2016 12

Gl: Glossary of Terms 15

Al: Accreditations & Locations 16

Sc: Sample Chain of Custody 17

22039020-001F EB 3-16-22 L1473076-01 WW

Collected by	Collected date/time	Received date/time
	03/16/22 08:00	03/18/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1838528	1	03/27/22 12:37	03/31/22 17:03	LDT	Mt. Juliet, TN

2203920-002F MKTF-40 L1473076-02 WW

Collected by	Collected date/time	Received date/time
	03/16/22 08:30	03/18/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1838528	1	03/27/22 12:37	03/31/22 17:04	LDT	Mt. Juliet, TN

2203920-003F MKTF-31 L1473076-03 WW

Collected by	Collected date/time	Received date/time
	03/16/22 09:10	03/18/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1838528	1	03/27/22 12:37	03/31/22 17:06	LDT	Mt. Juliet, TN

2203920-004F MKTF-25 L1473076-04 WW

Collected by	Collected date/time	Received date/time
	03/16/22 09:50	03/18/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1837590	1	03/27/22 23:48	03/31/22 17:35	LDT	Mt. Juliet, TN

2203920-005F MKTF-24 L1473076-05 WW

Collected by	Collected date/time	Received date/time
	03/16/22 10:15	03/18/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1836404	1	03/22/22 19:57	03/25/22 15:09	LDT	Mt. Juliet, TN

2203920-006F MKTF-02R L1473076-06 WW

Collected by	Collected date/time	Received date/time
	03/16/22 10:40	03/18/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1836404	1	03/22/22 19:57	03/25/22 15:11	LDT	Mt. Juliet, TN

2203920-008F DUP-3-16-22 L1473076-07 WW

Collected by	Collected date/time	Received date/time
	03/16/22 00:00	03/18/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1836404	1	03/22/22 19:57	03/25/22 15:14	LDT	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Received by OCD: 4/21/2023 9:21:57 AM

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	03/31/2022 17:03	WG1838528

Released to Imaging: 4/21/2023 9:40:26 AM

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.00839		0.00500	1	03/31/2022 17:04	WG1838528

Received by OCD: 4/21/2023 9:21:57 AM

Collected date/time: 03/16/22 09:10
L1473076

Wet Chemistry by Method 4500CN E-2016

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Cyanide	0.00964	P1	0.00500	1	03/31/2022 17:06	WG1838528

Released to Imaging: 4/21/2023 9:40:26 AM

Received by OCD: 4/21/2023 9:21:57 AM

Collected date/time: 03/16/22 09:50
L1473076

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.00896		0.00500	1	03/31/2022 17:35	WG1837590

Released to Imaging: 4/21/2023 9:40:26 AM

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND	P1	0.00500	1	03/25/2022 15:09	WG1836404

Received by OCD: 4/21/2023 9:21:57 AM

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.0129	J3 J6	0.00500	1	03/25/2022 15:11	WG1836404

Released to Imaging: 4/21/2023 9:40:26 AM

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	03/25/2022 15:14	WG1836404

Method Blank (MB)

(MB) R3774273-1 03/25/22 14:53

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1472882-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1472882-02 03/25/22 15:06 • (DUP) R3774273-5 03/25/22 15:07

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

L1473076-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1473076-05 03/25/22 15:09 • (DUP) R3774273-6 03/25/22 15:10

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	200	P1	20

Laboratory Control Sample (LCS)

(LCS) R3774273-2 03/25/22 14:54

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.101	101	87.1-120	

L1472837-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1472837-02 03/25/22 15:01 • (MS) R3774273-3 03/25/22 15:02 • (MSD) R3774273-4 03/25/22 15:05

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0902	0.0642	90.2	64.2	1	90.0-110		J3 J6	33.7	20

L1473076-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1473076-06 03/25/22 15:11 • (MS) R3774273-7 03/25/22 15:12 • (MSD) R3774273-8 03/25/22 15:13

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	0.0129	0.0921	0.116	79.2	103	1	90.0-110	J6	J3	23.0	20

Method Blank (MB)

(MB) R3776429-1 03/31/22 17:30

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1473076-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1473076-04 03/31/22 17:35 • (DUP) R3776429-3 03/31/22 17:36

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	0.00896	0.00951	1	5.96		20

L1474198-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1474198-07 03/31/22 17:43 • (DUP) R3776429-6 03/31/22 17:44

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3776429-2 03/31/22 17:31

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.0998	99.8	87.1-120	

L1473759-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1473759-02 03/31/22 17:37 • (MS) R3776429-4 03/31/22 17:38 • (MSD) R3776429-5 03/31/22 17:39

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0978	0.0991	95.4	96.7	1	90.0-110			1.32	20

L1474337-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1474337-01 03/31/22 17:48 • (MS) R3776429-7 03/31/22 17:49 • (MSD) R3776429-8 03/31/22 17:50

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0493	0.0546	49.3	54.6	1	90.0-110	J6	J6	10.2	20

Method Blank (MB)

(MB) R3776292-1 03/31/22 16:33

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1472759-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1472759-02 03/31/22 16:45 • (DUP) R3776292-5 03/31/22 16:46

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

L1473076-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1473076-03 03/31/22 17:06 • (DUP) R3776292-8 03/31/22 17:07

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	0.00964	0.00693	1	32.7	P1	20

Laboratory Control Sample (LCS)

(LCS) R3776292-2 03/31/22 16:34

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.0991	99.1	87.1-120	

L1472743-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1472743-04 03/31/22 16:38 • (MS) R3776292-3 03/31/22 16:39 • (MSD) R3776292-4 03/31/22 16:40

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0652	0.0977	65.2	97.7	1	90.0-110	J6	J3	39.9	20

L1472879-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1472879-02 03/31/22 16:53 • (MS) R3776292-6 03/31/22 16:54 • (MSD) R3776292-7 03/31/22 16:57

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0878	0.0826	87.8	82.6	1	90.0-110	J6	J6	6.10	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Received by OCD: 4/21/2023 9:21:57 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

E069

Hall Environmental Analysis Laboratory
01 Hawkins NE
que, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: clients.hallenvironmental.com

SUB CONTRATOR	Pace TN	COMPANY	PACE TN	PHONE	(800) 767-5859	FAX	(615) 758-5859
ADDRESS	12065 Lebanon Rd			ACCOUNT #		EMAIL	
CITY, STATE, ZIP	Mt. Juliet, TN 37122						

L1473076

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS	
1	2203920-001F	EB 3-16-22	500AMBHDP E-NAOH	Groundwater	3/16/2022 8:00:00 AM	1	Total Cyanide	-01
2	2203920-002F	MKTF-40	500AMBHDP E-NAOH	Groundwater	3/16/2022 8:30:00 AM	1	Total Cyanide	-02
3	2203920-003F	MKTF-31	500AMBHDP E-NAOH	Groundwater	3/16/2022 9:10:00 AM	1	Total Cyanide	-03
4	2203920-004F	MKTF-25	500AMBHDP E-NAOH	Groundwater	3/16/2022 9:50:00 AM	1	Total Cyanide	-04
5	2203920-005F	MKTF-24	500AMBHDP E-NAOH	Groundwater	3/16/2022 10:15:00 AM	1	Total Cyanide	-05
6	2203920-006F	MKTF-02R	500AMBHDP E-NAOH	Groundwater	3/16/2022 10:40:00 AM	1	Total Cyanide	-06
7	2203920-008F	DUP-3-16-22	500AMBHDP E-NAOH	Groundwater	3/16/2022	1	Total Cyanide	-07

DRA2 .6+.0=.6

Sample Receipt Checklist

COC Seal Present/Intact:	Y N	If Applicable		
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N	
Bottles arrive intact:	Y N	Pres.Correct/Check:	Y N	
Correct bottles used:	Y N			
Sufficient volume sent:	Y N			
RAD Screen <0.5 mR/hr:	Y N			

SPECIAL INSTRUCTIONS / COMMENTS: Fedex 5528 5947 9444

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By: CMC	Date: 3/17/2022	Time: 8:05 AM	Received By: Veronica Sistrunk	Date: 3/18/22	Time: 0900
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard X RUSH Next BD 2nd BD 3rd BD

REPORT TRANSMITTAL DESIRED:
HARDCOPY (extra cost) FAX EMAIL ONLINE

FOR LAB USE ONLY

Temp of samples °C Attempt to Cool ?

Comments

Released to Imaging: 4/21/2023 9:40:26 AM

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203920**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **A86535**	RunNo: **86535**
Prep Date:	Analysis Date: **3/17/2022**	SeqNo: **3053828** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **A86535**	RunNo: **86535**
Prep Date:	Analysis Date: **3/17/2022**	SeqNo: **3053830** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0017	0.0030	0.002000	0	82.9	50	150			J
Beryllium	0.0022	0.0020	0.002000	0	108	50	150			
Cadmium	0.0019	0.0020	0.002000	0	97.4	50	150			J
Chromium	0.0068	0.0060	0.006000	0	114	50	150			
Cobalt	0.0059	0.0060	0.006000	0	98.3	50	150			J
Nickel	0.0046	0.010	0.005000	0	92.0	50	150			J
Silver	0.0053	0.0050	0.005000	0	105	50	150			
Vanadium	0.010	0.050	0.01000	0	103	50	150			J
Zinc	0.012	0.010	0.01000	0	117	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **A86535**	RunNo: **86535**
Prep Date:	Analysis Date: **3/17/2022**	SeqNo: **3053834** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0030	0.5000	0	100	85	115			
Beryllium	0.51	0.0020	0.5000	0	102	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.2	85	115			
Chromium	0.50	0.0060	0.5000	0	99.2	85	115			
Cobalt	0.49	0.0060	0.5000	0	97.2	85	115			
Nickel	0.48	0.010	0.5000	0	95.8	85	115			
Silver	0.099	0.0050	0.1000	0	99.1	85	115			
Vanadium	0.50	0.050	0.5000	0	101	85	115			
Zinc	0.50	0.010	0.5000	0	99.2	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203920**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB-66642**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **66642**	RunNo: **87030**
Prep Date: **4/5/2022**	Analysis Date: **4/6/2022**	SeqNo: **3075584** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS-66642**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **66642**	RunNo: **87030**
Prep Date: **4/5/2022**	Analysis Date: **4/6/2022**	SeqNo: **3075585** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0018	0.0030	0.002000	0	88.4	50	150			J
Beryllium	0.0020	0.0020	0.002000	0	99.0	50	150			J
Cadmium	0.0016	0.0020	0.002000	0	78.0	50	150			J
Chromium	0.0063	0.0060	0.006000	0	105	50	150			
Cobalt	0.0061	0.0060	0.006000	0	102	50	150			
Nickel	0.0034	0.010	0.005000	0	67.7	50	150			J
Silver	0.0044	0.0050	0.005000	0	88.7	50	150			J
Vanadium	0.010	0.050	0.01000	0	101	50	150			J
Zinc	0.011	0.010	0.01000	0	107	50	150			

Sample ID: **LCS-66642**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **66642**	RunNo: **87030**
Prep Date: **4/5/2022**	Analysis Date: **4/6/2022**	SeqNo: **3075586** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0030	0.5000	0	97.1	85	115			
Beryllium	0.52	0.0020	0.5000	0	104	85	115			
Cadmium	0.47	0.0020	0.5000	0	94.7	85	115			
Chromium	0.49	0.0060	0.5000	0	97.6	85	115			
Cobalt	0.47	0.0060	0.5000	0	93.7	85	115			
Nickel	0.47	0.010	0.5000	0	93.3	85	115			
Silver	0.098	0.0050	0.1000	0	98.3	85	115			
Vanadium	0.49	0.050	0.5000	0	99.0	85	115			
Zinc	0.48	0.010	0.5000	0	95.7	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203920**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB-66643**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **66643**	RunNo: **87030**
Prep Date: **4/5/2022**	Analysis Date: **4/6/2022**	SeqNo: **3075587** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS-66643**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **66643**	RunNo: **87030**
Prep Date: **4/5/2022**	Analysis Date: **4/6/2022**	SeqNo: **3075588** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0021	0.0030	0.002000	0	105	50	150			J
Beryllium	0.0020	0.0020	0.002000	0	102	50	150			
Cadmium	0.0017	0.0020	0.002000	0	86.8	50	150			J
Chromium	0.0056	0.0060	0.006000	0	92.5	50	150			J
Cobalt	0.0068	0.0060	0.006000	0	114	50	150			
Nickel	0.0034	0.010	0.005000	0	69.0	50	150			J
Silver	0.0043	0.0050	0.005000	0	86.5	50	150			J
Vanadium	0.010	0.050	0.01000	0	101	50	150			J
Zinc	0.010	0.010	0.01000	0	99.8	50	150			J

Sample ID: **LCS-66643**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **66643**	RunNo: **87030**
Prep Date: **4/5/2022**	Analysis Date: **4/6/2022**	SeqNo: **3075589** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0030	0.5000	0	95.8	85	115			
Beryllium	0.52	0.0020	0.5000	0	103	85	115			
Cadmium	0.47	0.0020	0.5000	0	94.4	85	115			
Chromium	0.48	0.0060	0.5000	0	96.1	85	115			
Cobalt	0.46	0.0060	0.5000	0	92.4	85	115			
Nickel	0.46	0.010	0.5000	0	92.5	85	115			
Silver	0.099	0.0050	0.1000	0	98.6	85	115			
Vanadium	0.50	0.050	0.5000	0	99.5	85	115			
Zinc	0.47	0.010	0.5000	0	94.4	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203920**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW** Batch ID: **A86535** RunNo: **86535**
Prep Date: Analysis Date: **3/17/2022** SeqNo: **3053829** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **A86535** RunNo: **86535**
Prep Date: Analysis Date: **3/17/2022** SeqNo: **3053831** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0017	0.0020	0.002000	0	82.9	50	150			J
Beryllium	0.0022	0.0020	0.002000	0	108	50	150			
Cadmium	0.0019	0.0020	0.002000	0	97.4	50	150			J
Chromium	0.0068	0.0060	0.006000	0	114	50	150			
Cobalt	0.0059	0.0060	0.006000	0	98.3	50	150			J
Nickel	0.0046	0.010	0.005000	0	92.0	50	150			J
Silver	0.0053	0.0050	0.005000	0	105	50	150			
Vanadium	0.010	0.050	0.01000	0	103	50	150			J
Zinc	0.012	0.010	0.01000	0	117	50	150			

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **A86535** RunNo: **86535**
Prep Date: Analysis Date: **3/17/2022** SeqNo: **3053835** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0020	0.5000	0	100	85	115			
Beryllium	0.51	0.0020	0.5000	0	102	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.2	85	115			
Chromium	0.50	0.0060	0.5000	0	99.2	85	115			
Cobalt	0.49	0.0060	0.5000	0	97.2	85	115			
Nickel	0.48	0.010	0.5000	0	95.8	85	115			
Silver	0.099	0.0050	0.1000	0	99.1	85	115			
Vanadium	0.50	0.050	0.5000	0	101	85	115			
Zinc	0.50	0.010	0.5000	0	99.2	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203920**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB-66254**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **66254**	RunNo: **86616**
Prep Date: **3/17/2022**	Analysis Date: **3/21/2022**	SeqNo: **3057671** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **MSLLLCS-66254**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **66254**	RunNo: **86616**
Prep Date: **3/17/2022**	Analysis Date: **3/21/2022**	SeqNo: **3057672** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0012	0.0010	0.001000	0	116	50	150			
Arsenic	0.00095	0.0010	0.001000	0	95.3	50	150			J
Lead	0.00049	0.00050	0.0005000	0	98.9	50	150			J
Selenium	0.00089	0.0010	0.001000	0	89.2	50	150			J

Sample ID: **MSLCS-66254**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **66254**	RunNo: **86616**
Prep Date: **3/17/2022**	Analysis Date: **3/21/2022**	SeqNo: **3057673** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	99.3	85	115			
Arsenic	0.025	0.0010	0.02500	0	101	85	115			
Lead	0.013	0.00050	0.01250	0	102	85	115			
Selenium	0.026	0.0010	0.02500	0	105	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203920**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B86624**	RunNo: **86624**
Prep Date:	Analysis Date: **3/21/2022**	SeqNo: **3058031** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B86624**	RunNo: **86624**
Prep Date:	Analysis Date: **3/21/2022**	SeqNo: **3058032** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0010	0.0010	0.001000	0	104	50	150			
Arsenic	0.0011	0.0010	0.001000	0	110	50	150			
Lead	0.00054	0.00050	0.0005000	0	108	50	150			
Selenium	0.0012	0.0010	0.001000	0	117	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B86624**	RunNo: **86624**
Prep Date:	Analysis Date: **3/21/2022**	SeqNo: **3058033** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	102	85	115			
Arsenic	0.027	0.0010	0.02500	0	108	85	115			
Lead	0.014	0.00050	0.01250	0	108	85	115			
Selenium	0.025	0.0010	0.02500	0	101	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203920**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB-66370**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **PBW**	Batch ID: **66370**	RunNo: **86726**							
Prep Date: **3/24/2022**	Analysis Date: **3/24/2022**	SeqNo: **3061890**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-66370**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **BatchQC**	Batch ID: **66370**	RunNo: **86726**							
Prep Date: **3/24/2022**	Analysis Date: **3/24/2022**	SeqNo: **3061891**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00017	0.00020	0.0001500	0	114	50	150			J

Sample ID: **LCS-66370**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **LCSW**	Batch ID: **66370**	RunNo: **86726**							
Prep Date: **3/24/2022**	Analysis Date: **3/24/2022**	SeqNo: **3061892**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0049	0.00020	0.005000	0	98.6	85	115			

Sample ID: **2203920-005DMS**	SampType: **MS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **MKTF-24**	Batch ID: **66370**	RunNo: **86726**							
Prep Date: **3/24/2022**	Analysis Date: **3/24/2022**	SeqNo: **3061940**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.0010	0.005000	0	99.0	75	125			

Sample ID: **2203920-005DMSD**	SampType: **MSD**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **MKTF-24**	Batch ID: **66370**	RunNo: **86726**							
Prep Date: **3/24/2022**	Analysis Date: **3/24/2022**	SeqNo: **3061941**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0055	0.0010	0.005000	0	110	75	125	10.2	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203920**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB-66256**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **66256**	RunNo: **86618**							
Prep Date: **3/21/2022**	Analysis Date: **3/21/2022**	SeqNo: **3057941**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **MB-66256**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **66256**	RunNo: **86618**							
Prep Date: **3/21/2022**	Analysis Date: **3/21/2022**	SeqNo: **3057948**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-66256**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **LCSW**	Batch ID: **66256**	RunNo: **86618**							
Prep Date: **3/21/2022**	Analysis Date: **3/21/2022**	SeqNo: **3057949**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.098	0.010	0.1000	0	98.4	70	130			

Sample ID: **LCSD-66256**	SampType: **LCSD**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **LCSS02**	Batch ID: **66256**	RunNo: **86618**							
Prep Date: **3/21/2022**	Analysis Date: **3/21/2022**	SeqNo: **3057951**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.098	0.010	0.1000	0	98.3	70	130	0.0963	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203920**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB-66236**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **PBW**	Batch ID: **66236**	RunNo: **86643**
Prep Date: **3/17/2022**	Analysis Date: **3/22/2022**	SeqNo: **3059913** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.030	0.064								J
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.039		0.03750		105	42.2	138			

Sample ID: **LCSD-66236**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02**	Batch ID: **66236**	RunNo: **86643**
Prep Date: **3/17/2022**	Analysis Date: **3/22/2022**	SeqNo: **3059915** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.11	0.064	0.1875	0	58.7	31.7	75.4	5.39	20	
Surr: DNOP	0.020		0.01875		105	42.2	138	0	0	

Sample ID: **LCS-66236**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSW**	Batch ID: **66236**	RunNo: **86643**
Prep Date: **3/17/2022**	Analysis Date: **3/22/2022**	SeqNo: **3059918** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.12	0.064	0.1875	0	62.0	31.7	75.4			
Surr: DNOP	0.020		0.01875		107	42.2	138			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203920**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R86626**	RunNo: **86626**
Prep Date:	Analysis Date: **3/21/2022**	SeqNo: **3058196** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	96.9	70	130			
Toluene	22	1.0	20.00	0	111	70	130			
Chlorobenzene	23	1.0	20.00	0	113	70	130			
1,1-Dichloroethene	19	1.0	20.00	0	93.6	70	130			
Trichloroethene (TCE)	17	1.0	20.00	0	86.8	70	130			
Surr: 1,2-Dichloroethane-d4	9.0		10.00		90.1	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	9.0		10.00		89.7	70	130			
Surr: Toluene-d8	9.9		10.00		98.8	70	130			

Sample ID: **2203920-002ams**	SampType: **MS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **MKTF-40**	Batch ID: **R86626**	RunNo: **86626**
Prep Date:	Analysis Date: **3/21/2022**	SeqNo: **3058206** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	109	70	130			
Toluene	22	1.0	20.00	0	109	70	130			
Chlorobenzene	22	1.0	20.00	0	109	70	130			
1,1-Dichloroethene	20	1.0	20.00	0	102	70	130			
Trichloroethene (TCE)	19	1.0	20.00	0	94.7	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	9.9		10.00		99.3	70	130			

Sample ID: **2203920-002amsd**	SampType: **MSD**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **MKTF-40**	Batch ID: **R86626**	RunNo: **86626**
Prep Date:	Analysis Date: **3/21/2022**	SeqNo: **3058207** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	106	70	130	2.81	20	
Toluene	22	1.0	20.00	0	108	70	130	0.522	20	
Chlorobenzene	22	1.0	20.00	0	110	70	130	0.815	20	
1,1-Dichloroethene	20	1.0	20.00	0	99.5	70	130	2.52	20	
Trichloroethene (TCE)	18	1.0	20.00	0	91.4	70	130	3.52	20	
Surr: 1,2-Dichloroethane-d4	9.8		10.00		98.2	70	130	0	0	
Surr: 4-Bromofluorobenzene	9.8		10.00		97.6	70	130	0	0	
Surr: Dibromofluoromethane	10		10.00		100	70	130	0	0	
Surr: Toluene-d8	10		10.00		99.8	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203920**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R86626**	RunNo: **86626**
Prep Date:	Analysis Date: **3/21/2022**	SeqNo: **3058226** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	0.68	3.0								J
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.0		10.00		90.0	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		105	70	130			
Surr: Dibromofluoromethane	9.6		10.00		95.7	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203920**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R86666**	RunNo: **86666**
Prep Date:	Analysis Date: **3/22/2022**	SeqNo: **3059842** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	92.9	70	130			
Toluene	21	1.0	20.00	0	106	70	130			
Chlorobenzene	22	1.0	20.00	0	109	70	130			
1,1-Dichloroethene	18	1.0	20.00	0	91.0	70	130			
Trichloroethene (TCE)	17	1.0	20.00	0	86.8	70	130			
Surr: 1,2-Dichloroethane-d4	9.6		10.00		95.6	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		98.2	70	130			
Surr: Dibromofluoromethane	10		10.00		99.6	70	130			
Surr: Toluene-d8	10		10.00		105	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R86666**	RunNo: **86666**
Prep Date:	Analysis Date: **3/22/2022**	SeqNo: **3059870** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	0.66	3.0								J
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203920**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R86666**	RunNo: **86666**
Prep Date:	Analysis Date: **3/22/2022**	SeqNo: **3059870** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Styrene	ND	1.0								
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	8.8		10.00		88.2	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	9.3		10.00		92.6	70	130			
Surr: Toluene-d8	10		10.00		104	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203920**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **lcs-66244**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **66244**	RunNo: **86693**
Prep Date: **3/18/2022**	Analysis Date: **3/23/2022**	SeqNo: **3061236** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	48	5.0	100.0	0	48.0	15	87.6			
Phenol	65	5.0	200.0	0	32.4	16.8	70.5			
Surr: 2-Fluorophenol	85		200.0		42.3	29.4	87.7			
Surr: Phenol-d5	65		200.0		32.7	28.5	64.7			
Surr: 2,4,6-Tribromophenol	120		200.0		59.9	18.6	129			
Surr: Nitrobenzene-d5	57		100.0		56.9	36.9	103			
Surr: 2-Fluorobiphenyl	50		100.0		50.1	38.1	99.9			
Surr: 4-Terphenyl-d14	92		100.0		92.4	48	155			

Sample ID: **lcsd-66244**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **66244**	RunNo: **86693**
Prep Date: **3/18/2022**	Analysis Date: **3/23/2022**	SeqNo: **3061237** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	40	5.0	100.0	0	40.1	15	87.6	17.9	30.4	
Phenol	56	5.0	200.0	0	27.9	16.8	70.5	14.7	37.2	
Surr: 2-Fluorophenol	73		200.0		36.7	29.4	87.7	0	0	
Surr: Phenol-d5	58		200.0		29.1	28.5	64.7	0	0	
Surr: 2,4,6-Tribromophenol	110		200.0		54.9	18.6	129	0	0	
Surr: Nitrobenzene-d5	48		100.0		47.6	36.9	103	0	0	
Surr: 2-Fluorobiphenyl	47		100.0		46.6	38.1	99.9	0	0	
Surr: 4-Terphenyl-d14	95		100.0		94.7	48	155	0	0	

Sample ID: **mb-66244**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **66244**	RunNo: **86693**
Prep Date: **3/18/2022**	Analysis Date: **3/23/2022**	SeqNo: **3061238** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	5.0								
2,4-Dinitrophenol	ND	5.0								
2-Methylphenol	ND	5.0								
3+4-Methylphenol	ND	5.0								
Phenol	ND	5.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203920**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **mb-66244**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **66244**	RunNo: **86693**
Prep Date: **3/18/2022**	Analysis Date: **3/23/2022**	SeqNo: **3061238** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Pyridine	ND	10								
2,4,6-Trichlorophenol	ND	5.0								
Surr: 2-Fluorophenol	81		200.0		40.5	29.4	87.7			
Surr: Phenol-d5	63		200.0		31.7	28.5	64.7			
Surr: 2,4,6-Tribromophenol	97		200.0		48.5	18.6	129			
Surr: Nitrobenzene-d5	50		100.0		50.0	36.9	103			
Surr: 2-Fluorobiphenyl	50		100.0		49.5	38.1	99.9			
Surr: 4-Terphenyl-d14	82		100.0		81.8	48	155			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203920**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **mb-66244**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **R86665**	RunNo: **86665**
Prep Date:	Analysis Date: **3/22/2022**	SeqNo: **3059830** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.10								
2-Methylnaphthalene	ND	0.10								
Acenaphthene	ND	0.10								
Fluorene	ND	0.10								
Phenanthrene	ND	0.10								
Anthracene	ND	0.10								
Fluoranthene	ND	0.20								
Pyrene	ND	0.20								
Benz(a)anthracene	ND	0.10								
Chrysene	ND	0.10								
Benzo(b)fluoranthene	ND	0.10								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	59		100.0		58.9	31.6	100			
Surr: 2,4,6-Tribromophenol	82		200.0		41.0	22	101			
Surr: 2-Fluorobiphenyl	55		100.0		55.2	26.7	90.1			
Surr: 4-Terphenyl-d14	98		100.0		98.0	72.3	147			

Sample ID: **lcs-66244-lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **R86665**	RunNo: **86665**
Prep Date:	Analysis Date: **3/22/2022**	SeqNo: **3059831** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.72	0.10	2.000	0	36.0	20.2	48.4			
Naphthalene	1.1	0.10	2.000	0	57.0	21.3	79.9			
1-Methylnaphthalene	1.2	0.10	2.000	0	58.0	22.2	80.3			
2-Methylnaphthalene	1.1	0.10	2.000	0	56.0	20.6	80.1			
Acenaphthene	1.3	0.10	2.000	0	66.0	29.8	82.7			
Fluorene	1.4	0.10	2.000	0	70.0	33.3	86			
Phenanthrene	1.5	0.10	2.000	0	73.0	38.2	93.9			
Anthracene	1.5	0.10	2.000	0	77.0	41.1	95.6			
Fluoranthene	1.8	0.20	2.000	0	88.0	52.9	123			
Pyrene	1.7	0.20	2.000	0	83.0	51	113			
Benz(a)anthracene	2.0	0.10	2.000	0	100	51	147			
Chrysene	1.7	0.10	2.000	0	85.0	55.3	115			
Benzo(b)fluoranthene	1.9	0.10	2.000	0	95.0	44.4	136			
Indeno(1,2,3-cd)pyrene	2.2	0.30	2.000	0	110	31.4	165			
Surr: Nitrobenzene-d5	71		100.0		70.8	31.6	100			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203920**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **lcs-66244-lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **R86665**	RunNo: **86665**
Prep Date:	Analysis Date: **3/22/2022**	SeqNo: **3059831** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	93		200.0		46.4	22	101			
Surr: 2-Fluorobiphenyl	66		100.0		66.3	26.7	90.1			
Surr: 4-Terphenyl-d14	91		100.0		90.6	72.3	147			

Sample ID: **lcsd-66244-lf**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02**	Batch ID: **R86665**	RunNo: **86665**
Prep Date:	Analysis Date: **3/22/2022**	SeqNo: **3059832** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.74	0.10	2.000	0	37.0	20.2	48.4	2.74	30.1	
Naphthalene	1.3	0.10	2.000	0	64.0	21.3	79.9	11.6	25.6	
1-Methylnaphthalene	1.3	0.10	2.000	0	64.0	22.2	80.3	9.84	25	
2-Methylnaphthalene	1.3	0.10	2.000	0	63.0	20.6	80.1	11.8	25	
Acenaphthene	1.4	0.10	2.000	0	69.0	29.8	82.7	4.44	27.8	
Fluorene	1.4	0.10	2.000	0	70.0	33.3	86	0	26.4	
Phenanthrene	1.5	0.10	2.000	0	73.0	38.2	93.9	0	27.9	
Anthracene	1.5	0.10	2.000	0	74.0	41.1	95.6	3.97	25.6	
Fluoranthene	1.6	0.20	2.000	0	81.0	52.9	123	8.28	22.8	
Pyrene	1.6	0.20	2.000	0	79.0	51	113	4.94	20	
Benz(a)anthracene	1.9	0.10	2.000	0	94.0	51	147	6.19	24.1	
Chrysene	1.7	0.10	2.000	0	84.0	55.3	115	1.18	20	
Benzo(b)fluoranthene	1.8	0.10	2.000	0	90.0	44.4	136	5.41	24.5	
Indeno(1,2,3-cd)pyrene	2.2	0.30	2.000	0	108	31.4	165	1.83	21.1	
Surr: Nitrobenzene-d5	70		100.0		70.2	31.6	100	0	0	
Surr: 2,4,6-Tribromophenol	90		200.0		45.2	22	101	0	0	
Surr: 2-Fluorobiphenyl	65		100.0		65.3	26.7	90.1	0	0	
Surr: 4-Terphenyl-d14	91		100.0		91.3	72.3	147	0	0	

Sample ID: **mb-66282**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **R86694**	RunNo: **86694**
Prep Date:	Analysis Date: **3/23/2022**	SeqNo: **3061263** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Surr: Nitrobenzene-d5	61		100.0		61.1	31.6	100			
Surr: 2,4,6-Tribromophenol	85		200.0		42.7	22	101			
Surr: 2-Fluorobiphenyl	57		100.0		57.5	26.7	90.1			
Surr: 4-Terphenyl-d14	98		100.0		98.4	72.3	147			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203920**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **lcs-66282-lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**							
Client ID: **LCSW**	Batch ID: **R86694**	RunNo: **86694**							
Prep Date:	Analysis Date: **3/23/2022**	SeqNo: **3061264**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.72	0.10	2.000	0	36.0	20.2	48.4			
Surr: Nitrobenzene-d5	67		100.0		67.2	31.6	100			
Surr: 2,4,6-Tribromophenol	91		200.0		45.6	22	101			
Surr: 2-Fluorobiphenyl	65		100.0		65.1	26.7	90.1			
Surr: 4-Terphenyl-d14	92		100.0		92.0	72.3	147			

Sample ID: **lcsd-66282-lf**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**							
Client ID: **LCSS02**	Batch ID: **R86694**	RunNo: **86694**							
Prep Date:	Analysis Date: **3/23/2022**	SeqNo: **3061265**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.70	0.10	2.000	0	35.0	20.2	48.4	2.82	30.1	
Surr: Nitrobenzene-d5	66		100.0		66.5	31.6	100	0	0	
Surr: 2,4,6-Tribromophenol	90		200.0		44.8	22	101	0	0	
Surr: 2-Fluorobiphenyl	64		100.0		63.6	26.7	90.1	0	0	
Surr: 4-Terphenyl-d14	93		100.0		92.6	72.3	147	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203920**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **2.5ug lcs gro**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **G86626**	RunNo: **86626**
Prep Date:	Analysis Date: **3/21/2022**	SeqNo: **3058229** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.50	0.050	0.5000	0	101	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			

Sample ID: **2203920-003ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **MKTF-31**	Batch ID: **G86626**	RunNo: **86626**
Prep Date:	Analysis Date: **3/21/2022**	SeqNo: **3058236** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	2.7	0.25	2.500	0.5520	87.4	70	130			
Surr: 4-Bromofluorobenzene	53		50.00		106	70	130			

Sample ID: **2203920-003amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **MKTF-31**	Batch ID: **G86626**	RunNo: **86626**
Prep Date:	Analysis Date: **3/21/2022**	SeqNo: **3058237** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	3.6	0.25	2.500	0.5520	121	70	130	26.9	20	R
Surr: 4-Bromofluorobenzene	51		50.00		103	70	130	0	0	

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **G86626**	RunNo: **86626**
Prep Date:	Analysis Date: **3/21/2022**	SeqNo: **3058249** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.034	0.050								J
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: Marathon Work Order Number: 2203920 RcptNo: 1

Received By: Cheyenne Cason 3/17/2022 7:00:00 AM CMC

Completed By: Cheyenne Cason 3/17/2022 7:53:15 AM CMC

Reviewed By: SRC 3/17/22

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☑ No ☐ NA ☐
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: 14 (7) (<2 or >12 unless noted)
Adjusted? NO
Checked by: SRC 3/17/22
Labeled by: CMC 3/17/22

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.9	Good	Yes			
2	3.9	Good	Yes			
3	0.2	Good	Yes			
4	1.3	Good	Yes			

Released to Imaging: 4/21/2023 9:21:57 AM

Chain-of-Custody Record

Client: Marathon Gallup Refinery

Mailing Address: 92 Giant Crossing Road
Jamestown, NM,87347

Phone #: 808-640-1823

email or Fax#:

QA/QC Package:
X Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

X EDD (Type)

Turn-Around Time:
X Standard Rush

Project Name:
2022 GW Sampling 1st Quarter

Project #: **697-080-001**

Project Manager:
Lesli Alexander/Mackensie Swift

Sampler: Hilario Trejo
On Ice: X Yes ☐ No
# of Coolers: 4
Cooler Temp(including CF): See Remarks

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2203920
3/16	8:00		EB-3-16-22	13		001
3/16	8:30		MKTF-40	13		002
3/16	9:10		MKTF-31	13		003
3/16	9:50		MKTF-25	13		004
3/16	10:15		MKTF-24	13		005
3/16	10:40		MKTF-02R	13		006
3/16	10:40		FB-3-16-22	2		007
3/16	—		DUP-3-16-22	13		008
			Trip Blank			009

Analysis Request

See Analyte List	8260B: VOC	8270C: SVOC	8270C SIM: PAH, 1,4 Dioxane	8015: TPH GRO/DRO/MRO	E200.7: Metals	E200.7: Dissolved Metals	E245.1 Mercury	E504.1: EDB	E335.4: Cyanide Subbed		537.1: PFAS	SM 5201B: BOD	410.4: COD	SM9223B E. Coli
X	X	X	X	X	X	X	X	X	X					
X	X	X	X	X	X	X	X	X	X					
X	X	X	X	X	X	X	X	X	X					
X	X	X	X	X	X	X	X	X	X					
X	X	X	X	X	X	X	X	X	X					
X	X	X	X	✓	X	X	X	X	X					
	X													
X	X	X	X	X	X	X	X	X	X					

Date	Time	Relinquished by	Received by	Via	Date	Time
3/16	1:00	Hilario Trejo	Chr Carr		3/17/22	0700

0.8+0.1 = 0.9
3.8+0.1 = 3.9
0.1+0.1 = 0.2
1.2+0.1 = 1.3

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Received by OCD: 4/21/2023 9:21:57 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

April 22, 2022

Lesli Alexander

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX (505) 632-3911

RE: 2022 GW Sampling 1st Qtr OrderNo.: 2203989

Dear Lesli Alexander:

Hall Environmental Analysis Laboratory received 9 sample(s) on 3/18/2022 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued April 12, 2022.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **2203989**
Date: **4/22/2022**

CLIENT: Marathon
Project: 2022 GW Sampling 1st Qtr

Analytical Notes Regarding EPA Method 8270:
"S" flagged surrogates denote low surrogate recoveries due to matrix interferences/sample dilution.

Naphthalene was reported by EPA Method 8270 instead of EPA Method 8270SIMs becuase of its elevated concentration for sample MKTF-01R

Analytical Report
Lab Order: **2203989**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-17-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/17/2022 8:00:00 AM
Lab ID: 2203989-001A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	3/21/2022 10:23:20 PM	R86626
Toluene	ND	0.20	1.0		µg/L	1	3/21/2022 10:23:20 PM	R86626
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/21/2022 10:23:20 PM	R86626
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/21/2022 10:23:20 PM	R86626
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/21/2022 10:23:20 PM	R86626
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/21/2022 10:23:20 PM	R86626
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	3/21/2022 10:23:20 PM	R86626
Acetone	ND	2.5	10		µg/L	1	3/21/2022 10:23:20 PM	R86626
Bromomethane	ND	0.85	3.0		µg/L	1	3/21/2022 10:23:20 PM	R86626
2-Butanone	5.3	2.0	10	J	µg/L	1	3/21/2022 10:23:20 PM	R86626
Carbon disulfide	ND	0.59	10		µg/L	1	3/21/2022 10:23:20 PM	R86626
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/21/2022 10:23:20 PM	R86626
Chloroform	ND	0.13	1.0		µg/L	1	3/21/2022 10:23:20 PM	R86626
Chloromethane	ND	0.41	3.0		µg/L	1	3/21/2022 10:23:20 PM	R86626
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/21/2022 10:23:20 PM	R86626
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/21/2022 10:23:20 PM	R86626
1,1-Dichloroethene	0.54	0.20	1.0	J	µg/L	1	3/21/2022 10:23:20 PM	R86626
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/21/2022 10:23:20 PM	R86626
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/21/2022 10:23:20 PM	R86626
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/21/2022 10:23:20 PM	R86626
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/21/2022 10:23:20 PM	R86626
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/21/2022 10:23:20 PM	R86626
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/21/2022 10:23:20 PM	R86626
Styrene	ND	0.14	1.0		µg/L	1	3/21/2022 10:23:20 PM	R86626
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/21/2022 10:23:20 PM	R86626
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/21/2022 10:23:20 PM	R86626
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/21/2022 10:23:20 PM	R86626
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/21/2022 10:23:20 PM	R86626
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/21/2022 10:23:20 PM	R86626
Surr: 1,2-Dichloroethane-d4	97.5	0	70-130		%Rec	1	3/21/2022 10:23:20 PM	R86626
Surr: 4-Bromofluorobenzene	99.7	0	70-130		%Rec	1	3/21/2022 10:23:20 PM	R86626
Surr: Dibromofluoromethane	98.8	0	70-130		%Rec	1	3/21/2022 10:23:20 PM	R86626
Surr: Toluene-d8	101	0	70-130		%Rec	1	3/21/2022 10:23:20 PM	R86626
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.037	0.012	0.050	J	mg/L	1	3/21/2022 10:23:20 PM	G86626
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	3/21/2022 10:23:20 PM	G86626

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203989**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-17-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/17/2022 8:00:00 AM
Lab ID: 2203989-001B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	3/21/2022 8:37:48 PM	66256

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203989**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-17-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/17/2022 8:00:00 AM
Lab ID: 2203989-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.021	0.016	0.064	J	mg/L	1	3/22/2022 7:24:04 PM	66267
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/22/2022 7:24:04 PM	66267
Surr: DNOP	107	0	42.2-138		%Rec	1	3/22/2022 7:24:04 PM	66267
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	1.1	20		µg/L	1	3/24/2022 11:26:36 AM	66282
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/24/2022 11:26:36 AM	66282
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/24/2022 11:26:36 AM	66282
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/24/2022 11:26:36 AM	66282
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/24/2022 11:26:36 AM	66282
Diethyl phthalate	ND	3.9	10		µg/L	1	3/24/2022 11:26:36 AM	66282
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/24/2022 11:26:36 AM	66282
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/24/2022 11:26:36 AM	66282
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/24/2022 11:26:36 AM	66282
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/24/2022 11:26:36 AM	66282
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/24/2022 11:26:36 AM	66282
Phenol	ND	0.33	5.0		µg/L	1	3/24/2022 11:26:36 AM	66282
Pyridine	ND	10	10		µg/L	1	3/24/2022 11:26:36 AM	66282
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/24/2022 11:26:36 AM	66282
Surr: 2-Fluorophenol	44.0	0	29.4-87.7		%Rec	1	3/24/2022 11:26:36 AM	66282
Surr: Phenol-d5	33.2	0	28.5-64.7		%Rec	1	3/24/2022 11:26:36 AM	66282
Surr: 2,4,6-Tribromophenol	55.8	0	18.6-129		%Rec	1	3/24/2022 11:26:36 AM	66282
Surr: Nitrobenzene-d5	50.4	0	36.9-103		%Rec	1	3/24/2022 11:26:36 AM	66282
Surr: 2-Fluorobiphenyl	52.1	0	38.1-99.9		%Rec	1	3/24/2022 11:26:36 AM	66282
Surr: 4-Terphenyl-d14	81.5	0	48-155		%Rec	1	3/24/2022 11:26:36 AM	66282
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.048	1.0		µg/L	1	3/23/2022 1:47:00 PM	R86694
Naphthalene	ND	0.034	0.10		µg/L	1	3/23/2022 1:47:00 PM	R86694
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/23/2022 1:47:00 PM	R86694
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/23/2022 1:47:00 PM	R86694
Acenaphthene	ND	0.031	0.10		µg/L	1	3/23/2022 1:47:00 PM	R86694
Fluorene	ND	0.031	0.10		µg/L	1	3/23/2022 1:47:00 PM	R86694
Phenanthrene	ND	0.057	0.10		µg/L	1	3/23/2022 1:47:00 PM	R86694
Anthracene	ND	0.034	0.10		µg/L	1	3/23/2022 1:47:00 PM	R86694
Fluoranthene	ND	0.10	0.20		µg/L	1	3/23/2022 1:47:00 PM	R86694
Pyrene	ND	0.16	0.20		µg/L	1	3/23/2022 1:47:00 PM	R86694
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/23/2022 1:47:00 PM	R86694
Chrysene	ND	0.024	0.10		µg/L	1	3/23/2022 1:47:00 PM	R86694
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/23/2022 1:47:00 PM	R86694
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/23/2022 1:47:00 PM	R86694

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203989**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-17-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/17/2022 8:00:00 AM
Lab ID: 2203989-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	65.5	0	31.6-100		%Rec	1	3/23/2022 1:47:00 PM	R86694
Surr: 2-Fluorobiphenyl	65.0	0	26.7-90.1		%Rec	1	3/23/2022 1:47:00 PM	R86694
Surr: 4-Terphenyl-d14	107	0	72.3-147	E	%Rec	1	3/23/2022 1:47:00 PM	R86694

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203989**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-17-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/17/2022 8:00:00 AM
Lab ID: 2203989-001D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	ND	0.0016	0.0030		mg/L	1	4/6/2022 1:04:30 PM	66643
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 1:04:30 PM	66643
Cadmium	ND	0.0015	0.0020		mg/L	1	4/6/2022 1:04:30 PM	66643
Chromium	ND	0.0021	0.0060		mg/L	1	4/6/2022 1:04:30 PM	66643
Cobalt	ND	0.0024	0.0060		mg/L	1	4/6/2022 1:04:30 PM	66643
Nickel	ND	0.0033	0.010		mg/L	1	4/6/2022 1:04:30 PM	66643
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 1:04:30 PM	66643
Vanadium	ND	0.0024	0.050		mg/L	1	4/6/2022 1:04:30 PM	66643
Zinc	ND	0.0064	0.010		mg/L	1	4/6/2022 1:04:30 PM	66643
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/23/2022 11:48:58 AM	66341
Arsenic	ND	0.00013	0.0010		mg/L	1	3/23/2022 11:48:58 AM	66341
Lead	ND	0.000061	0.00050		mg/L	1	3/23/2022 11:48:58 AM	66341
Selenium	ND	0.00037	0.0010		mg/L	1	3/23/2022 11:48:58 AM	66341
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/24/2022 1:13:38 PM	66371

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203989**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-17-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/17/2022 8:00:00 AM
Lab ID: 2203989-001E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	ND	0.0011	0.0020		mg/L	1	3/18/2022 11:18:56 AM	A86575
Beryllium	ND	0.00088	0.0020		mg/L	1	3/18/2022 11:18:56 AM	A86575
Cadmium	ND	0.00098	0.0020		mg/L	1	3/18/2022 11:18:56 AM	A86575
Chromium	ND	0.0020	0.0060		mg/L	1	3/18/2022 11:18:56 AM	A86575
Cobalt	ND	0.0024	0.0060		mg/L	1	3/18/2022 11:18:56 AM	A86575
Nickel	ND	0.0033	0.010		mg/L	1	3/18/2022 11:18:56 AM	A86575
Silver	ND	0.0013	0.0050		mg/L	1	3/18/2022 11:18:56 AM	A86575
Vanadium	ND	0.0017	0.050		mg/L	1	3/18/2022 11:18:56 AM	A86575
Zinc	0.0044	0.0032	0.010	J	mg/L	1	3/18/2022 11:18:56 AM	A86575
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/21/2022 6:07:39 PM	B86624
Arsenic	ND	0.00012	0.0010		mg/L	1	3/21/2022 6:07:39 PM	B86624
Lead	ND	0.000057	0.00050		mg/L	1	3/21/2022 6:07:39 PM	B86624
Selenium	ND	0.00034	0.0010		mg/L	1	3/21/2022 6:07:39 PM	B86624
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/24/2022 1:15:46 PM	66371

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203989**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-01R
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/17/2022 8:46:00 AM
Lab ID: 2203989-002A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	6200	23	100		µg/L	100	3/22/2022 12:45:46 AM	R86626
Toluene	340	2.0	10		µg/L	10	3/22/2022 1:14:14 AM	R86626
Ethylbenzene	580	2.1	10		µg/L	10	3/22/2022 1:14:14 AM	R86626
Methyl tert-butyl ether (MTBE)	110	3.9	10		µg/L	10	3/22/2022 1:14:14 AM	R86626
1,2,4-Trimethylbenzene	350	1.2	10		µg/L	10	3/22/2022 1:14:14 AM	R86626
1,3,5-Trimethylbenzene	16	1.8	10		µg/L	10	3/22/2022 1:14:14 AM	R86626
1,2-Dichloroethane (EDC)	5.1	2.5	10	J	µg/L	10	3/22/2022 1:14:14 AM	R86626
Acetone	ND	25	100		µg/L	10	3/22/2022 1:14:14 AM	R86626
Bromomethane	ND	8.5	30		µg/L	10	3/22/2022 1:14:14 AM	R86626
2-Butanone	ND	20	100		µg/L	10	3/22/2022 1:14:14 AM	R86626
Carbon disulfide	ND	5.9	100		µg/L	10	3/22/2022 1:14:14 AM	R86626
Chlorobenzene	ND	1.6	10		µg/L	10	3/22/2022 1:14:14 AM	R86626
Chloroform	5.7	1.3	10	J	µg/L	10	3/22/2022 1:14:14 AM	R86626
Chloromethane	ND	4.1	30		µg/L	10	3/22/2022 1:14:14 AM	R86626
cis-1,2-DCE	ND	3.9	10		µg/L	10	3/22/2022 1:14:14 AM	R86626
1,1-Dichloroethane	5.5	2.7	10	J	µg/L	10	3/22/2022 1:14:14 AM	R86626
1,1-Dichloroethene	ND	2.0	10		µg/L	10	3/22/2022 1:14:14 AM	R86626
Isopropylbenzene	28	1.8	10		µg/L	10	3/22/2022 1:14:14 AM	R86626
4-Isopropyltoluene	2.7	2.0	10	J	µg/L	10	3/22/2022 1:14:14 AM	R86626
Methylene Chloride	ND	5.0	30		µg/L	10	3/22/2022 1:14:14 AM	R86626
n-Butylbenzene	11	2.5	30	J	µg/L	10	3/22/2022 1:14:14 AM	R86626
n-Propylbenzene	68	1.8	10		µg/L	10	3/22/2022 1:14:14 AM	R86626
sec-Butylbenzene	4.2	1.4	10	J	µg/L	10	3/22/2022 1:14:14 AM	R86626
Styrene	ND	1.4	10		µg/L	10	3/22/2022 1:14:14 AM	R86626
Tetrachloroethene (PCE)	ND	3.6	10		µg/L	10	3/22/2022 1:14:14 AM	R86626
1,1,1-Trichloroethane	ND	3.0	10		µg/L	10	3/22/2022 1:14:14 AM	R86626
Trichloroethene (TCE)	3.0	2.0	10	J	µg/L	10	3/22/2022 1:14:14 AM	R86626
Vinyl chloride	34	3.2	10		µg/L	10	3/22/2022 1:14:14 AM	R86626
Xylenes, Total	820	3.7	15		µg/L	10	3/22/2022 1:14:14 AM	R86626
Surr: 1,2-Dichloroethane-d4	89.9	0	70-130		%Rec	10	3/22/2022 1:14:14 AM	R86626
Surr: 4-Bromofluorobenzene	95.5	0	70-130		%Rec	10	3/22/2022 1:14:14 AM	R86626
Surr: Dibromofluoromethane	92.8	0	70-130		%Rec	10	3/22/2022 1:14:14 AM	R86626
Surr: Toluene-d8	97.1	0	70-130		%Rec	10	3/22/2022 1:14:14 AM	R86626
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	21	0.12	0.50		mg/L	10	3/22/2022 1:14:14 AM	G86626
Surr: 4-Bromofluorobenzene	96.7	0	70-130		%Rec	10	3/22/2022 1:14:14 AM	G86626

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203989**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-01R
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/17/2022 8:46:00 AM
Lab ID: 2203989-002B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	3/21/2022 8:52:49 PM	66256

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203989**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-01R
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/17/2022 8:46:00 AM
Lab ID: 2203989-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	1.3	0.016	0.064		mg/L	1	3/22/2022 7:47:50 PM	66267
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/22/2022 7:47:50 PM	66267
Surr: DNOP	104	0	42.2-138		%Rec	1	3/22/2022 7:47:50 PM	66267
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	1.1	20		µg/L	1	3/24/2022 12:08:15 PM	66282
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/24/2022 12:08:15 PM	66282
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/24/2022 12:08:15 PM	66282
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/24/2022 12:08:15 PM	66282
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/24/2022 12:08:15 PM	66282
Diethyl phthalate	ND	3.9	10		µg/L	1	3/24/2022 12:08:15 PM	66282
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/24/2022 12:08:15 PM	66282
2,4-Dimethylphenol	4.0	0.97	5.0	J	µg/L	1	3/24/2022 12:08:15 PM	66282
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/24/2022 12:08:15 PM	66282
2-Methylphenol	3.7	0.51	5.0	J	µg/L	1	3/24/2022 12:08:15 PM	66282
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/24/2022 12:08:15 PM	66282
Naphthalene	24	2.2	5.0		µg/L	1	3/24/2022 12:08:15 PM	66282
Phenol	26	0.33	5.0		µg/L	1	3/24/2022 12:08:15 PM	66282
Pyridine	ND	10	10		µg/L	1	3/24/2022 12:08:15 PM	66282
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/24/2022 12:08:15 PM	66282
Surr: 2-Fluorophenol	41.0	0	29.4-87.7		%Rec	1	3/24/2022 12:08:15 PM	66282
Surr: Phenol-d5	33.0	0	28.5-64.7		%Rec	1	3/24/2022 12:08:15 PM	66282
Surr: 2,4,6-Tribromophenol	47.9	0	18.6-129		%Rec	1	3/24/2022 12:08:15 PM	66282
Surr: Nitrobenzene-d5	50.7	0	36.9-103		%Rec	1	3/24/2022 12:08:15 PM	66282
Surr: 2-Fluorobiphenyl	51.1	0	38.1-99.9		%Rec	1	3/24/2022 12:08:15 PM	66282
Surr: 4-Terphenyl-d14	71.4	0	48-155		%Rec	1	3/24/2022 12:08:15 PM	66282
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	14	0.048	1.0		µg/L	1	3/23/2022 2:32:00 PM	R86694
1-Methylnaphthalene	14	0.024	0.10		µg/L	1	3/23/2022 2:32:00 PM	R86694
2-Methylnaphthalene	9.6	0.034	0.10		µg/L	1	3/23/2022 2:32:00 PM	R86694
Acenaphthene	0.40	0.031	0.10		µg/L	1	3/23/2022 2:32:00 PM	R86694
Fluorene	0.56	0.031	0.10		µg/L	1	3/23/2022 2:32:00 PM	R86694
Phenanthrene	0.18	0.057	0.10		µg/L	1	3/23/2022 2:32:00 PM	R86694
Anthracene	ND	0.034	0.10		µg/L	1	3/23/2022 2:32:00 PM	R86694
Fluoranthene	ND	0.10	0.20		µg/L	1	3/23/2022 2:32:00 PM	R86694
Pyrene	ND	0.16	0.20		µg/L	1	3/23/2022 2:32:00 PM	R86694
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/23/2022 2:32:00 PM	R86694
Chrysene	ND	0.024	0.10		µg/L	1	3/23/2022 2:32:00 PM	R86694
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/23/2022 2:32:00 PM	R86694
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/23/2022 2:32:00 PM	R86694

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203989**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-01R
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/17/2022 8:46:00 AM
Lab ID: 2203989-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	61.8	0	31.6-100		%Rec	1	3/23/2022 2:32:00 PM	R86694
Surr: 2-Fluorobiphenyl	57.1	0	26.7-90.1		%Rec	1	3/23/2022 2:32:00 PM	R86694
Surr: 4-Terphenyl-d14	81.6	0	72.3-147		%Rec	1	3/23/2022 2:32:00 PM	R86694

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203989**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-01R
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/17/2022 8:46:00 AM
Lab ID: 2203989-002D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	5.1	0.016	0.030	*	mg/L	10	4/6/2022 1:21:06 PM	66643
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 1:07:42 PM	66643
Cadmium	ND	0.0015	0.0020		mg/L	1	4/6/2022 1:07:42 PM	66643
Chromium	ND	0.0021	0.0060		mg/L	1	4/6/2022 1:07:42 PM	66643
Cobalt	0.0053	0.0024	0.0060	J	mg/L	1	4/6/2022 1:07:42 PM	66643
Nickel	0.024	0.0033	0.010		mg/L	1	4/6/2022 1:07:42 PM	66643
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 1:07:42 PM	66643
Vanadium	0.0054	0.0024	0.050	J	mg/L	1	4/6/2022 1:07:42 PM	66643
Zinc	0.011	0.0064	0.010		mg/L	1	4/6/2022 1:07:42 PM	66643
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/23/2022 11:56:17 AM	66341
Arsenic	0.0054	0.00013	0.0010		mg/L	1	3/23/2022 11:56:17 AM	66341
Lead	0.0021	0.000061	0.00050		mg/L	1	3/23/2022 11:56:17 AM	66341
Selenium	0.00075	0.00037	0.0010	J	mg/L	1	3/23/2022 11:56:17 AM	66341
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/24/2022 1:17:54 PM	66371

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203989**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-01R
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/17/2022 8:46:00 AM
Lab ID: 2203989-002E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	5.6	0.011	0.020	*	mg/L	10	4/19/2022 12:08:37 PM	A87332
Beryllium	ND	0.00088	0.0020		mg/L	1	3/18/2022 11:23:23 AM	A86575
Cadmium	ND	0.00098	0.0020		mg/L	1	3/18/2022 11:23:23 AM	A86575
Chromium	ND	0.0020	0.0060		mg/L	1	3/18/2022 11:23:23 AM	A86575
Cobalt	0.0030	0.0024	0.0060	J	mg/L	1	3/18/2022 11:23:23 AM	A86575
Nickel	0.027	0.0033	0.010		mg/L	1	3/18/2022 11:23:23 AM	A86575
Silver	ND	0.0013	0.0050		mg/L	1	3/18/2022 11:23:23 AM	A86575
Vanadium	ND	0.0017	0.050		mg/L	1	3/18/2022 11:23:23 AM	A86575
Zinc	0.0077	0.0032	0.010	J	mg/L	1	3/18/2022 11:23:23 AM	A86575
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/21/2022 6:10:20 PM	B86624
Arsenic	0.0047	0.00012	0.0010		mg/L	1	3/21/2022 6:10:20 PM	B86624
Lead	ND	0.000057	0.00050		mg/L	1	3/21/2022 6:10:20 PM	B86624
Selenium	0.00038	0.00034	0.0010	J	mg/L	1	3/21/2022 6:10:20 PM	B86624
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/24/2022 1:20:03 PM	66371

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203989**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/17/2022 9:05:00 AM
Lab ID: 2203989-003A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	1.3	0.23	1.0		µg/L	1	3/22/2022 1:42:39 AM	R86626
Toluene	ND	0.20	1.0		µg/L	1	3/22/2022 1:42:39 AM	R86626
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/22/2022 1:42:39 AM	R86626
Methyl tert-butyl ether (MTBE)	17	0.39	1.0		µg/L	1	3/22/2022 1:42:39 AM	R86626
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/22/2022 1:42:39 AM	R86626
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/22/2022 1:42:39 AM	R86626
1,2-Dichloroethane (EDC)	0.54	0.25	1.0	J	µg/L	1	3/22/2022 1:42:39 AM	R86626
Acetone	ND	2.5	10		µg/L	1	3/22/2022 1:42:39 AM	R86626
Bromomethane	ND	0.85	3.0		µg/L	1	3/22/2022 1:42:39 AM	R86626
2-Butanone	ND	2.0	10		µg/L	1	3/22/2022 1:42:39 AM	R86626
Carbon disulfide	ND	0.59	10		µg/L	1	3/22/2022 1:42:39 AM	R86626
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/22/2022 1:42:39 AM	R86626
Chloroform	ND	0.13	1.0		µg/L	1	3/22/2022 1:42:39 AM	R86626
Chloromethane	0.72	0.41	3.0	J	µg/L	1	3/22/2022 1:42:39 AM	R86626
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/22/2022 1:42:39 AM	R86626
1,1-Dichloroethane	0.86	0.27	1.0	J	µg/L	1	3/22/2022 1:42:39 AM	R86626
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/22/2022 1:42:39 AM	R86626
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/22/2022 1:42:39 AM	R86626
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/22/2022 1:42:39 AM	R86626
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/22/2022 1:42:39 AM	R86626
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/22/2022 1:42:39 AM	R86626
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/22/2022 1:42:39 AM	R86626
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/22/2022 1:42:39 AM	R86626
Styrene	ND	0.14	1.0		µg/L	1	3/22/2022 1:42:39 AM	R86626
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/22/2022 1:42:39 AM	R86626
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/22/2022 1:42:39 AM	R86626
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/22/2022 1:42:39 AM	R86626
Vinyl chloride	0.46	0.32	1.0	J	µg/L	1	3/22/2022 1:42:39 AM	R86626
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/22/2022 1:42:39 AM	R86626
Surr: 1,2-Dichloroethane-d4	94.6	0	70-130		%Rec	1	3/22/2022 1:42:39 AM	R86626
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	3/22/2022 1:42:39 AM	R86626
Surr: Dibromofluoromethane	93.8	0	70-130		%Rec	1	3/22/2022 1:42:39 AM	R86626
Surr: Toluene-d8	101	0	70-130		%Rec	1	3/22/2022 1:42:39 AM	R86626
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.054	0.012	0.050		mg/L	1	3/22/2022 1:42:39 AM	G86626
Surr: 4-Bromofluorobenzene	105	0	70-130		%Rec	1	3/22/2022 1:42:39 AM	G86626

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203989**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/17/2022 9:05:00 AM
Lab ID: 2203989-003B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	3/21/2022 9:07:52 PM	66262

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203989**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/17/2022 9:05:00 AM
Lab ID: 2203989-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.36	0.016	0.064		mg/L	1	3/22/2022 8:11:22 PM	66267
Motor Oil Range Organics (MRO)	0.16	0.052	0.080		mg/L	1	3/22/2022 8:11:22 PM	66267
Surr: DNOP	101	0	42.2-138		%Rec	1	3/22/2022 8:11:22 PM	66267
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	1.1	20		µg/L	1	3/24/2022 12:50:02 PM	66282
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/24/2022 12:50:02 PM	66282
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/24/2022 12:50:02 PM	66282
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/24/2022 12:50:02 PM	66282
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/24/2022 12:50:02 PM	66282
Diethyl phthalate	ND	3.9	10		µg/L	1	3/24/2022 12:50:02 PM	66282
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/24/2022 12:50:02 PM	66282
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/24/2022 12:50:02 PM	66282
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/24/2022 12:50:02 PM	66282
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/24/2022 12:50:02 PM	66282
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/24/2022 12:50:02 PM	66282
Phenol	ND	0.33	5.0		µg/L	1	3/24/2022 12:50:02 PM	66282
Pyridine	ND	10	10		µg/L	1	3/24/2022 12:50:02 PM	66282
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/24/2022 12:50:02 PM	66282
Surr: 2-Fluorophenol	5.18	0	29.4-87.7	S	%Rec	1	3/24/2022 12:50:02 PM	66282
Surr: Phenol-d5	10.6	0	28.5-64.7	S	%Rec	1	3/24/2022 12:50:02 PM	66282
Surr: 2,4,6-Tribromophenol	2.12	0	18.6-129	S	%Rec	1	3/24/2022 12:50:02 PM	66282
Surr: Nitrobenzene-d5	48.5	0	36.9-103		%Rec	1	3/24/2022 12:50:02 PM	66282
Surr: 2-Fluorobiphenyl	48.5	0	38.1-99.9		%Rec	1	3/24/2022 12:50:02 PM	66282
Surr: 4-Terphenyl-d14	70.0	0	48-155		%Rec	1	3/24/2022 12:50:02 PM	66282
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	3.3	0.048	1.0		µg/L	1	3/23/2022 3:16:00 PM	R86694
Naphthalene	ND	0.034	0.10		µg/L	1	3/23/2022 3:16:00 PM	R86694
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/23/2022 3:16:00 PM	R86694
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/23/2022 3:16:00 PM	R86694
Acenaphthene	ND	0.031	0.10		µg/L	1	3/23/2022 3:16:00 PM	R86694
Fluorene	ND	0.031	0.10		µg/L	1	3/23/2022 3:16:00 PM	R86694
Phenanthrene	ND	0.057	0.10		µg/L	1	3/23/2022 3:16:00 PM	R86694
Anthracene	ND	0.034	0.10		µg/L	1	3/23/2022 3:16:00 PM	R86694
Fluoranthene	ND	0.10	0.20		µg/L	1	3/23/2022 3:16:00 PM	R86694
Pyrene	ND	0.16	0.20		µg/L	1	3/23/2022 3:16:00 PM	R86694
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/23/2022 3:16:00 PM	R86694
Chrysene	ND	0.024	0.10		µg/L	1	3/23/2022 3:16:00 PM	R86694
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/23/2022 3:16:00 PM	R86694
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/23/2022 3:16:00 PM	R86694

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203989**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/17/2022 9:05:00 AM
Lab ID: 2203989-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	62.8	0	31.6-100		%Rec	1	3/23/2022 3:16:00 PM	R86694
Surr: 2-Fluorobiphenyl	60.8	0	26.7-90.1		%Rec	1	3/23/2022 3:16:00 PM	R86694
Surr: 4-Terphenyl-d14	82.5	0	72.3-147		%Rec	1	3/23/2022 3:16:00 PM	R86694

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203989**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/17/2022 9:05:00 AM
Lab ID: 2203989-003D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.073	0.0082	0.015		mg/L	5	4/6/2022 1:26:45 PM	66643
Beryllium	ND	0.0044	0.010		mg/L	5	4/6/2022 1:26:45 PM	66643
Cadmium	ND	0.0074	0.010		mg/L	5	4/6/2022 1:26:45 PM	66643
Chromium	ND	0.011	0.030		mg/L	5	4/6/2022 1:26:45 PM	66643
Cobalt	0.015	0.012	0.030	J	mg/L	5	4/6/2022 1:26:45 PM	66643
Nickel	0.021	0.016	0.050	J	mg/L	5	4/6/2022 1:26:45 PM	66643
Silver	ND	0.0063	0.025		mg/L	5	4/6/2022 1:26:45 PM	66643
Vanadium	ND	0.012	0.25		mg/L	5	4/6/2022 1:26:45 PM	66643
Zinc	ND	0.032	0.050		mg/L	5	4/6/2022 1:26:45 PM	66643
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	3/23/2022 12:08:30 PM	66341
Arsenic	0.0015	0.00063	0.0050	J	mg/L	5	3/23/2022 12:08:30 PM	66341
Lead	0.00093	0.00031	0.0025	J	mg/L	5	3/23/2022 12:08:30 PM	66341
Selenium	0.0062	0.0019	0.0050		mg/L	5	3/23/2022 12:08:30 PM	66341
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/24/2022 1:22:12 PM	66371

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203989**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/17/2022 9:05:00 AM
Lab ID: 2203989-003E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.068	0.0056	0.010		mg/L	5	3/18/2022 11:27:53 AM	A86575
Beryllium	ND	0.0044	0.010		mg/L	5	3/18/2022 11:27:53 AM	A86575
Cadmium	ND	0.0049	0.010		mg/L	5	3/18/2022 11:27:53 AM	A86575
Chromium	ND	0.0098	0.030		mg/L	5	3/18/2022 11:27:53 AM	A86575
Cobalt	ND	0.012	0.030		mg/L	5	3/18/2022 11:27:53 AM	A86575
Nickel	0.033	0.016	0.050	J	mg/L	5	3/18/2022 11:27:53 AM	A86575
Silver	ND	0.0063	0.025		mg/L	5	3/18/2022 11:27:53 AM	A86575
Vanadium	ND	0.0086	0.25		mg/L	5	3/18/2022 11:27:53 AM	A86575
Zinc	ND	0.016	0.050		mg/L	5	3/18/2022 11:27:53 AM	A86575
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	3/22/2022 11:58:10 AM	A86633
Arsenic	0.0011	0.00061	0.0050	J	mg/L	5	3/22/2022 11:58:10 AM	A86633
Lead	ND	0.00028	0.0025		mg/L	5	3/22/2022 11:58:10 AM	A86633
Selenium	0.0047	0.0017	0.0050	J	mg/L	5	3/22/2022 11:58:10 AM	A86633
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/24/2022 1:24:22 PM	66371

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203989**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-28
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/17/2022 9:35:00 AM
Lab ID: 2203989-004A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	0.30	0.23	1.0	J	µg/L	1	3/22/2022 2:11:04 AM	R86626
Toluene	ND	0.20	1.0		µg/L	1	3/22/2022 2:11:04 AM	R86626
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/22/2022 2:11:04 AM	R86626
Methyl tert-butyl ether (MTBE)	0.53	0.39	1.0	J	µg/L	1	3/22/2022 2:11:04 AM	R86626
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/22/2022 2:11:04 AM	R86626
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/22/2022 2:11:04 AM	R86626
1,2-Dichloroethane (EDC)	0.42	0.25	1.0	J	µg/L	1	3/22/2022 2:11:04 AM	R86626
Acetone	ND	2.5	10		µg/L	1	3/22/2022 2:11:04 AM	R86626
Bromomethane	ND	0.85	3.0		µg/L	1	3/22/2022 2:11:04 AM	R86626
2-Butanone	ND	2.0	10		µg/L	1	3/22/2022 2:11:04 AM	R86626
Carbon disulfide	ND	0.59	10		µg/L	1	3/22/2022 2:11:04 AM	R86626
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/22/2022 2:11:04 AM	R86626
Chloroform	ND	0.13	1.0		µg/L	1	3/22/2022 2:11:04 AM	R86626
Chloromethane	0.70	0.41	3.0	J	µg/L	1	3/22/2022 2:11:04 AM	R86626
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/22/2022 2:11:04 AM	R86626
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/22/2022 2:11:04 AM	R86626
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/22/2022 2:11:04 AM	R86626
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/22/2022 2:11:04 AM	R86626
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/22/2022 2:11:04 AM	R86626
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/22/2022 2:11:04 AM	R86626
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/22/2022 2:11:04 AM	R86626
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/22/2022 2:11:04 AM	R86626
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/22/2022 2:11:04 AM	R86626
Styrene	ND	0.14	1.0		µg/L	1	3/22/2022 2:11:04 AM	R86626
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/22/2022 2:11:04 AM	R86626
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/22/2022 2:11:04 AM	R86626
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/22/2022 2:11:04 AM	R86626
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/22/2022 2:11:04 AM	R86626
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/22/2022 2:11:04 AM	R86626
Surr: 1,2-Dichloroethane-d4	93.8	0	70-130		%Rec	1	3/22/2022 2:11:04 AM	R86626
Surr: 4-Bromofluorobenzene	98.3	0	70-130		%Rec	1	3/22/2022 2:11:04 AM	R86626
Surr: Dibromofluoromethane	98.6	0	70-130		%Rec	1	3/22/2022 2:11:04 AM	R86626
Surr: Toluene-d8	102	0	70-130		%Rec	1	3/22/2022 2:11:04 AM	R86626
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.039	0.012	0.050	J	mg/L	1	3/22/2022 2:11:04 AM	G86626
Surr: 4-Bromofluorobenzene	105	0	70-130		%Rec	1	3/22/2022 2:11:04 AM	G86626

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203989**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-28
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/17/2022 9:35:00 AM
Lab ID: 2203989-004B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	3/21/2022 9:22:55 PM	66262

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203989**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-28
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/17/2022 9:35:00 AM
Lab ID: 2203989-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.17	0.016	0.064		mg/L	1	3/22/2022 8:34:59 PM	66267
Motor Oil Range Organics (MRO)	0.056	0.052	0.080	J	mg/L	1	3/22/2022 8:34:59 PM	66267
Surr: DNOP	88.6	0	42.2-138		%Rec	1	3/22/2022 8:34:59 PM	66267
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	1.1	20		µg/L	1	3/24/2022 1:31:59 PM	66282
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/24/2022 1:31:59 PM	66282
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/24/2022 1:31:59 PM	66282
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/24/2022 1:31:59 PM	66282
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/24/2022 1:31:59 PM	66282
Diethyl phthalate	ND	3.9	10		µg/L	1	3/24/2022 1:31:59 PM	66282
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/24/2022 1:31:59 PM	66282
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/24/2022 1:31:59 PM	66282
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/24/2022 1:31:59 PM	66282
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/24/2022 1:31:59 PM	66282
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/24/2022 1:31:59 PM	66282
Phenol	ND	0.33	5.0		µg/L	1	3/24/2022 1:31:59 PM	66282
Pyridine	ND	10	10		µg/L	1	3/24/2022 1:31:59 PM	66282
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/24/2022 1:31:59 PM	66282
Surr: 2-Fluorophenol	42.8	0	29.4-87.7		%Rec	1	3/24/2022 1:31:59 PM	66282
Surr: Phenol-d5	32.9	0	28.5-64.7		%Rec	1	3/24/2022 1:31:59 PM	66282
Surr: 2,4,6-Tribromophenol	54.4	0	18.6-129		%Rec	1	3/24/2022 1:31:59 PM	66282
Surr: Nitrobenzene-d5	54.2	0	36.9-103		%Rec	1	3/24/2022 1:31:59 PM	66282
Surr: 2-Fluorobiphenyl	53.3	0	38.1-99.9		%Rec	1	3/24/2022 1:31:59 PM	66282
Surr: 4-Terphenyl-d14	69.7	0	48-155		%Rec	1	3/24/2022 1:31:59 PM	66282
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.048	1.0		µg/L	1	3/23/2022 4:01:00 PM	R86694
Naphthalene	ND	0.034	0.10		µg/L	1	3/23/2022 4:01:00 PM	R86694
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/23/2022 4:01:00 PM	R86694
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/23/2022 4:01:00 PM	R86694
Acenaphthene	ND	0.031	0.10		µg/L	1	3/23/2022 4:01:00 PM	R86694
Fluorene	ND	0.031	0.10		µg/L	1	3/23/2022 4:01:00 PM	R86694
Phenanthrene	ND	0.057	0.10		µg/L	1	3/23/2022 4:01:00 PM	R86694
Anthracene	ND	0.034	0.10		µg/L	1	3/23/2022 4:01:00 PM	R86694
Fluoranthene	ND	0.10	0.20		µg/L	1	3/23/2022 4:01:00 PM	R86694
Pyrene	ND	0.16	0.20		µg/L	1	3/23/2022 4:01:00 PM	R86694
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/23/2022 4:01:00 PM	R86694
Chrysene	ND	0.024	0.10		µg/L	1	3/23/2022 4:01:00 PM	R86694
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/23/2022 4:01:00 PM	R86694
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/23/2022 4:01:00 PM	R86694

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Estimated value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference

Analytical Report
Lab Order: **2203989**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-28
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/17/2022 9:35:00 AM
Lab ID: 2203989-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	66.4	0	31.6-100		%Rec	1	3/23/2022 4:01:00 PM	R86694
Surr: 2-Fluorobiphenyl	65.2	0	26.7-90.1		%Rec	1	3/23/2022 4:01:00 PM	R86694
Surr: 4-Terphenyl-d14	82.6	0	72.3-147		%Rec	1	3/23/2022 4:01:00 PM	R86694

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203989**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-28
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/17/2022 9:35:00 AM
Lab ID: 2203989-004D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.17	0.0016	0.0030		mg/L	1	4/6/2022 1:37:22 PM	66643
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 1:37:22 PM	66643
Cadmium	ND	0.0015	0.0020		mg/L	1	4/6/2022 1:37:22 PM	66643
Chromium	ND	0.0021	0.0060		mg/L	1	4/6/2022 1:37:22 PM	66643
Cobalt	0.0057	0.0024	0.0060	J	mg/L	1	4/6/2022 1:37:22 PM	66643
Nickel	0.0067	0.0033	0.010	J	mg/L	1	4/6/2022 1:37:22 PM	66643
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 1:37:22 PM	66643
Vanadium	0.012	0.0024	0.050	J	mg/L	1	4/6/2022 1:37:22 PM	66643
Zinc	0.016	0.0064	0.010		mg/L	1	4/6/2022 1:37:22 PM	66643
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/23/2022 12:10:57 PM	66341
Arsenic	0.0025	0.00013	0.0010		mg/L	1	3/23/2022 12:10:57 PM	66341
Lead	0.0046	0.000061	0.00050		mg/L	1	3/23/2022 3:53:04 PM	66341
Selenium	0.0020	0.00037	0.0010		mg/L	1	3/23/2022 12:10:57 PM	66341
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/24/2022 1:26:32 PM	66371

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203989**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-28
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/17/2022 9:35:00 AM
Lab ID: 2203989-004E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.12	0.0011	0.0020		mg/L	1	3/18/2022 11:31:11 AM	A86575
Beryllium	ND	0.00088	0.0020		mg/L	1	3/18/2022 11:31:11 AM	A86575
Cadmium	ND	0.00098	0.0020		mg/L	1	3/18/2022 11:31:11 AM	A86575
Chromium	ND	0.0020	0.0060		mg/L	1	3/18/2022 11:31:11 AM	A86575
Cobalt	ND	0.0024	0.0060		mg/L	1	3/18/2022 11:31:11 AM	A86575
Nickel	0.0079	0.0033	0.010	J	mg/L	1	3/18/2022 11:31:11 AM	A86575
Silver	ND	0.0013	0.0050		mg/L	1	3/18/2022 11:31:11 AM	A86575
Vanadium	0.0027	0.0017	0.050	J	mg/L	1	3/18/2022 11:31:11 AM	A86575
Zinc	0.0059	0.0032	0.010	J	mg/L	1	3/18/2022 11:31:11 AM	A86575
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/21/2022 6:39:55 PM	B86624
Arsenic	0.00090	0.00012	0.0010	J	mg/L	1	3/21/2022 6:39:55 PM	B86624
Lead	ND	0.000057	0.00050		mg/L	1	3/21/2022 6:39:55 PM	B86624
Selenium	0.00068	0.00034	0.0010	J	mg/L	1	3/21/2022 6:39:55 PM	B86624
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/24/2022 1:28:41 PM	66371

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203989**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-29
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/17/2022 10:00:00 AM
Lab ID: 2203989-005A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	3/22/2022 2:39:30 AM	R86626
Toluene	ND	0.20	1.0		µg/L	1	3/22/2022 2:39:30 AM	R86626
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/22/2022 2:39:30 AM	R86626
Methyl tert-butyl ether (MTBE)	20	0.39	1.0		µg/L	1	3/22/2022 2:39:30 AM	R86626
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/22/2022 2:39:30 AM	R86626
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/22/2022 2:39:30 AM	R86626
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	3/22/2022 2:39:30 AM	R86626
Acetone	ND	2.5	10		µg/L	1	3/22/2022 2:39:30 AM	R86626
Bromomethane	ND	0.85	3.0		µg/L	1	3/22/2022 2:39:30 AM	R86626
2-Butanone	ND	2.0	10		µg/L	1	3/22/2022 2:39:30 AM	R86626
Carbon disulfide	ND	0.59	10		µg/L	1	3/22/2022 2:39:30 AM	R86626
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/22/2022 2:39:30 AM	R86626
Chloroform	ND	0.13	1.0		µg/L	1	3/22/2022 2:39:30 AM	R86626
Chloromethane	0.91	0.41	3.0	J	µg/L	1	3/22/2022 2:39:30 AM	R86626
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/22/2022 2:39:30 AM	R86626
1,1-Dichloroethane	0.63	0.27	1.0	J	µg/L	1	3/22/2022 2:39:30 AM	R86626
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/22/2022 2:39:30 AM	R86626
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/22/2022 2:39:30 AM	R86626
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/22/2022 2:39:30 AM	R86626
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/22/2022 2:39:30 AM	R86626
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/22/2022 2:39:30 AM	R86626
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/22/2022 2:39:30 AM	R86626
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/22/2022 2:39:30 AM	R86626
Styrene	ND	0.14	1.0		µg/L	1	3/22/2022 2:39:30 AM	R86626
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/22/2022 2:39:30 AM	R86626
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/22/2022 2:39:30 AM	R86626
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/22/2022 2:39:30 AM	R86626
Vinyl chloride	0.44	0.32	1.0	J	µg/L	1	3/22/2022 2:39:30 AM	R86626
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/22/2022 2:39:30 AM	R86626
Surr: 1,2-Dichloroethane-d4	93.3	0	70-130		%Rec	1	3/22/2022 2:39:30 AM	R86626
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	3/22/2022 2:39:30 AM	R86626
Surr: Dibromofluoromethane	94.2	0	70-130		%Rec	1	3/22/2022 2:39:30 AM	R86626
Surr: Toluene-d8	101	0	70-130		%Rec	1	3/22/2022 2:39:30 AM	R86626
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.058	0.012	0.050		mg/L	1	3/22/2022 2:39:30 AM	G86626
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	3/22/2022 2:39:30 AM	G86626

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203989**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-29
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/17/2022 10:00:00 AM
Lab ID: 2203989-005B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	3/21/2022 9:38:02 PM	66262

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203989**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-29
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/17/2022 10:00:00 AM
Lab ID: 2203989-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.38	0.016	0.064		mg/L	1	3/22/2022 8:58:35 PM	66267
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/22/2022 8:58:35 PM	66267
Surr: DNOP	110	0	42.2-138		%Rec	1	3/22/2022 8:58:35 PM	66267
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	1.1	20		µg/L	1	3/24/2022 2:13:14 PM	66282
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/24/2022 2:13:14 PM	66282
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/24/2022 2:13:14 PM	66282
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/24/2022 2:13:14 PM	66282
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/24/2022 2:13:14 PM	66282
Diethyl phthalate	ND	3.9	10		µg/L	1	3/24/2022 2:13:14 PM	66282
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/24/2022 2:13:14 PM	66282
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/24/2022 2:13:14 PM	66282
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/24/2022 2:13:14 PM	66282
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/24/2022 2:13:14 PM	66282
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/24/2022 2:13:14 PM	66282
Phenol	ND	0.33	5.0		µg/L	1	3/24/2022 2:13:14 PM	66282
Pyridine	ND	10	10		µg/L	1	3/24/2022 2:13:14 PM	66282
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/24/2022 2:13:14 PM	66282
Surr: 2-Fluorophenol	5.56	0	29.4-87.7	S	%Rec	1	3/24/2022 2:13:14 PM	66282
Surr: Phenol-d5	18.0	0	28.5-64.7	S	%Rec	1	3/24/2022 2:13:14 PM	66282
Surr: 2,4,6-Tribromophenol	1.77	0	18.6-129	S	%Rec	1	3/24/2022 2:13:14 PM	66282
Surr: Nitrobenzene-d5	52.9	0	36.9-103		%Rec	1	3/24/2022 2:13:14 PM	66282
Surr: 2-Fluorobiphenyl	51.0	0	38.1-99.9		%Rec	1	3/24/2022 2:13:14 PM	66282
Surr: 4-Terphenyl-d14	71.8	0	48-155		%Rec	1	3/24/2022 2:13:14 PM	66282
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	3.6	0.048	1.0		µg/L	1	3/23/2022 4:46:00 PM	R86694
Naphthalene	ND	0.034	0.10		µg/L	1	3/23/2022 4:46:00 PM	R86694
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/23/2022 4:46:00 PM	R86694
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/23/2022 4:46:00 PM	R86694
Acenaphthene	ND	0.031	0.10		µg/L	1	3/23/2022 4:46:00 PM	R86694
Fluorene	ND	0.031	0.10		µg/L	1	3/23/2022 4:46:00 PM	R86694
Phenanthrene	ND	0.057	0.10		µg/L	1	3/23/2022 4:46:00 PM	R86694
Anthracene	ND	0.034	0.10		µg/L	1	3/23/2022 4:46:00 PM	R86694
Fluoranthene	ND	0.10	0.20		µg/L	1	3/23/2022 4:46:00 PM	R86694
Pyrene	ND	0.16	0.20		µg/L	1	3/23/2022 4:46:00 PM	R86694
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/23/2022 4:46:00 PM	R86694
Chrysene	ND	0.024	0.10		µg/L	1	3/23/2022 4:46:00 PM	R86694
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/23/2022 4:46:00 PM	R86694
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/23/2022 4:46:00 PM	R86694

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203989**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-29
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/17/2022 10:00:00 AM
Lab ID: 2203989-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	68.5	0	31.6-100		%Rec	1	3/23/2022 4:46:00 PM	R86694
Surr: 2-Fluorobiphenyl	63.2	0	26.7-90.1		%Rec	1	3/23/2022 4:46:00 PM	R86694
Surr: 4-Terphenyl-d14	85.2	0	72.3-147		%Rec	1	3/23/2022 4:46:00 PM	R86694

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203989**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-29
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/17/2022 10:00:00 AM
Lab ID: 2203989-005D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.21	0.0016	0.0030		mg/L	1	4/6/2022 1:40:06 PM	66643
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 1:40:06 PM	66643
Cadmium	ND	0.0015	0.0020		mg/L	1	4/6/2022 1:40:06 PM	66643
Chromium	ND	0.0021	0.0060		mg/L	1	4/6/2022 1:40:06 PM	66643
Cobalt	0.0059	0.0024	0.0060	J	mg/L	1	4/6/2022 1:40:06 PM	66643
Nickel	0.018	0.0033	0.010		mg/L	1	4/6/2022 1:40:06 PM	66643
Silver	0.0019	0.0013	0.0050	J	mg/L	1	4/6/2022 1:40:06 PM	66643
Vanadium	0.0044	0.0024	0.050	J	mg/L	1	4/6/2022 1:40:06 PM	66643
Zinc	ND	0.0064	0.010		mg/L	1	4/6/2022 1:40:06 PM	66643
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/23/2022 12:15:49 PM	66341
Arsenic	0.0011	0.00013	0.0010		mg/L	1	3/23/2022 12:15:49 PM	66341
Lead	ND	0.00031	0.0025		mg/L	5	3/23/2022 12:18:16 PM	66341
Selenium	0.00069	0.00037	0.0010	J	mg/L	1	3/23/2022 12:15:49 PM	66341
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00045	0.0010		mg/L	5	3/24/2022 3:27:12 PM	66371

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203989**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-29
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/17/2022 10:00:00 AM
Lab ID: 2203989-005E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.22	0.0011	0.0020		mg/L	1	3/18/2022 11:40:48 AM	A86575
Beryllium	ND	0.00088	0.0020		mg/L	1	3/18/2022 11:40:48 AM	A86575
Cadmium	ND	0.00098	0.0020		mg/L	1	3/18/2022 11:40:48 AM	A86575
Chromium	ND	0.0020	0.0060		mg/L	1	3/18/2022 11:40:48 AM	A86575
Cobalt	0.0053	0.0024	0.0060	J	mg/L	1	3/18/2022 11:40:48 AM	A86575
Nickel	0.020	0.0033	0.010		mg/L	1	3/18/2022 11:40:48 AM	A86575
Silver	0.0017	0.0013	0.0050	J	mg/L	1	3/18/2022 11:40:48 AM	A86575
Vanadium	0.0034	0.0017	0.050	J	mg/L	1	3/18/2022 11:40:48 AM	A86575
Zinc	0.0061	0.0032	0.010	J	mg/L	1	3/18/2022 11:40:48 AM	A86575
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/21/2022 6:42:36 PM	B86624
Arsenic	0.00073	0.00061	0.0050	J	mg/L	5	3/22/2022 12:08:55 PM	A86633
Lead	ND	0.00028	0.0025		mg/L	5	3/22/2022 12:08:55 PM	A86633
Selenium	ND	0.0017	0.0050		mg/L	5	3/22/2022 12:08:55 PM	A86633
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/24/2022 2:37:54 PM	66371

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203989**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-30
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/17/2022 10:15:00 AM
Lab ID: 2203989-006A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	3/22/2022 3:07:53 AM	R86626
Toluene	ND	0.20	1.0		µg/L	1	3/22/2022 3:07:53 AM	R86626
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/22/2022 3:07:53 AM	R86626
Methyl tert-butyl ether (MTBE)	3.9	0.39	1.0		µg/L	1	3/22/2022 3:07:53 AM	R86626
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/22/2022 3:07:53 AM	R86626
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/22/2022 3:07:53 AM	R86626
1,2-Dichloroethane (EDC)	1.2	0.25	1.0		µg/L	1	3/22/2022 3:07:53 AM	R86626
Acetone	ND	2.5	10		µg/L	1	3/22/2022 3:07:53 AM	R86626
Bromomethane	ND	0.85	3.0		µg/L	1	3/22/2022 3:07:53 AM	R86626
2-Butanone	ND	2.0	10		µg/L	1	3/22/2022 3:07:53 AM	R86626
Carbon disulfide	ND	0.59	10		µg/L	1	3/22/2022 3:07:53 AM	R86626
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/22/2022 3:07:53 AM	R86626
Chloroform	ND	0.13	1.0		µg/L	1	3/22/2022 3:07:53 AM	R86626
Chloromethane	0.65	0.41	3.0	J	µg/L	1	3/22/2022 3:07:53 AM	R86626
cis-1,2-DCE	1.9	0.39	1.0		µg/L	1	3/22/2022 3:07:53 AM	R86626
1,1-Dichloroethane	25	0.27	1.0		µg/L	1	3/22/2022 3:07:53 AM	R86626
1,1-Dichloroethene	1.3	0.20	1.0		µg/L	1	3/22/2022 3:07:53 AM	R86626
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/22/2022 3:07:53 AM	R86626
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/22/2022 3:07:53 AM	R86626
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/22/2022 3:07:53 AM	R86626
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/22/2022 3:07:53 AM	R86626
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/22/2022 3:07:53 AM	R86626
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/22/2022 3:07:53 AM	R86626
Styrene	ND	0.14	1.0		µg/L	1	3/22/2022 3:07:53 AM	R86626
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/22/2022 3:07:53 AM	R86626
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/22/2022 3:07:53 AM	R86626
Trichloroethene (TCE)	1.1	0.20	1.0		µg/L	1	3/22/2022 3:07:53 AM	R86626
Vinyl chloride	0.46	0.32	1.0	J	µg/L	1	3/22/2022 3:07:53 AM	R86626
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/22/2022 3:07:53 AM	R86626
Surr: 1,2-Dichloroethane-d4	99.4	0	70-130		%Rec	1	3/22/2022 3:07:53 AM	R86626
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	3/22/2022 3:07:53 AM	R86626
Surr: Dibromofluoromethane	99.1	0	70-130		%Rec	1	3/22/2022 3:07:53 AM	R86626
Surr: Toluene-d8	97.0	0	70-130		%Rec	1	3/22/2022 3:07:53 AM	R86626
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.066	0.012	0.050		mg/L	1	3/22/2022 3:07:53 AM	G86626
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	3/22/2022 3:07:53 AM	G86626

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203989**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-30
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/17/2022 10:15:00 AM
Lab ID: 2203989-006B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	3/21/2022 9:53:03 PM	66262

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203989**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-30
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/17/2022 10:15:00 AM
Lab ID: 2203989-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.13	0.016	0.064		mg/L	1	3/22/2022 9:22:10 PM	66267
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	3/22/2022 9:22:10 PM	66267
Surr: DNOP	103	0	42.2-138		%Rec	1	3/22/2022 9:22:10 PM	66267
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	1.1	20		µg/L	1	3/24/2022 2:55:06 PM	66282
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/24/2022 2:55:06 PM	66282
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/24/2022 2:55:06 PM	66282
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/24/2022 2:55:06 PM	66282
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/24/2022 2:55:06 PM	66282
Diethyl phthalate	ND	3.9	10		µg/L	1	3/24/2022 2:55:06 PM	66282
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/24/2022 2:55:06 PM	66282
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/24/2022 2:55:06 PM	66282
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/24/2022 2:55:06 PM	66282
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/24/2022 2:55:06 PM	66282
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/24/2022 2:55:06 PM	66282
Phenol	ND	0.33	5.0		µg/L	1	3/24/2022 2:55:06 PM	66282
Pyridine	ND	10	10		µg/L	1	3/24/2022 2:55:06 PM	66282
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/24/2022 2:55:06 PM	66282
Surr: 2-Fluorophenol	44.0	0	29.4-87.7		%Rec	1	3/24/2022 2:55:06 PM	66282
Surr: Phenol-d5	35.3	0	28.5-64.7		%Rec	1	3/24/2022 2:55:06 PM	66282
Surr: 2,4,6-Tribromophenol	67.6	0	18.6-129		%Rec	1	3/24/2022 2:55:06 PM	66282
Surr: Nitrobenzene-d5	54.4	0	36.9-103		%Rec	1	3/24/2022 2:55:06 PM	66282
Surr: 2-Fluorobiphenyl	52.3	0	38.1-99.9		%Rec	1	3/24/2022 2:55:06 PM	66282
Surr: 4-Terphenyl-d14	87.2	0	48-155		%Rec	1	3/24/2022 2:55:06 PM	66282
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	17	0.048	1.0		µg/L	1	3/23/2022 5:31:00 PM	R86694
Naphthalene	ND	0.034	0.10		µg/L	1	3/23/2022 5:31:00 PM	R86694
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/23/2022 5:31:00 PM	R86694
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/23/2022 5:31:00 PM	R86694
Acenaphthene	ND	0.031	0.10		µg/L	1	3/23/2022 5:31:00 PM	R86694
Fluorene	ND	0.031	0.10		µg/L	1	3/23/2022 5:31:00 PM	R86694
Phenanthrene	ND	0.057	0.10		µg/L	1	3/23/2022 5:31:00 PM	R86694
Anthracene	ND	0.034	0.10		µg/L	1	3/23/2022 5:31:00 PM	R86694
Fluoranthene	ND	0.10	0.20		µg/L	1	3/23/2022 5:31:00 PM	R86694
Pyrene	ND	0.16	0.20		µg/L	1	3/23/2022 5:31:00 PM	R86694
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/23/2022 5:31:00 PM	R86694
Chrysene	ND	0.024	0.10		µg/L	1	3/23/2022 5:31:00 PM	R86694
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/23/2022 5:31:00 PM	R86694
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/23/2022 5:31:00 PM	R86694

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203989**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-30
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/17/2022 10:15:00 AM
Lab ID: 2203989-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	59.9	0	31.6-100		%Rec	1	3/23/2022 5:31:00 PM	R86694
Surr: 2-Fluorobiphenyl	57.0	0	26.7-90.1		%Rec	1	3/23/2022 5:31:00 PM	R86694
Surr: 4-Terphenyl-d14	82.9	0	72.3-147		%Rec	1	3/23/2022 5:31:00 PM	R86694

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203989**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-30
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/17/2022 10:15:00 AM
Lab ID: 2203989-006D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.16	0.0016	0.0030		mg/L	1	4/6/2022 1:43:13 PM	66643
Beryllium	ND	0.00088	0.0020		mg/L	1	4/6/2022 1:43:13 PM	66643
Cadmium	ND	0.0015	0.0020		mg/L	1	4/6/2022 1:43:13 PM	66643
Chromium	0.0027	0.0021	0.0060	J	mg/L	1	4/6/2022 1:43:13 PM	66643
Cobalt	0.0041	0.0024	0.0060	J	mg/L	1	4/6/2022 1:43:13 PM	66643
Nickel	0.017	0.0033	0.010		mg/L	1	4/6/2022 1:43:13 PM	66643
Silver	ND	0.0013	0.0050		mg/L	1	4/6/2022 1:43:13 PM	66643
Vanadium	0.014	0.0024	0.050	J	mg/L	1	4/6/2022 1:43:13 PM	66643
Zinc	0.0082	0.0064	0.010	J	mg/L	1	4/6/2022 1:43:13 PM	66643
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/23/2022 12:20:43 PM	66341
Arsenic	0.0014	0.00013	0.0010		mg/L	1	3/23/2022 12:20:43 PM	66341
Lead	0.0037	0.000061	0.00050		mg/L	1	3/23/2022 12:20:43 PM	66341
Selenium	0.0013	0.00037	0.0010		mg/L	1	3/23/2022 12:20:43 PM	66341
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/24/2022 2:40:02 PM	66371

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203989**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-30
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/17/2022 10:15:00 AM
Lab ID: 2203989-006E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.039	0.0011	0.0020		mg/L	1	3/18/2022 11:44:07 AM	A86575
Beryllium	ND	0.00088	0.0020		mg/L	1	3/18/2022 11:44:07 AM	A86575
Cadmium	ND	0.00098	0.0020		mg/L	1	3/18/2022 11:44:07 AM	A86575
Chromium	ND	0.0020	0.0060		mg/L	1	3/18/2022 11:44:07 AM	A86575
Cobalt	ND	0.0024	0.0060		mg/L	1	3/18/2022 11:44:07 AM	A86575
Nickel	0.017	0.0033	0.010		mg/L	1	3/18/2022 11:44:07 AM	A86575
Silver	ND	0.0013	0.0050		mg/L	1	3/18/2022 11:44:07 AM	A86575
Vanadium	0.0031	0.0017	0.050	J	mg/L	1	3/18/2022 11:44:07 AM	A86575
Zinc	0.0082	0.0032	0.010	J	mg/L	1	3/18/2022 11:44:07 AM	A86575
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	3/21/2022 6:45:17 PM	B86624
Arsenic	0.00059	0.00012	0.0010	J	mg/L	1	3/21/2022 6:45:17 PM	B86624
Lead	0.000072	0.000057	0.00050	J	mg/L	1	3/21/2022 6:45:17 PM	B86624
Selenium	ND	0.00034	0.0010		mg/L	1	3/21/2022 6:45:17 PM	B86624
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/24/2022 2:42:11 PM	66371

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203989**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB 3-17-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/17/2022 10:15:00 AM
Lab ID: 2203989-007A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	3/22/2022 3:36:15 AM	R86626
Toluene	ND	0.20	1.0		µg/L	1	3/22/2022 3:36:15 AM	R86626
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/22/2022 3:36:15 AM	R86626
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/22/2022 3:36:15 AM	R86626
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/22/2022 3:36:15 AM	R86626
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/22/2022 3:36:15 AM	R86626
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	3/22/2022 3:36:15 AM	R86626
Acetone	ND	2.5	10		µg/L	1	3/22/2022 3:36:15 AM	R86626
Bromomethane	ND	0.85	3.0		µg/L	1	3/22/2022 3:36:15 AM	R86626
2-Butanone	5.1	2.0	10	J	µg/L	1	3/22/2022 3:36:15 AM	R86626
Carbon disulfide	ND	0.59	10		µg/L	1	3/22/2022 3:36:15 AM	R86626
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/22/2022 3:36:15 AM	R86626
Chloroform	ND	0.13	1.0		µg/L	1	3/22/2022 3:36:15 AM	R86626
Chloromethane	0.71	0.41	3.0	J	µg/L	1	3/22/2022 3:36:15 AM	R86626
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/22/2022 3:36:15 AM	R86626
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/22/2022 3:36:15 AM	R86626
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/22/2022 3:36:15 AM	R86626
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/22/2022 3:36:15 AM	R86626
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/22/2022 3:36:15 AM	R86626
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/22/2022 3:36:15 AM	R86626
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/22/2022 3:36:15 AM	R86626
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/22/2022 3:36:15 AM	R86626
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/22/2022 3:36:15 AM	R86626
Styrene	ND	0.14	1.0		µg/L	1	3/22/2022 3:36:15 AM	R86626
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/22/2022 3:36:15 AM	R86626
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/22/2022 3:36:15 AM	R86626
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/22/2022 3:36:15 AM	R86626
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/22/2022 3:36:15 AM	R86626
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/22/2022 3:36:15 AM	R86626
Surr: 1,2-Dichloroethane-d4	93.1	0	70-130		%Rec	1	3/22/2022 3:36:15 AM	R86626
Surr: 4-Bromofluorobenzene	98.5	0	70-130		%Rec	1	3/22/2022 3:36:15 AM	R86626
Surr: Dibromofluoromethane	94.4	0	70-130		%Rec	1	3/22/2022 3:36:15 AM	R86626
Surr: Toluene-d8	100	0	70-130		%Rec	1	3/22/2022 3:36:15 AM	R86626

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203989**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-17-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/17/2022
Lab ID: 2203989-008A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	0.49	0.23	1.0	J	µg/L	1	3/22/2022 4:04:36 AM	R86626
Toluene	ND	0.20	1.0		µg/L	1	3/22/2022 4:04:36 AM	R86626
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/22/2022 4:04:36 AM	R86626
Methyl tert-butyl ether (MTBE)	17	0.39	1.0		µg/L	1	3/22/2022 4:04:36 AM	R86626
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/22/2022 4:04:36 AM	R86626
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/22/2022 4:04:36 AM	R86626
1,2-Dichloroethane (EDC)	0.54	0.25	1.0	J	µg/L	1	3/22/2022 4:04:36 AM	R86626
Acetone	ND	2.5	10		µg/L	1	3/22/2022 4:04:36 AM	R86626
Bromomethane	ND	0.85	3.0		µg/L	1	3/22/2022 4:04:36 AM	R86626
2-Butanone	ND	2.0	10		µg/L	1	3/22/2022 4:04:36 AM	R86626
Carbon disulfide	ND	0.59	10		µg/L	1	3/22/2022 4:04:36 AM	R86626
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/22/2022 4:04:36 AM	R86626
Chloroform	ND	0.13	1.0		µg/L	1	3/22/2022 4:04:36 AM	R86626
Chloromethane	0.66	0.41	3.0	J	µg/L	1	3/22/2022 4:04:36 AM	R86626
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/22/2022 4:04:36 AM	R86626
1,1-Dichloroethane	0.89	0.27	1.0	J	µg/L	1	3/22/2022 4:04:36 AM	R86626
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/22/2022 4:04:36 AM	R86626
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/22/2022 4:04:36 AM	R86626
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/22/2022 4:04:36 AM	R86626
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/22/2022 4:04:36 AM	R86626
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/22/2022 4:04:36 AM	R86626
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/22/2022 4:04:36 AM	R86626
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/22/2022 4:04:36 AM	R86626
Styrene	ND	0.14	1.0		µg/L	1	3/22/2022 4:04:36 AM	R86626
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/22/2022 4:04:36 AM	R86626
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/22/2022 4:04:36 AM	R86626
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/22/2022 4:04:36 AM	R86626
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/22/2022 4:04:36 AM	R86626
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/22/2022 4:04:36 AM	R86626
Surr: 1,2-Dichloroethane-d4	93.4	0	70-130		%Rec	1	3/22/2022 4:04:36 AM	R86626
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	3/22/2022 4:04:36 AM	R86626
Surr: Dibromofluoromethane	95.3	0	70-130		%Rec	1	3/22/2022 4:04:36 AM	R86626
Surr: Toluene-d8	102	0	70-130		%Rec	1	3/22/2022 4:04:36 AM	R86626
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.055	0.012	0.050		mg/L	1	3/22/2022 4:04:36 AM	G86626
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	3/22/2022 4:04:36 AM	G86626

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203989**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-17-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/17/2022
Lab ID: 2203989-008B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	3/21/2022 10:08:05 PM	66262

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203989**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-17-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/17/2022
Lab ID: 2203989-008C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.38	0.016	0.064		mg/L	1	3/22/2022 9:45:45 PM	66267
Motor Oil Range Organics (MRO)	0.18	0.052	0.080		mg/L	1	3/22/2022 9:45:45 PM	66267
Surr: DNOP	93.8	0	42.2-138		%Rec	1	3/22/2022 9:45:45 PM	66267
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	1.1	20		µg/L	1	3/24/2022 3:37:25 PM	66282
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/24/2022 3:37:25 PM	66282
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/24/2022 3:37:25 PM	66282
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	3/24/2022 3:37:25 PM	66282
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/24/2022 3:37:25 PM	66282
Diethyl phthalate	ND	3.9	10		µg/L	1	3/24/2022 3:37:25 PM	66282
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/24/2022 3:37:25 PM	66282
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/24/2022 3:37:25 PM	66282
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/24/2022 3:37:25 PM	66282
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/24/2022 3:37:25 PM	66282
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/24/2022 3:37:25 PM	66282
Phenol	ND	0.33	5.0		µg/L	1	3/24/2022 3:37:25 PM	66282
Pyridine	ND	10	10		µg/L	1	3/24/2022 3:37:25 PM	66282
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/24/2022 3:37:25 PM	66282
Surr: 2-Fluorophenol	3.92	0	29.4-87.7	S	%Rec	1	3/24/2022 3:37:25 PM	66282
Surr: Phenol-d5	9.97	0	28.5-64.7	S	%Rec	1	3/24/2022 3:37:25 PM	66282
Surr: 2,4,6-Tribromophenol	1.87	0	18.6-129	S	%Rec	1	3/24/2022 3:37:25 PM	66282
Surr: Nitrobenzene-d5	61.0	0	36.9-103		%Rec	1	3/24/2022 3:37:25 PM	66282
Surr: 2-Fluorobiphenyl	62.2	0	38.1-99.9		%Rec	1	3/24/2022 3:37:25 PM	66282
Surr: 4-Terphenyl-d14	87.3	0	48-155		%Rec	1	3/24/2022 3:37:25 PM	66282
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	3.6	0.048	1.0		µg/L	1	3/23/2022 6:16:00 PM	R86694
Naphthalene	ND	0.034	0.10		µg/L	1	3/23/2022 6:16:00 PM	R86694
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/23/2022 6:16:00 PM	R86694
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/23/2022 6:16:00 PM	R86694
Acenaphthene	ND	0.031	0.10		µg/L	1	3/23/2022 6:16:00 PM	R86694
Fluorene	ND	0.031	0.10		µg/L	1	3/23/2022 6:16:00 PM	R86694
Phenanthrene	ND	0.057	0.10		µg/L	1	3/23/2022 6:16:00 PM	R86694
Anthracene	ND	0.034	0.10		µg/L	1	3/23/2022 6:16:00 PM	R86694
Fluoranthene	ND	0.10	0.20		µg/L	1	3/23/2022 6:16:00 PM	R86694
Pyrene	ND	0.16	0.20		µg/L	1	3/23/2022 6:16:00 PM	R86694
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/23/2022 6:16:00 PM	R86694
Chrysene	ND	0.024	0.10		µg/L	1	3/23/2022 6:16:00 PM	R86694
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/23/2022 6:16:00 PM	R86694
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/23/2022 6:16:00 PM	R86694

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203989**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-17-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/17/2022
Lab ID: 2203989-008C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	68.4	0	31.6-100		%Rec	1	3/23/2022 6:16:00 PM	R86694
Surr: 2-Fluorobiphenyl	66.1	0	26.7-90.1		%Rec	1	3/23/2022 6:16:00 PM	R86694
Surr: 4-Terphenyl-d14	81.9	0	72.3-147		%Rec	1	3/23/2022 6:16:00 PM	R86694

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203989**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-17-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/17/2022
Lab ID: 2203989-008D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.076	0.0082	0.015		mg/L	5	4/6/2022 1:47:27 PM	66643
Beryllium	ND	0.0044	0.010		mg/L	5	4/6/2022 1:47:27 PM	66643
Cadmium	ND	0.0074	0.010		mg/L	5	4/6/2022 1:47:27 PM	66643
Chromium	ND	0.011	0.030		mg/L	5	4/6/2022 1:47:27 PM	66643
Cobalt	0.017	0.012	0.030	J	mg/L	5	4/6/2022 1:47:27 PM	66643
Nickel	0.021	0.016	0.050	J	mg/L	5	4/6/2022 1:47:27 PM	66643
Silver	ND	0.0063	0.025		mg/L	5	4/6/2022 1:47:27 PM	66643
Vanadium	ND	0.012	0.25		mg/L	5	4/6/2022 1:47:27 PM	66643
Zinc	ND	0.032	0.050		mg/L	5	4/6/2022 1:47:27 PM	66643
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	3/23/2022 12:25:36 PM	66341
Arsenic	0.0015	0.00063	0.0050	J	mg/L	5	3/23/2022 12:25:36 PM	66341
Lead	0.0017	0.00031	0.0025	J	mg/L	5	3/23/2022 12:25:36 PM	66341
Selenium	0.0034	0.0019	0.0050	J	mg/L	5	3/23/2022 12:25:36 PM	66341
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/24/2022 2:44:19 PM	66371

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203989**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-3-17-22
Project: 2022 GW Sampling 1st Qtr
Collection Date: 3/17/2022
Lab ID: 2203989-008E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.068	0.0056	0.010		mg/L	5	3/18/2022 11:49:06 AM	A86575
Beryllium	ND	0.0044	0.010		mg/L	5	3/18/2022 11:49:06 AM	A86575
Cadmium	ND	0.0049	0.010		mg/L	5	3/18/2022 11:49:06 AM	A86575
Chromium	ND	0.0098	0.030		mg/L	5	3/18/2022 11:49:06 AM	A86575
Cobalt	ND	0.012	0.030		mg/L	5	3/18/2022 11:49:06 AM	A86575
Nickel	0.030	0.016	0.050	J	mg/L	5	3/18/2022 11:49:06 AM	A86575
Silver	ND	0.0063	0.025		mg/L	5	3/18/2022 11:49:06 AM	A86575
Vanadium	ND	0.0086	0.25		mg/L	5	3/18/2022 11:49:06 AM	A86575
Zinc	ND	0.016	0.050		mg/L	5	3/18/2022 11:49:06 AM	A86575
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	3/22/2022 12:17:01 PM	A86633
Arsenic	0.0012	0.00061	0.0050	J	mg/L	5	3/22/2022 12:17:01 PM	A86633
Lead	ND	0.00028	0.0025		mg/L	5	3/22/2022 12:17:01 PM	A86633
Selenium	0.0043	0.0017	0.0050	J	mg/L	5	3/22/2022 12:17:01 PM	A86633
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	3/24/2022 2:46:28 PM	66371

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203989**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 1st Qtr
Collection Date:
Lab ID: 2203989-009A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	3/22/2022 4:32:57 AM	R86626
Toluene	ND	0.20	1.0		µg/L	1	3/22/2022 4:32:57 AM	R86626
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/22/2022 4:32:57 AM	R86626
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/22/2022 4:32:57 AM	R86626
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/22/2022 4:32:57 AM	R86626
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/22/2022 4:32:57 AM	R86626
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	3/22/2022 4:32:57 AM	R86626
Acetone	ND	2.5	10		µg/L	1	3/22/2022 4:32:57 AM	R86626
Bromomethane	ND	0.85	3.0		µg/L	1	3/22/2022 4:32:57 AM	R86626
2-Butanone	ND	2.0	10		µg/L	1	3/22/2022 4:32:57 AM	R86626
Carbon disulfide	ND	0.59	10		µg/L	1	3/22/2022 4:32:57 AM	R86626
Chlorobenzene	ND	0.16	1.0		µg/L	1	3/22/2022 4:32:57 AM	R86626
Chloroform	ND	0.13	1.0		µg/L	1	3/22/2022 4:32:57 AM	R86626
Chloromethane	0.69	0.41	3.0	J	µg/L	1	3/22/2022 4:32:57 AM	R86626
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/22/2022 4:32:57 AM	R86626
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/22/2022 4:32:57 AM	R86626
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	3/22/2022 4:32:57 AM	R86626
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/22/2022 4:32:57 AM	R86626
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/22/2022 4:32:57 AM	R86626
Methylene Chloride	ND	0.50	3.0		µg/L	1	3/22/2022 4:32:57 AM	R86626
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/22/2022 4:32:57 AM	R86626
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/22/2022 4:32:57 AM	R86626
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	3/22/2022 4:32:57 AM	R86626
Styrene	ND	0.14	1.0		µg/L	1	3/22/2022 4:32:57 AM	R86626
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/22/2022 4:32:57 AM	R86626
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/22/2022 4:32:57 AM	R86626
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/22/2022 4:32:57 AM	R86626
Vinyl chloride	ND	0.32	1.0		µg/L	1	3/22/2022 4:32:57 AM	R86626
Xylenes, Total	ND	0.37	1.5		µg/L	1	3/22/2022 4:32:57 AM	R86626
Surr: 1,2-Dichloroethane-d4	91.5	0	70-130		%Rec	1	3/22/2022 4:32:57 AM	R86626
Surr: 4-Bromofluorobenzene	105	0	70-130		%Rec	1	3/22/2022 4:32:57 AM	R86626
Surr: Dibromofluoromethane	97.5	0	70-130		%Rec	1	3/22/2022 4:32:57 AM	R86626
Surr: Toluene-d8	99.3	0	70-130		%Rec	1	3/22/2022 4:32:57 AM	R86626

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2203989**
Date Reported: **4/22/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 1st Qtr
Collection Date:
Lab ID: 2203989-009B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0035	0.0095		µg/L	1	3/21/2022 10:23:08 PM	66262

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

ANALYTICAL REPORT

March 30, 2022

Hall Environmental Analysis Laboratory

Sample Delivery Group: L1473975

Samples Received: 03/22/2022

Project Number:

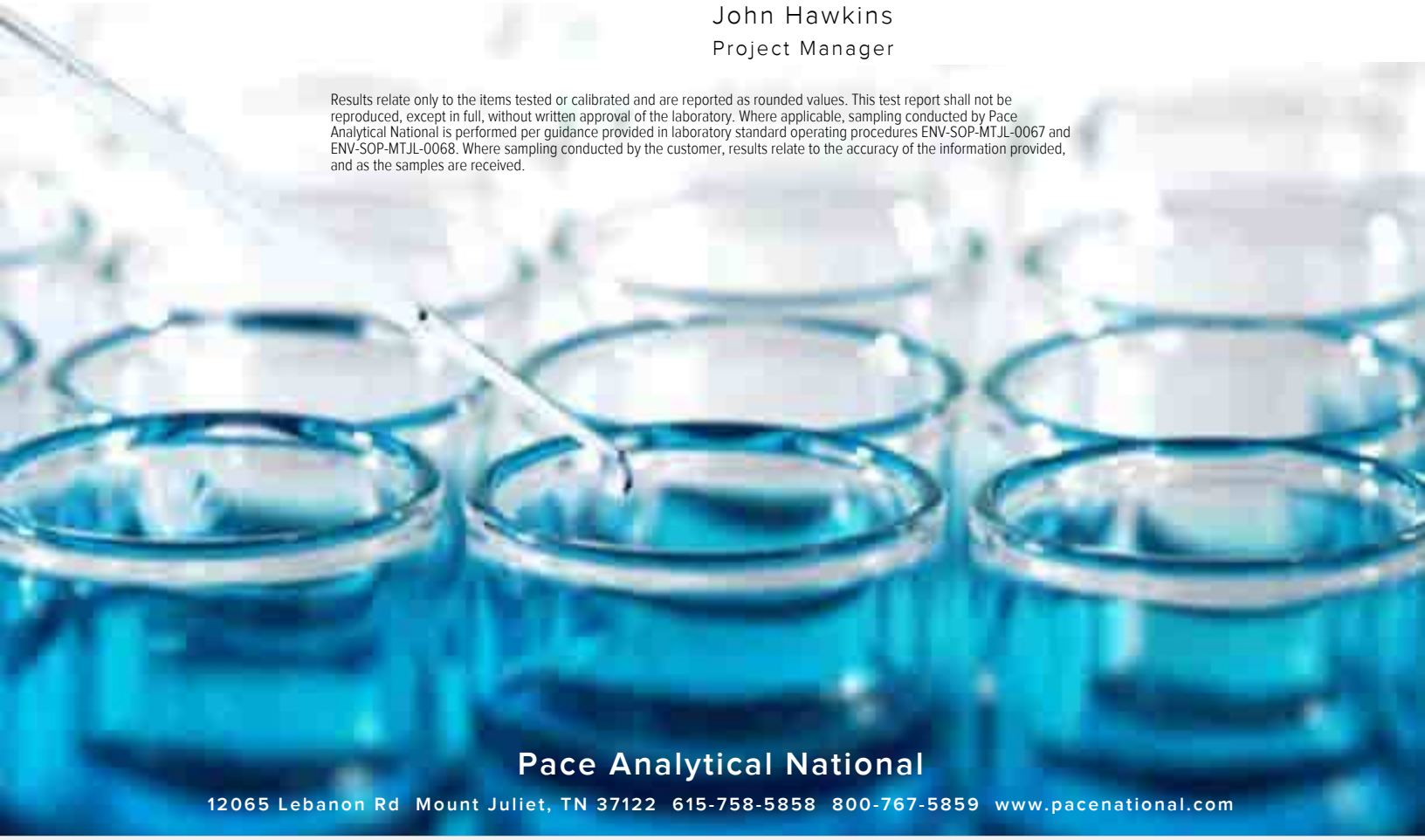
Description:

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By:

John Hawkins
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 4

Sr: Sample Results 5

2203989-001F EB 3-17-22 L1473975-01 5

2203989-002F MKTF-01R L1473975-02 6

2203989-003F MKTF-27 L1473975-03 7

2203989-004F MKTF-28 L1473975-04 8

2203989-005F MKTF-29 L1473975-05 9

2203989-006F MKTF-30 L1473975-06 10

2203989-008F DUP-3-17-22 L1473975-07 11

Qc: Quality Control Summary 12

Wet Chemistry by Method 4500CN E-2016 12

Gl: Glossary of Terms 13

Al: Accreditations & Locations 14

Sc: Sample Chain of Custody 15

SAMPLE SUMMARY

2203989-001F EB 3-17-22 L1473975-01 GW

			Collected by	Collected date/time	Received date/time	
				03/17/22 08:00	03/22/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1836836	1	03/23/22 18:57	03/30/22 12:49	LDT	Mt. Juliet, TN

2203989-002F MKTF-01R L1473975-02 GW

			Collected by	Collected date/time	Received date/time	
				03/17/22 08:46	03/22/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1836836	1	03/23/22 18:57	03/30/22 12:50	LDT	Mt. Juliet, TN

2203989-003F MKTF-27 L1473975-03 GW

			Collected by	Collected date/time	Received date/time	
				03/17/22 09:05	03/22/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1836836	1	03/23/22 18:57	03/30/22 12:55	LDT	Mt. Juliet, TN

2203989-004F MKTF-28 L1473975-04 GW

			Collected by	Collected date/time	Received date/time	
				03/17/22 09:35	03/22/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1836836	1	03/23/22 18:57	03/30/22 12:56	LDT	Mt. Juliet, TN

2203989-005F MKTF-29 L1473975-05 GW

			Collected by	Collected date/time	Received date/time	
				03/17/22 10:00	03/22/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1836836	1	03/23/22 18:57	03/30/22 12:58	LDT	Mt. Juliet, TN

2203989-006F MKTF-30 L1473975-06 GW

			Collected by	Collected date/time	Received date/time	
				03/17/22 10:15	03/22/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1836836	1	03/23/22 18:57	03/30/22 12:59	LDT	Mt. Juliet, TN

2203989-008F DUP-3-17-22 L1473975-07 GW

			Collected by	Collected date/time	Received date/time	
				03/17/22 00:00	03/22/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1836836	1	03/23/22 18:57	03/30/22 13:02	LDT	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	03/30/2022 12:49	WG1836836

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	03/30/2022 12:50	WG1836836

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.0118		0.00500	1	03/30/2022 12:55	WG1836836

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND	P1	0.00500	1	03/30/2022 12:56	WG1836836

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.00741		0.00500	1	03/30/2022 12:58	WG1836836

Received by OCD: 4/21/2023 9:21:57 AM

Wet Chemistry by Method 4500CN E-2016

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Cyanide	ND	J6	0.00500	1	03/30/2022 12:59	WG1836836

Released to Imaging: 4/21/2023 9:40:26 AM

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.0311		0.00500	1	03/30/2022 13:02	WG1836836

Method Blank (MB)

(MB) R3775665-1 03/30/22 12:43

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1473974-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1473974-05 03/30/22 12:47 • (DUP) R3775665-3 03/30/22 12:48

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

L1473975-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1473975-04 03/30/22 12:56 • (DUP) R3775665-6 03/30/22 12:57

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	73.6	P1	20

Laboratory Control Sample (LCS)

(LCS) R3775665-2 03/30/22 12:44

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.101	101	87.1-120	

L1473975-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1473975-02 03/30/22 12:50 • (MS) R3775665-4 03/30/22 12:51 • (MSD) R3775665-5 03/30/22 12:52

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.103	0.104	98.5	99.5	1	90.0-110			0.966	20

L1473975-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1473975-06 03/30/22 12:59 • (MS) R3775665-7 03/30/22 13:00 • (MSD) R3775665-8 03/30/22 13:01

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0893	0.0823	86.2	79.2	1	90.0-110	J6	J6	8.16	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Received by OCD: 4/21/2023 9:21:57 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

E166

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: clients.hallenvironmental.com

SUB CONTRATOR	Pace TN	COMPANY	PACE TN	PHONE	(800) 767-5859
ADDRESS	12065 Lebanon Rd			ACCOUNT #	
CITY, STATE, ZIP	Mt. Juliet, TN 37122			EMAIL	

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS	
1	2203989-001F	EB 3-17-22	500AMBHDP F-NAOH	Groundwater	3/17/2022 8:00:00 AM	1	Total Cyanide	RCV 712 -01
2	2203989-002F	MKTF-01R	500AMBHDP F-NAOH	Groundwater	3/17/2022 8:46:00 AM	1	Total Cyanide	-02
3	2203989-003F	MKTF-27	500AMBHDP F-NAOH	Groundwater	3/17/2022 9:05:00 AM	1	Total Cyanide	-03
4	2203989-004F	MKTF-28	500AMBHDP F-NAOH	Groundwater	3/17/2022 9:35:00 AM	1	Total Cyanide	-04
5	2203989-005F	MKTF-29	500AMBHDP F-NAOH	Groundwater	3/17/2022 10:00:00 AM	1	Total Cyanide	-05
6	2203989-006F	MKTF-30	500AMBHDP F-NAOH	Groundwater	3/17/2022 10:15:00 AM	1	Total Cyanide	-06
7	2203989-008F	DUP-3-17-22	500AMBHDP F-NAOH	Groundwater	3/17/2022	1	Total Cyanide	-07

L1473975

Sample Receipt Checklist

COC Seal Present/Intact:	Y N	If Applicable	
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	Y N	Pres.Correct/Check:	Y N
Correct bottles used:	Y N		
Sufficient volume sent:	Y N		
RAD Screen <0.5 mR/hr:	Y N		

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By:	Date: 3/18/2022	Time: 8:24 AM	Received By:	Date: 03/21/22	Time: 0900
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard X RUSH Next BD 2nd BD 3rd BD

REPORT TRANSMITTAL DESIRED:
HARDCOPY (extra cost) FAX EMAIL ONLINE

FOR LAB USE ONLY
Temp of samples 2.3 BAA °C Attempt to Cool ?
Comments:

TRK# 5528 5947 9466

Released to Imaging: 4/21/2023 9:40:26 AM

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203989**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB-66643** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**

Client ID: **PBW** Batch ID: **66643** RunNo: **87030**

Prep Date: **4/5/2022** Analysis Date: **4/6/2022** SeqNo: **3075587** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS-66643** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**

Client ID: **BatchQC** Batch ID: **66643** RunNo: **87030**

Prep Date: **4/5/2022** Analysis Date: **4/6/2022** SeqNo: **3075588** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0021	0.0030	0.002000	0	105	50	150			J
Beryllium	0.0020	0.0020	0.002000	0	102	50	150			
Cadmium	0.0017	0.0020	0.002000	0	86.8	50	150			J
Chromium	0.0056	0.0060	0.006000	0	92.5	50	150			J
Cobalt	0.0068	0.0060	0.006000	0	114	50	150			
Nickel	0.0034	0.010	0.005000	0	69.0	50	150			J
Silver	0.0043	0.0050	0.005000	0	86.5	50	150			J
Vanadium	0.010	0.050	0.01000	0	101	50	150			J
Zinc	0.010	0.010	0.01000	0	99.8	50	150			J

Sample ID: **LCS-66643** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**

Client ID: **LCSW** Batch ID: **66643** RunNo: **87030**

Prep Date: **4/5/2022** Analysis Date: **4/6/2022** SeqNo: **3075589** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0030	0.5000	0	95.8	85	115			
Beryllium	0.52	0.0020	0.5000	0	103	85	115			
Cadmium	0.47	0.0020	0.5000	0	94.4	85	115			
Chromium	0.48	0.0060	0.5000	0	96.1	85	115			
Cobalt	0.46	0.0060	0.5000	0	92.4	85	115			
Nickel	0.46	0.010	0.5000	0	92.5	85	115			
Silver	0.099	0.0050	0.1000	0	98.6	85	115			
Vanadium	0.50	0.050	0.5000	0	99.5	85	115			
Zinc	0.47	0.010	0.5000	0	94.4	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203989**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **2203989-002DMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **MKTF-01R**	Batch ID: **66643**	RunNo: **87030**
Prep Date: **4/5/2022**	Analysis Date: **4/6/2022**	SeqNo: **3076391** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.51	0.0020	0.5000	0	102	70	130			
Cadmium	0.45	0.0020	0.5000	0	90.3	70	130			
Chromium	0.47	0.0060	0.5000	0	93.6	70	130			
Cobalt	0.44	0.0060	0.5000	0.005266	87.7	70	130			
Nickel	0.47	0.010	0.5000	0.02371	88.3	70	130			
Silver	0.10	0.0050	0.1000	0	102	70	130			
Vanadium	0.50	0.050	0.5000	0.005401	99.7	70	130			
Zinc	0.45	0.010	0.5000	0.01104	88.1	70	130			

Sample ID: **2203989-002DMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Metals**
Client ID: **MKTF-01R**	Batch ID: **66643**	RunNo: **87030**
Prep Date: **4/5/2022**	Analysis Date: **4/6/2022**	SeqNo: **3076392** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.52	0.0020	0.5000	0	103	70	130	0.903	20	
Cadmium	0.45	0.0020	0.5000	0	90.2	70	130	0.0482	20	
Chromium	0.47	0.0060	0.5000	0	93.6	70	130	0.0369	20	
Cobalt	0.44	0.0060	0.5000	0.005266	87.3	70	130	0.496	20	
Nickel	0.46	0.010	0.5000	0.02371	88.1	70	130	0.260	20	
Silver	0.10	0.0050	0.1000	0	102	70	130	0.234	20	
Vanadium	0.50	0.050	0.5000	0.005401	99.8	70	130	0.139	20	
Zinc	0.45	0.010	0.5000	0.01104	88.2	70	130	0.0689	20	

Sample ID: **2203989-003DMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **MKTF-27**	Batch ID: **66643**	RunNo: **87030**
Prep Date: **4/5/2022**	Analysis Date: **4/6/2022**	SeqNo: **3076404** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.54	0.015	0.5000	0.07267	92.8	70	130			
Beryllium	0.50	0.010	0.5000	0	100	70	130			
Cadmium	0.46	0.010	0.5000	0	91.4	70	130			
Chromium	0.46	0.030	0.5000	0	91.1	70	130			
Cobalt	0.46	0.030	0.5000	0.01521	88.6	70	130			
Nickel	0.47	0.050	0.5000	0.02103	89.1	70	130			
Silver	0.099	0.025	0.1000	0	99.2	70	130			
Vanadium	0.50	0.25	0.5000	0	99.1	70	130			
Zinc	0.47	0.050	0.5000	0	94.6	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203989**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **2203989-003DMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Metals**
Client ID: **MKTF-27**	Batch ID: **66643**	RunNo: **87030**
Prep Date: **4/5/2022**	Analysis Date: **4/6/2022**	SeqNo: **3076405** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.55	0.015	0.5000	0.07267	95.0	70	130	2.08	20	
Beryllium	0.51	0.010	0.5000	0	102	70	130	1.86	20	
Cadmium	0.46	0.010	0.5000	0	91.9	70	130	0.547	20	
Chromium	0.46	0.030	0.5000	0	91.1	70	130	0.00219	20	
Cobalt	0.46	0.030	0.5000	0.01521	89.7	70	130	1.17	20	
Nickel	0.47	0.050	0.5000	0.02103	90.7	70	130	1.68	20	
Silver	0.10	0.025	0.1000	0	99.8	70	130	0.560	20	
Vanadium	0.50	0.25	0.5000	0	99.3	70	130	0.220	20	
Zinc	0.49	0.050	0.5000	0	98.6	70	130	4.14	20	

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **A87332**	RunNo: **87332**
Prep Date:	Analysis Date: **4/19/2022**	SeqNo: **3088697** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								

Sample ID: **LLLCS**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **A87332**	RunNo: **87332**
Prep Date:	Analysis Date: **4/19/2022**	SeqNo: **3088702** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0020	0.0030	0.002000	0	99.4	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **A87332**	RunNo: **87332**
Prep Date:	Analysis Date: **4/19/2022**	SeqNo: **3088704** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0030	0.5000	0	103	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203989**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A86575**	RunNo: **86575**
Prep Date:	Analysis Date: **3/18/2022**	SeqNo: **3055787** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A86575**	RunNo: **86575**
Prep Date:	Analysis Date: **3/18/2022**	SeqNo: **3055788** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0017	0.0020	0.002000	0	84.8	50	150			J
Beryllium	0.0020	0.0020	0.002000	0	97.9	50	150			J
Cadmium	0.0019	0.0020	0.002000	0	93.1	50	150			J
Chromium	0.0066	0.0060	0.006000	0	111	50	150			
Cobalt	0.0059	0.0060	0.006000	0	99.1	50	150			J
Nickel	0.0058	0.010	0.005000	0	117	50	150			J
Silver	0.0050	0.0050	0.005000	0	101	50	150			
Vanadium	0.011	0.050	0.01000	0	111	50	150			J
Zinc	0.011	0.010	0.01000	0	111	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A86575**	RunNo: **86575**
Prep Date:	Analysis Date: **3/18/2022**	SeqNo: **3055789** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.52	0.0020	0.5000	0	104	85	115			
Beryllium	0.53	0.0020	0.5000	0	106	85	115			
Cadmium	0.51	0.0020	0.5000	0	102	85	115			
Chromium	0.51	0.0060	0.5000	0	102	85	115			
Cobalt	0.50	0.0060	0.5000	0	101	85	115			
Nickel	0.50	0.010	0.5000	0	100	85	115			
Silver	0.10	0.0050	0.1000	0	103	85	115			
Vanadium	0.52	0.050	0.5000	0	104	85	115			
Zinc	0.53	0.010	0.5000	0	106	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203989**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **2203989-001EMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB 3-17-22**	Batch ID: **A86575**	RunNo: **86575**
Prep Date:	Analysis Date: **3/18/2022**	SeqNo: **3055804** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.54	0.0020	0.5000	0	108	70	130			
Beryllium	0.55	0.0020	0.5000	0	110	70	130			
Cadmium	0.53	0.0020	0.5000	0	106	70	130			
Chromium	0.53	0.0060	0.5000	0	106	70	130			
Cobalt	0.53	0.0060	0.5000	0	106	70	130			
Nickel	0.52	0.010	0.5000	0	104	70	130			
Silver	0.11	0.0050	0.1000	0	107	70	130			
Vanadium	0.54	0.050	0.5000	0	109	70	130			
Zinc	0.57	0.010	0.5000	0.004398	112	70	130			

Sample ID: **2203989-001EMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB 3-17-22**	Batch ID: **A86575**	RunNo: **86575**
Prep Date:	Analysis Date: **3/18/2022**	SeqNo: **3055805** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.56	0.0020	0.5000	0	112	70	130	4.48	20	
Beryllium	0.57	0.0020	0.5000	0	114	70	130	3.54	20	
Cadmium	0.55	0.0020	0.5000	0	109	70	130	2.98	20	
Chromium	0.55	0.0060	0.5000	0	110	70	130	3.43	20	
Cobalt	0.54	0.0060	0.5000	0	109	70	130	2.33	20	
Nickel	0.54	0.010	0.5000	0	107	70	130	2.71	20	
Silver	0.11	0.0050	0.1000	0	110	70	130	3.40	20	
Vanadium	0.56	0.050	0.5000	0	112	70	130	3.42	20	
Zinc	0.58	0.010	0.5000	0.004398	115	70	130	2.52	20	

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A87332**	RunNo: **87332**
Prep Date:	Analysis Date: **4/19/2022**	SeqNo: **3088745** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								

Sample ID: **LLLCS**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A87332**	RunNo: **87332**
Prep Date:	Analysis Date: **4/19/2022**	SeqNo: **3088746** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0020	0.0020	0.002000	0	99.4	50	150			J

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203989**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A87332**	RunNo: **87332**
Prep Date:	Analysis Date: **4/19/2022**	SeqNo: **3088747** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0020	0.5000	0	103	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203989**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **A86633**	RunNo: **86633**
Prep Date:	Analysis Date: **3/22/2022**	SeqNo: **3058718** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **A86633**	RunNo: **86633**
Prep Date:	Analysis Date: **3/22/2022**	SeqNo: **3058719** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0011	0.0010	0.001000	0	110	50	150			
Arsenic	0.0010	0.0010	0.001000	0	102	50	150			
Lead	0.00052	0.00050	0.0005000	0	104	50	150			
Selenium	0.0012	0.0010	0.001000	0	117	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **A86633**	RunNo: **86633**
Prep Date:	Analysis Date: **3/22/2022**	SeqNo: **3058720** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	98.7	85	115			
Arsenic	0.026	0.0010	0.02500	0	102	85	115			
Lead	0.013	0.00050	0.01250	0	103	85	115			
Selenium	0.026	0.0010	0.02500	0	104	85	115			

Sample ID: **MB-66341**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **66341**	RunNo: **86680**
Prep Date: **3/22/2022**	Analysis Date: **3/23/2022**	SeqNo: **3060282** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **MSLCS-66341**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **66341**	RunNo: **86680**
Prep Date: **3/22/2022**	Analysis Date: **3/23/2022**	SeqNo: **3060284** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203989**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **MSLCS-66341**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **66341**	RunNo: **86680**
Prep Date: **3/22/2022**	Analysis Date: **3/23/2022**	SeqNo: **3060284** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	102	85	115			
Arsenic	0.026	0.0010	0.02500	0	103	85	115			
Lead	0.013	0.00050	0.01250	0	102	85	115			
Selenium	0.026	0.0010	0.02500	0	105	85	115			

Sample ID: **MSLLLCS-66341**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **66341**	RunNo: **86680**
Prep Date: **3/22/2022**	Analysis Date: **3/23/2022**	SeqNo: **3060285** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00088	0.0010	0.001000	0	88.4	50	150			J
Arsenic	0.0011	0.0010	0.001000	0	105	50	150			
Lead	0.00052	0.00050	0.0005000	0	104	50	150			
Selenium	0.00078	0.0010	0.001000	0	77.9	50	150			J

Sample ID: **2203989-001DMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Metals**
Client ID: **EB 3-17-22**	Batch ID: **66341**	RunNo: **86680**
Prep Date: **3/22/2022**	Analysis Date: **3/23/2022**	SeqNo: **3060294** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	99.2	70	130			
Arsenic	0.025	0.0010	0.02500	0	102	70	130			
Lead	0.013	0.00050	0.01250	0	103	70	130			
Selenium	0.025	0.0010	0.02500	0	102	70	130			

Sample ID: **2203989-001DMSDL**	SampType: **MSD**	TestCode: **EPA 200.8: Metals**
Client ID: **EB 3-17-22**	Batch ID: **66341**	RunNo: **86680**
Prep Date: **3/22/2022**	Analysis Date: **3/23/2022**	SeqNo: **3060295** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	99.9	70	130	0.649	20	
Arsenic	0.025	0.0010	0.02500	0	102	70	130	0.322	20	
Lead	0.013	0.00050	0.01250	0	102	70	130	1.23	20	
Selenium	0.025	0.0010	0.02500	0	101	70	130	0.0262	20	

Sample ID: **2203989-002DMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Metals**
Client ID: **MKTF-01R**	Batch ID: **66341**	RunNo: **86680**
Prep Date: **3/22/2022**	Analysis Date: **3/23/2022**	SeqNo: **3060297** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203989**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **2203989-002DMSLL** SampType: **MS** TestCode: **EPA 200.8: Metals**
Client ID: **MKTF-01R** Batch ID: **66341** RunNo: **86680**
Prep Date: **3/22/2022** Analysis Date: **3/23/2022** SeqNo: **3060297** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.023	0.0010	0.02500	0	93.0	70	130			
Arsenic	0.034	0.0010	0.02500	0.005434	116	70	130			
Lead	0.014	0.00050	0.01250	0.002130	92.7	70	130			
Selenium	0.027	0.0010	0.02500	0.0007450	106	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203989**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B86624**	RunNo: **86624**
Prep Date:	Analysis Date: **3/21/2022**	SeqNo: **3058031** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B86624**	RunNo: **86624**
Prep Date:	Analysis Date: **3/21/2022**	SeqNo: **3058032** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0010	0.0010	0.001000	0	104	50	150			
Arsenic	0.0011	0.0010	0.001000	0	110	50	150			
Lead	0.00054	0.00050	0.0005000	0	108	50	150			
Selenium	0.0012	0.0010	0.001000	0	117	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B86624**	RunNo: **86624**
Prep Date:	Analysis Date: **3/21/2022**	SeqNo: **3058033** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	102	85	115			
Arsenic	0.027	0.0010	0.02500	0	108	85	115			
Lead	0.014	0.00050	0.01250	0	108	85	115			
Selenium	0.025	0.0010	0.02500	0	101	85	115			

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A86633**	RunNo: **86633**
Prep Date:	Analysis Date: **3/22/2022**	SeqNo: **3058721** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A86633**	RunNo: **86633**
Prep Date:	Analysis Date: **3/22/2022**	SeqNo: **3058722** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203989**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A86633**	RunNo: **86633**
Prep Date:	Analysis Date: **3/22/2022**	SeqNo: **3058722** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0011	0.0010	0.001000	0	110	50	150			
Arsenic	0.0010	0.0010	0.001000	0	102	50	150			
Lead	0.00052	0.00050	0.0005000	0	104	50	150			
Selenium	0.0012	0.0010	0.001000	0	117	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A86633**	RunNo: **86633**
Prep Date:	Analysis Date: **3/22/2022**	SeqNo: **3058723** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	98.7	85	115			
Arsenic	0.026	0.0010	0.02500	0	102	85	115			
Lead	0.013	0.00050	0.01250	0	103	85	115			
Selenium	0.026	0.0010	0.02500	0	104	85	115			

Sample ID: **2203989-003EMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **MKTF-27**	Batch ID: **A86633**	RunNo: **86633**
Prep Date:	Analysis Date: **3/22/2022**	SeqNo: **3058739** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.13	0.0050	0.1250	0	102	70	130			
Arsenic	0.15	0.0050	0.1250	0.001127	116	70	130			
Lead	0.056	0.0025	0.06250	0	89.2	70	130			
Selenium	0.14	0.0050	0.1250	0.004667	107	70	130			

Sample ID: **2203989-003EMSDL**	SampType: **MSD**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **MKTF-27**	Batch ID: **A86633**	RunNo: **86633**
Prep Date:	Analysis Date: **3/22/2022**	SeqNo: **3058740** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.13	0.0050	0.1250	0	102	70	130	0.712	20	
Arsenic	0.15	0.0050	0.1250	0.001127	118	70	130	1.86	20	
Lead	0.056	0.0025	0.06250	0	88.8	70	130	0.417	20	
Selenium	0.16	0.0050	0.1250	0.004667	124	70	130	14.3	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203989**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB-66371**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **PBW**	Batch ID: **66371**	RunNo: **86726**							
Prep Date: **3/24/2022**	Analysis Date: **3/24/2022**	SeqNo: **3061893**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-66371**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **BatchQC**	Batch ID: **66371**	RunNo: **86726**							
Prep Date: **3/24/2022**	Analysis Date: **3/24/2022**	SeqNo: **3061894**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020	0.0001500	0	118	50	150			

Sample ID: **LCS-66371**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **LCSW**	Batch ID: **66371**	RunNo: **86726**							
Prep Date: **3/24/2022**	Analysis Date: **3/24/2022**	SeqNo: **3061895**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0049	0.00020	0.005000	0	98.4	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203989**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB-66256**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **66256**	RunNo: **86618**							
Prep Date: **3/21/2022**	Analysis Date: **3/21/2022**	SeqNo: **3057941**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **MB-66262**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **66262**	RunNo: **86618**							
Prep Date: **3/21/2022**	Analysis Date: **3/21/2022**	SeqNo: **3057942**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **MB-66262**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **66262**	RunNo: **86618**							
Prep Date: **3/21/2022**	Analysis Date: **3/21/2022**	SeqNo: **3057944**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **MB-66256**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **66256**	RunNo: **86618**							
Prep Date: **3/21/2022**	Analysis Date: **3/21/2022**	SeqNo: **3057948**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-66256**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **LCSW**	Batch ID: **66256**	RunNo: **86618**							
Prep Date: **3/21/2022**	Analysis Date: **3/21/2022**	SeqNo: **3057949**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.098	0.010	0.1000	0	98.4	70	130			

Sample ID: **LCS-66262**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **LCSW**	Batch ID: **66262**	RunNo: **86618**							
Prep Date: **3/21/2022**	Analysis Date: **3/21/2022**	SeqNo: **3057950**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.10	0.010	0.1000	0	102	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203989**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **LCSD-66256**	SampType: **LCSD**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSS02**	Batch ID: **66256**	RunNo: **86618**
Prep Date: **3/21/2022**	Analysis Date: **3/21/2022**	SeqNo: **3057951** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.098	0.010	0.1000	0	98.3	70	130	0.0963	20	

Sample ID: **LCSD-66262**	SampType: **LCSD**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSS02**	Batch ID: **66262**	RunNo: **86618**
Prep Date: **3/21/2022**	Analysis Date: **3/21/2022**	SeqNo: **3057952** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.099	0.010	0.1000	0	98.6	70	130	3.56	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203989**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **MB-66267**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **PBW**	Batch ID: **66267**	RunNo: **86643**
Prep Date: **3/18/2022**	Analysis Date: **3/22/2022**	SeqNo: **3059916** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.027	0.064								J
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.041		0.03750		109	42.2	138			

Sample ID: **LCSD-66267**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02**	Batch ID: **66267**	RunNo: **86643**
Prep Date: **3/18/2022**	Analysis Date: **3/22/2022**	SeqNo: **3059917** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.13	0.064	0.1875	0	71.2	31.7	75.4	15.1	20	
Surr: DNOP	0.021		0.01875		114	42.2	138	0	0	

Sample ID: **LCS-66267**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSW**	Batch ID: **66267**	RunNo: **86643**
Prep Date: **3/18/2022**	Analysis Date: **3/22/2022**	SeqNo: **3059919** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.11	0.064	0.1875	0	61.2	31.7	75.4			
Surr: DNOP	0.020		0.01875		106	42.2	138			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203989**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R86626**	RunNo: **86626**
Prep Date:	Analysis Date: **3/21/2022**	SeqNo: **3058196** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	96.9	70	130			
Toluene	22	1.0	20.00	0	111	70	130			
Chlorobenzene	23	1.0	20.00	0	113	70	130			
1,1-Dichloroethene	19	1.0	20.00	0	93.6	70	130			
Trichloroethene (TCE)	17	1.0	20.00	0	86.8	70	130			
Surr: 1,2-Dichloroethane-d4	9.0		10.00		90.1	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	9.0		10.00		89.7	70	130			
Surr: Toluene-d8	9.9		10.00		98.8	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R86626**	RunNo: **86626**
Prep Date:	Analysis Date: **3/21/2022**	SeqNo: **3058226** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	0.68	3.0								J
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203989**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R86626**	RunNo: **86626**
Prep Date:	Analysis Date: **3/21/2022**	SeqNo: **3058226** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Styrene	ND	1.0								
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.0		10.00		90.0	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		105	70	130			
Surr: Dibromofluoromethane	9.6		10.00		95.7	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203989**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **lcs-66282**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **66282**	RunNo: **86693**
Prep Date: **3/21/2022**	Analysis Date: **3/23/2022**	SeqNo: **3061248** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	52	5.0	100.0	0	51.8	15	87.6			
Phenol	75	5.0	200.0	0	37.4	16.8	70.5			
Surr: 2-Fluorophenol	98		200.0		49.1	29.4	87.7			
Surr: Phenol-d5	74		200.0		37.0	28.5	64.7			
Surr: 2,4,6-Tribromophenol	130		200.0		65.2	18.6	129			
Surr: Nitrobenzene-d5	62		100.0		61.9	36.9	103			
Surr: 2-Fluorobiphenyl	55		100.0		55.4	38.1	99.9			
Surr: 4-Terphenyl-d14	81		100.0		81.0	48	155			

Sample ID: **lcsd-66282**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **66282**	RunNo: **86693**
Prep Date: **3/21/2022**	Analysis Date: **3/23/2022**	SeqNo: **3061249** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	58	5.0	100.0	0	58.3	15	87.6	11.8	30.4	
Phenol	79	5.0	200.0	0	39.4	16.8	70.5	5.11	37.2	
Surr: 2-Fluorophenol	100		200.0		52.0	29.4	87.7	0	0	
Surr: Phenol-d5	79		200.0		39.4	28.5	64.7	0	0	
Surr: 2,4,6-Tribromophenol	130		200.0		67.5	18.6	129	0	0	
Surr: Nitrobenzene-d5	65		100.0		64.7	36.9	103	0	0	
Surr: 2-Fluorobiphenyl	61		100.0		60.6	38.1	99.9	0	0	
Surr: 4-Terphenyl-d14	97		100.0		96.5	48	155	0	0	

Sample ID: **mb-66282**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **66282**	RunNo: **86737**
Prep Date: **3/21/2022**	Analysis Date: **3/24/2022**	SeqNo: **3062562** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	5.0								
2,4-Dinitrophenol	ND	5.0								
2-Methylphenol	ND	5.0								
3+4-Methylphenol	ND	5.0								
Naphthalene	ND	5.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203989**
22-Apr-22

Client: Marathon
Project: 2022 GW Sampling 1st Qtr

Sample ID: **mb-66282** SampType: **MBLK** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW** Batch ID: **66282** RunNo: **86737**
Prep Date: **3/21/2022** Analysis Date: **3/24/2022** SeqNo: **3062562** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenol	ND	5.0								
Pyridine	ND	10								
2,4,6-Trichlorophenol	ND	5.0								
Surr: 2-Fluorophenol	86		200.0		42.9	29.4	87.7			
Surr: Phenol-d5	70		200.0		34.9	28.5	64.7			
Surr: 2,4,6-Tribromophenol	100		200.0		51.4	18.6	129			
Surr: Nitrobenzene-d5	50		100.0		49.9	36.9	103			
Surr: 2-Fluorobiphenyl	47		100.0		46.7	38.1	99.9			
Surr: 4-Terphenyl-d14	80		100.0		79.7	48	155			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203989**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **mb-66282**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **R86694**	RunNo: **86694**
Prep Date:	Analysis Date: **3/23/2022**	SeqNo: **3061263** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.10								
2-Methylnaphthalene	ND	0.10								
Acenaphthene	ND	0.10								
Fluorene	ND	0.10								
Phenanthrene	ND	0.10								
Anthracene	ND	0.10								
Fluoranthene	ND	0.20								
Pyrene	ND	0.20								
Benz(a)anthracene	ND	0.10								
Chrysene	ND	0.10								
Benzo(b)fluoranthene	ND	0.10								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	61		100.0		61.1	31.6	100			
Surr: 2,4,6-Tribromophenol	85		200.0		42.7	22	101			
Surr: 2-Fluorobiphenyl	57		100.0		57.5	26.7	90.1			
Surr: 4-Terphenyl-d14	98		100.0		98.4	72.3	147			

Sample ID: **lcs-66282-lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **R86694**	RunNo: **86694**
Prep Date:	Analysis Date: **3/23/2022**	SeqNo: **3061264** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.72	0.10	2.000	0	36.0	20.2	48.4			
Naphthalene	1.1	0.10	2.000	0	54.0	21.3	79.9			
1-Methylnaphthalene	1.1	0.10	2.000	0	53.0	22.2	80.3			
2-Methylnaphthalene	1.0	0.10	2.000	0	52.0	20.6	80.1			
Acenaphthene	1.2	0.10	2.000	0	62.0	29.8	82.7			
Fluorene	1.3	0.10	2.000	0	66.0	33.3	86			
Phenanthrene	1.4	0.10	2.000	0	72.0	38.2	93.9			
Anthracene	1.5	0.10	2.000	0	74.0	41.1	95.6			
Fluoranthene	1.7	0.20	2.000	0	87.0	52.9	123			
Pyrene	1.7	0.20	2.000	0	84.0	51	113			
Benz(a)anthracene	2.0	0.10	2.000	0	101	51	147			
Chrysene	1.8	0.10	2.000	0	89.0	55.3	115			
Benzo(b)fluoranthene	1.9	0.10	2.000	0	95.0	44.4	136			
Indeno(1,2,3-cd)pyrene	2.3	0.30	2.000	0	114	31.4	165			
Surr: Nitrobenzene-d5	67		100.0		67.2	31.6	100			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203989**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **lcs-66282-lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**							
Client ID: **LCSW**	Batch ID: **R86694**	RunNo: **86694**							
Prep Date:	Analysis Date: **3/23/2022**	SeqNo: **3061264**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	91		200.0		45.6	22	101			
Surr: 2-Fluorobiphenyl	65		100.0		65.1	26.7	90.1			
Surr: 4-Terphenyl-d14	92		100.0		92.0	72.3	147			

Sample ID: **lcsd-66282-lf**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**							
Client ID: **LCSS02**	Batch ID: **R86694**	RunNo: **86694**							
Prep Date:	Analysis Date: **3/23/2022**	SeqNo: **3061265**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.70	0.10	2.000	0	35.0	20.2	48.4	2.82	30.1	
Naphthalene	1.1	0.10	2.000	0	53.0	21.3	79.9	1.87	25.6	
1-Methylnaphthalene	1.1	0.10	2.000	0	53.0	22.2	80.3	0	25	
2-Methylnaphthalene	1.0	0.10	2.000	0	52.0	20.6	80.1	0	25	
Acenaphthene	1.2	0.10	2.000	0	61.0	29.8	82.7	1.63	27.8	
Fluorene	1.3	0.10	2.000	0	66.0	33.3	86	0	26.4	
Phenanthrene	1.4	0.10	2.000	0	72.0	38.2	93.9	0	27.9	
Anthracene	1.5	0.10	2.000	0	76.0	41.1	95.6	2.67	25.6	
Fluoranthene	1.8	0.20	2.000	0	90.0	52.9	123	3.39	22.8	
Pyrene	1.7	0.20	2.000	0	84.0	51	113	0	20	
Benz(a)anthracene	2.1	0.10	2.000	0	103	51	147	1.96	24.1	
Chrysene	1.8	0.10	2.000	0	88.0	55.3	115	1.13	20	
Benzo(b)fluoranthene	2.0	0.10	2.000	0	98.0	44.4	136	3.11	24.5	
Indeno(1,2,3-cd)pyrene	2.3	0.30	2.000	0	113	31.4	165	0.881	21.1	
Surr: Nitrobenzene-d5	66		100.0		66.5	31.6	100	0	0	
Surr: 2,4,6-Tribromophenol	90		200.0		44.8	22	101	0	0	
Surr: 2-Fluorobiphenyl	64		100.0		63.6	26.7	90.1	0	0	
Surr: 4-Terphenyl-d14	93		100.0		92.6	72.3	147	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203989**

22-Apr-22

Client: Marathon

Project: 2022 GW Sampling 1st Qtr

Sample ID: **2.5ug lcs gro**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **G86626**	RunNo: **86626**
Prep Date:	Analysis Date: **3/21/2022**	SeqNo: **3058229** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.50	0.050	0.5000	0	101	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **G86626**	RunNo: **86626**
Prep Date:	Analysis Date: **3/21/2022**	SeqNo: **3058249** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.034	0.050								J
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: Marathon | Work Order Number: 2203989 | RcptNo: 1

Received By: Cheyenne Cason 3/18/2022 7:25:00 AM

Completed By: Cheyenne Cason 3/18/2022 8:21:48 AM

Reviewed By: KPG 3/18/22

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☑ No ☐ NA ☐
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
    # of preserved bottles checked for pH: 1 4 7 (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐ Adjusted? NO
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐ Checked by: JM 3/18/22

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.3	Good	Yes			
2	1.7	Good	Yes			
3	0.8	Good	Yes			
4	1.3	Good	Yes			

Released to Imaging: 4/21/2023 9:40:26 AM
Received by OCD: 4/21/2023 9:21:57 AM

Chain-of-Custody Record

Client: Marathon Gallup Refinery

Mailing Address: 92 Giant Crossing Road
Jamestown, NM,87347

Phone #: 808-640-1823

Email or Fax#:

QA/QC Package:
X Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

X EDD (Type)

Turn-Around Time:
X Standard Rush

Project Name:
2022 GW Sampling 1st Quarter

Project #: **697-080-001**

Project Manager:
Lesli Alexander/Mackensie Swift

Sampler: Hilario Trejo
On Ice: X Yes ☐ No
# of Coolers: 4
Cooler Temp(including CF): See Remark

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2203989	See Analyte List	8260B: VOC	8270C: SVOC	8270C SIM: PAH, 1,4 Dioxane	8015: TPH GRO/DRO/MRO	E200.7: Metals	E200.7: Dissolved Metals	E245.1 Mercury	E504.1: EDB	E335.4: Cyanide Subbed		537.1: PFAS	SM 5201B: BOD	410.4: COD	SM9223B E Coli
3/17	8:00		EB-3-17-22	13		001	X	X	X	X	X	X	X	X	X	X					
3/17	8:40		MKTE-01R	13		002	X	X	X	X	X	X	X	X	X	X					
3/17	9:05		MKTE-27	13		003	X	X	X	X	X	X	X	X	X	X					
3/17	9:35		MKTE-28	13		004	X	X	X	X	X	X	X	X	X	X					
3/17	10:00		MKTE-29	13		005	X	X	X	X	X	X	X	X	X	X					
3/17	10:15		MKTE-30	13		006	X	X	X	X	X	X	X	X	X	X					
3/17	10:15		FB-3-17-22	2		007		X													
3/17	—		DUP-3-17-22	13		008	X	X	X	X	X	X	X	X	X	X					
			Trip Blank			009															

Date	Time:	Relinquished by:	Received by:	Via:	Date	Time
3-17-22	1:00	Hilario Trejo	Clint Cowan		3/18/22	0725
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

0.3+0=0.3
1.7+0=1.7
0.8+0=0.8
1.3+0=1.3

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Appendix C-2. 2nd Quarter Analytical Reports

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

August 15, 2022

Lesli Alexander

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX (505) 632-3911

RE: 2022 GW Sampling 2nd Quarter OrderNo.: 2206B30

Dear Lesli Alexander:

Hall Environmental Analysis Laboratory received 10 sample(s) on 6/22/2022 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued July 12, 2022.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **2206B30**
Date: **8/15/2022**

CLIENT: Marathon
Project: 2022 GW Sampling 2nd Quarter

Analytical Notes Regarding EPA Method 8270:
Naphthalene, 1-methylnaphthalene and 2-methylnaphthalene may be reported by either EPA Method 8270 or EPA Method 8270SIMS, depending which method needs the least dilution. In this report Naphthalene, 1-methylnaphthalene and 2-methylnaphthalene were reported by EPA Method 8270 instead of EPA Method 8270SIMS for sample MKTF-18R. Naphthalene and 2-methylnaphthalene were reported by EPA Method 8270 instead of EPA Method 8270SIMS for sample MKTF-35.

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-21-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 8:00:00 AM
Lab ID: 2206B30-001A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	6/24/2022 12:56:52 PM	A89029
Surr: BFB	102	0	70-130		%Rec	1	6/24/2022 12:56:52 PM	A89029
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	6/27/2022 4:56:00 PM	W89041
Toluene	ND	0.20	1.0		µg/L	1	6/27/2022 4:56:00 PM	W89041
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/27/2022 4:56:00 PM	W89041
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	6/27/2022 4:56:00 PM	W89041
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/27/2022 4:56:00 PM	W89041
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/27/2022 4:56:00 PM	W89041
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/27/2022 4:56:00 PM	W89041
Acetone	3.2	2.5	10	J	µg/L	1	6/27/2022 4:56:00 PM	W89041
Bromomethane	ND	0.85	3.0		µg/L	1	6/27/2022 4:56:00 PM	W89041
2-Butanone	ND	2.0	10		µg/L	1	6/27/2022 4:56:00 PM	W89041
Carbon disulfide	ND	0.59	10		µg/L	1	6/27/2022 4:56:00 PM	W89041
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/27/2022 4:56:00 PM	W89041
Chloroform	ND	0.13	1.0		µg/L	1	6/27/2022 4:56:00 PM	W89041
Chloromethane	ND	0.41	3.0		µg/L	1	6/27/2022 4:56:00 PM	W89041
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/27/2022 4:56:00 PM	W89041
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/27/2022 4:56:00 PM	W89041
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/27/2022 4:56:00 PM	W89041
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/27/2022 4:56:00 PM	W89041
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/27/2022 4:56:00 PM	W89041
Methylene Chloride	0.80	0.50	3.0	J	µg/L	1	6/27/2022 4:56:00 PM	W89041
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/27/2022 4:56:00 PM	W89041
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/27/2022 4:56:00 PM	W89041
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	6/27/2022 4:56:00 PM	W89041
Styrene	ND	0.14	1.0		µg/L	1	6/27/2022 4:56:00 PM	W89041
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/27/2022 4:56:00 PM	W89041
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/27/2022 4:56:00 PM	W89041
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/27/2022 4:56:00 PM	W89041
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/27/2022 4:56:00 PM	W89041
Xylenes, Total	ND	0.37	1.5		µg/L	1	6/27/2022 4:56:00 PM	W89041
Surr: 1,2-Dichloroethane-d4	97.7	0	70-130		%Rec	1	6/27/2022 4:56:00 PM	W89041
Surr: 4-Bromofluorobenzene	79.7	0	70-130		%Rec	1	6/27/2022 4:56:00 PM	W89041
Surr: Dibromofluoromethane	104	0	70-130		%Rec	1	6/27/2022 4:56:00 PM	W89041
Surr: Toluene-d8	112	0	70-130		%Rec	1	6/27/2022 4:56:00 PM	W89041

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-21-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 8:00:00 AM
Lab ID: 2206B30-001B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	6/24/2022 4:49:26 AM	68319

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-21-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 8:00:00 AM
Lab ID: 2206B30-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.041	0.016	0.064	J	mg/L	1	7/5/2022 4:20:59 PM	68348
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	7/5/2022 4:20:59 PM	68348
Surr: DNOP	94.4	0	42.2-138		%Rec	1	7/5/2022 4:20:59 PM	68348
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	7/7/2022 12:44:36 PM	68332
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	7/7/2022 12:44:36 PM	68332
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	7/7/2022 12:44:36 PM	68332
Di-n-octyl phthalate	ND	12	20		µg/L	1	7/7/2022 12:44:36 PM	68332
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	7/7/2022 12:44:36 PM	68332
Diethyl phthalate	ND	6.0	10		µg/L	1	7/7/2022 12:44:36 PM	68332
Dimethyl phthalate	ND	6.0	10		µg/L	1	7/7/2022 12:44:36 PM	68332
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	7/7/2022 12:44:36 PM	68332
2,4-Dinitrophenol	ND	16	20		µg/L	1	7/7/2022 12:44:36 PM	68332
2-Methylphenol	ND	5.0	10		µg/L	1	7/7/2022 12:44:36 PM	68332
3+4-Methylphenol	ND	5.1	10		µg/L	1	7/7/2022 12:44:36 PM	68332
Phenol	ND	18	20		µg/L	1	7/7/2022 12:44:36 PM	68332
Pyridine	ND	14	40		µg/L	1	7/7/2022 12:44:36 PM	68332
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	7/7/2022 12:44:36 PM	68332
Surr: 2-Fluorophenol	45.1	0	29.4-87.7		%Rec	1	7/7/2022 12:44:36 PM	68332
Surr: Phenol-d5	33.9	0	28.5-64.7		%Rec	1	7/7/2022 12:44:36 PM	68332
Surr: 2,4,6-Tribromophenol	56.6	0	18.6-129		%Rec	1	7/7/2022 12:44:36 PM	68332
Surr: Nitrobenzene-d5	59.0	0	36.9-103		%Rec	1	7/7/2022 12:44:36 PM	68332
Surr: 2-Fluorobiphenyl	56.4	0	38.1-99.9		%Rec	1	7/7/2022 12:44:36 PM	68332
Surr: 4-Terphenyl-d14	82.5	0	48-155		%Rec	1	7/7/2022 12:44:36 PM	68332
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	7/6/2022 12:45:00 PM	68332
Naphthalene	ND	0.20	0.30		µg/L	1	7/6/2022 12:45:00 PM	68332
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	7/6/2022 12:45:00 PM	68332
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	7/6/2022 12:45:00 PM	68332
Acenaphthene	ND	0.14	0.30		µg/L	1	7/6/2022 12:45:00 PM	68332
Fluorene	ND	0.095	0.30		µg/L	1	7/6/2022 12:45:00 PM	68332
Phenanthrene	ND	0.16	0.30		µg/L	1	7/6/2022 12:45:00 PM	68332
Anthracene	ND	0.14	0.30		µg/L	1	7/6/2022 12:45:00 PM	68332
Fluoranthene	ND	0.14	0.30		µg/L	1	7/6/2022 12:45:00 PM	68332
Pyrene	ND	0.32	1.0		µg/L	1	7/6/2022 12:45:00 PM	68332
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	7/6/2022 12:45:00 PM	68332
Chrysene	ND	0.25	0.30		µg/L	1	7/6/2022 12:45:00 PM	68332
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	7/6/2022 12:45:00 PM	68332
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	7/6/2022 12:45:00 PM	68332

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-21-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 8:00:00 AM
Lab ID: 2206B30-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	62.2	0	31.6-100		%Rec	1	7/6/2022 12:45:00 PM	68332
Surr: 2-Fluorobiphenyl	59.9	0	26.7-90.1		%Rec	1	7/6/2022 12:45:00 PM	68332
Surr: 4-Terphenyl-d14	102	0	72.3-147		%Rec	1	7/6/2022 12:45:00 PM	68332

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-21-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 8:00:00 AM
Lab ID: 2206B30-001D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	ND	0.0016	0.0030		mg/L	1	6/27/2022 9:24:57 AM	68353
Beryllium	ND	0.00088	0.0020		mg/L	1	6/27/2022 9:24:57 AM	68353
Cadmium	ND	0.0018	0.0020		mg/L	1	6/27/2022 9:24:57 AM	68353
Chromium	ND	0.0020	0.0060		mg/L	1	6/27/2022 9:24:57 AM	68353
Cobalt	ND	0.0035	0.0060		mg/L	1	6/27/2022 9:24:57 AM	68353
Nickel	ND	0.0053	0.010		mg/L	1	6/27/2022 9:24:57 AM	68353
Silver	ND	0.0018	0.0050		mg/L	1	6/27/2022 9:24:57 AM	68353
Vanadium	ND	0.0035	0.050		mg/L	1	6/27/2022 9:24:57 AM	68353
Zinc	ND	0.0039	0.010		mg/L	1	6/27/2022 9:24:57 AM	68353
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/27/2022 10:48:01 AM	68353
Arsenic	ND	0.00013	0.0010		mg/L	1	6/27/2022 10:48:01 AM	68353
Lead	ND	0.000061	0.00050		mg/L	1	6/27/2022 10:48:01 AM	68353
Selenium	ND	0.00037	0.0010		mg/L	1	6/27/2022 10:48:01 AM	68353
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/24/2022 11:54:32 AM	68333

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-21-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 8:00:00 AM
Lab ID: 2206B30-001E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	ND	0.0011	0.0020		mg/L	1	6/23/2022 11:26:23 AM	A88979
Beryllium	ND	0.00088	0.0020		mg/L	1	6/23/2022 11:26:23 AM	A88979
Cadmium	ND	0.00098	0.0020		mg/L	1	6/23/2022 11:26:23 AM	A88979
Chromium	ND	0.0020	0.0060		mg/L	1	6/23/2022 11:26:23 AM	A88979
Cobalt	ND	0.0024	0.0060		mg/L	1	6/23/2022 11:26:23 AM	A88979
Nickel	ND	0.0033	0.010		mg/L	1	6/23/2022 11:26:23 AM	A88979
Silver	ND	0.0013	0.0050		mg/L	1	6/23/2022 11:26:23 AM	A88979
Vanadium	ND	0.0017	0.050		mg/L	1	6/23/2022 11:26:23 AM	A88979
Zinc	0.0075	0.0032	0.010	J	mg/L	1	6/23/2022 11:26:23 AM	A88979
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/23/2022 11:32:57 AM	A88981
Arsenic	ND	0.00012	0.0010		mg/L	1	6/23/2022 11:32:57 AM	A88981
Lead	ND	0.000057	0.00050		mg/L	1	6/23/2022 11:32:57 AM	A88981
Selenium	ND	0.00034	0.0010		mg/L	1	6/23/2022 11:32:57 AM	A88981
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/24/2022 11:56:40 AM	68333

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-21-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 8:00:00 AM
Lab ID: 2206B30-001F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PAC**	
Cyanide	ND	0.00500	0.00500		mg/L	1	7/1/2022 1:18:00 PM	R89481

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-46
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 8:20:00 AM
Lab ID: 2206B30-002A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	0.016	0.0090	0.050	J	mg/L	1	6/24/2022 1:20:35 PM	A89029
Surr: BFB	98.8	0	70-130		%Rec	1	6/24/2022 1:20:35 PM	A89029
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	6/27/2022 5:19:00 PM	W89041
Toluene	ND	0.20	1.0		µg/L	1	6/27/2022 5:19:00 PM	W89041
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/27/2022 5:19:00 PM	W89041
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	6/27/2022 5:19:00 PM	W89041
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/27/2022 5:19:00 PM	W89041
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/27/2022 5:19:00 PM	W89041
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/27/2022 5:19:00 PM	W89041
Acetone	ND	2.5	10		µg/L	1	6/27/2022 5:19:00 PM	W89041
Bromomethane	ND	0.85	3.0		µg/L	1	6/27/2022 5:19:00 PM	W89041
2-Butanone	ND	2.0	10		µg/L	1	6/27/2022 5:19:00 PM	W89041
Carbon disulfide	ND	0.59	10		µg/L	1	6/27/2022 5:19:00 PM	W89041
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/27/2022 5:19:00 PM	W89041
Chloroform	ND	0.13	1.0		µg/L	1	6/27/2022 5:19:00 PM	W89041
Chloromethane	ND	0.41	3.0		µg/L	1	6/27/2022 5:19:00 PM	W89041
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/27/2022 5:19:00 PM	W89041
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/27/2022 5:19:00 PM	W89041
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/27/2022 5:19:00 PM	W89041
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/27/2022 5:19:00 PM	W89041
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/27/2022 5:19:00 PM	W89041
Methylene Chloride	ND	0.50	3.0		µg/L	1	6/27/2022 5:19:00 PM	W89041
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/27/2022 5:19:00 PM	W89041
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/27/2022 5:19:00 PM	W89041
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	6/27/2022 5:19:00 PM	W89041
Styrene	ND	0.14	1.0		µg/L	1	6/27/2022 5:19:00 PM	W89041
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/27/2022 5:19:00 PM	W89041
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/27/2022 5:19:00 PM	W89041
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/27/2022 5:19:00 PM	W89041
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/27/2022 5:19:00 PM	W89041
Xylenes, Total	ND	0.37	1.5		µg/L	1	6/27/2022 5:19:00 PM	W89041
Surr: 1,2-Dichloroethane-d4	90.9	0	70-130		%Rec	1	6/27/2022 5:19:00 PM	W89041
Surr: 4-Bromofluorobenzene	88.5	0	70-130		%Rec	1	6/27/2022 5:19:00 PM	W89041
Surr: Dibromofluoromethane	104	0	70-130		%Rec	1	6/27/2022 5:19:00 PM	W89041
Surr: Toluene-d8	106	0	70-130		%Rec	1	6/27/2022 5:19:00 PM	W89041

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-46
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 8:20:00 AM
Lab ID: 2206B30-002B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0093		µg/L	1	6/24/2022 5:19:35 AM	68319

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-46
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 8:20:00 AM
Lab ID: 2206B30-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.070	0.016	0.064		mg/L	1	7/5/2022 4:44:46 PM	68348
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	7/5/2022 4:44:46 PM	68348
Surr: DNOP	97.2	0	42.2-138		%Rec	1	7/5/2022 4:44:46 PM	68348
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	7/7/2022 1:27:55 PM	68332
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	7/7/2022 1:27:55 PM	68332
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	7/7/2022 1:27:55 PM	68332
Di-n-octyl phthalate	ND	12	20		µg/L	1	7/7/2022 1:27:55 PM	68332
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	7/7/2022 1:27:55 PM	68332
Diethyl phthalate	ND	6.0	10		µg/L	1	7/7/2022 1:27:55 PM	68332
Dimethyl phthalate	ND	6.0	10		µg/L	1	7/7/2022 1:27:55 PM	68332
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	7/7/2022 1:27:55 PM	68332
2,4-Dinitrophenol	ND	16	20		µg/L	1	7/7/2022 1:27:55 PM	68332
2-Methylphenol	ND	5.0	10		µg/L	1	7/7/2022 1:27:55 PM	68332
3+4-Methylphenol	ND	5.1	10		µg/L	1	7/7/2022 1:27:55 PM	68332
Phenol	ND	18	20		µg/L	1	7/7/2022 1:27:55 PM	68332
Pyridine	ND	14	40		µg/L	1	7/7/2022 1:27:55 PM	68332
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	7/7/2022 1:27:55 PM	68332
Surr: 2-Fluorophenol	35.0	0	29.4-87.7		%Rec	1	7/7/2022 1:27:55 PM	68332
Surr: Phenol-d5	26.3	0	28.5-64.7	S	%Rec	1	7/7/2022 1:27:55 PM	68332
Surr: 2,4,6-Tribromophenol	46.9	0	18.6-129		%Rec	1	7/7/2022 1:27:55 PM	68332
Surr: Nitrobenzene-d5	47.2	0	36.9-103		%Rec	1	7/7/2022 1:27:55 PM	68332
Surr: 2-Fluorobiphenyl	42.9	0	38.1-99.9		%Rec	1	7/7/2022 1:27:55 PM	68332
Surr: 4-Terphenyl-d14	70.4	0	48-155		%Rec	1	7/7/2022 1:27:55 PM	68332
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	1.5	0.11	1.0		µg/L	1	7/6/2022 1:29:00 PM	68332
Naphthalene	ND	0.20	0.30		µg/L	1	7/6/2022 1:29:00 PM	68332
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	7/6/2022 1:29:00 PM	68332
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	7/6/2022 1:29:00 PM	68332
Acenaphthene	ND	0.14	0.30		µg/L	1	7/6/2022 1:29:00 PM	68332
Fluorene	ND	0.095	0.30		µg/L	1	7/6/2022 1:29:00 PM	68332
Phenanthrene	0.22	0.16	0.30	J	µg/L	1	7/6/2022 1:29:00 PM	68332
Anthracene	ND	0.14	0.30		µg/L	1	7/6/2022 1:29:00 PM	68332
Fluoranthene	ND	0.14	0.30		µg/L	1	7/6/2022 1:29:00 PM	68332
Pyrene	ND	0.32	1.0		µg/L	1	7/6/2022 1:29:00 PM	68332
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	7/6/2022 1:29:00 PM	68332
Chrysene	ND	0.25	0.30		µg/L	1	7/6/2022 1:29:00 PM	68332
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	7/6/2022 1:29:00 PM	68332
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	7/6/2022 1:29:00 PM	68332

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-46
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 8:20:00 AM
Lab ID: 2206B30-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	56.2	0	31.6-100		%Rec	1	7/6/2022 1:29:00 PM	68332
Surr: 2-Fluorobiphenyl	52.7	0	26.7-90.1		%Rec	1	7/6/2022 1:29:00 PM	68332
Surr: 4-Terphenyl-d14	90.8	0	72.3-147		%Rec	1	7/6/2022 1:29:00 PM	68332

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-46
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 8:20:00 AM
Lab ID: 2206B30-002D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	0.080	0.0016	0.0030		mg/L	1	6/27/2022 9:26:35 AM	68353
Beryllium	ND	0.00088	0.0020		mg/L	1	6/27/2022 9:26:35 AM	68353
Cadmium	ND	0.0018	0.0020		mg/L	1	6/27/2022 9:26:35 AM	68353
Chromium	0.0021	0.0020	0.0060	J	mg/L	1	6/27/2022 9:26:35 AM	68353
Cobalt	ND	0.0035	0.0060		mg/L	1	6/27/2022 9:26:35 AM	68353
Nickel	ND	0.0053	0.010		mg/L	1	6/27/2022 9:26:35 AM	68353
Silver	ND	0.0018	0.0050		mg/L	1	6/27/2022 9:26:35 AM	68353
Vanadium	0.0040	0.0035	0.050	J	mg/L	1	6/27/2022 9:26:35 AM	68353
Zinc	0.0048	0.0039	0.010	J	mg/L	1	6/27/2022 9:26:35 AM	68353
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/27/2022 10:50:28 AM	68353
Arsenic	0.00086	0.00013	0.0010	J	mg/L	1	6/27/2022 10:50:28 AM	68353
Lead	0.0014	0.000061	0.00050		mg/L	1	6/27/2022 10:50:28 AM	68353
Selenium	0.00045	0.00037	0.0010	J	mg/L	1	6/27/2022 10:50:28 AM	68353
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00013	0.000091	0.00020	J	mg/L	1	6/24/2022 11:58:49 AM	68333

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-46
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 8:20:00 AM
Lab ID: 2206B30-002E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.037	0.0011	0.0020		mg/L	1	6/23/2022 11:30:48 AM	A88979
Beryllium	ND	0.00088	0.0020		mg/L	1	6/23/2022 11:30:48 AM	A88979
Cadmium	ND	0.00098	0.0020		mg/L	1	6/23/2022 11:30:48 AM	A88979
Chromium	ND	0.0020	0.0060		mg/L	1	6/23/2022 11:30:48 AM	A88979
Cobalt	ND	0.0024	0.0060		mg/L	1	6/23/2022 11:30:48 AM	A88979
Nickel	ND	0.0033	0.010		mg/L	1	6/23/2022 11:30:48 AM	A88979
Silver	0.0032	0.0013	0.0050	J	mg/L	1	6/23/2022 11:30:48 AM	A88979
Vanadium	0.0040	0.0017	0.050	J	mg/L	1	6/23/2022 11:30:48 AM	A88979
Zinc	0.0084	0.0032	0.010	J	mg/L	1	6/23/2022 11:30:48 AM	A88979
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/23/2022 11:35:38 AM	A88981
Arsenic	0.00066	0.00012	0.0010	J	mg/L	1	6/23/2022 11:35:38 AM	A88981
Lead	ND	0.000057	0.00050		mg/L	1	6/23/2022 11:35:38 AM	A88981
Selenium	ND	0.00034	0.0010		mg/L	1	6/23/2022 11:35:38 AM	A88981
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/24/2022 12:00:58 PM	68333

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-46
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 8:20:00 AM
Lab ID: 2206B30-002F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PAC**	
Cyanide	ND	0.00500	0.00500		mg/L	1	7/1/2022 1:19:00 PM	R89481

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18R
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 8:45:00 AM
Lab ID: 2206B30-003A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	10	0.090	0.50	P	mg/L	10	6/24/2022 1:44:19 PM	A89029
Surr: BFB	107	0	70-130	P	%Rec	10	6/24/2022 1:44:19 PM	A89029
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	2100	23	100		µg/L	100	6/27/2022 6:27:00 PM	W89041
Toluene	770	2.0	10		µg/L	10	6/27/2022 6:50:00 PM	W89041
Ethylbenzene	51	2.1	10		µg/L	10	6/27/2022 6:50:00 PM	W89041
Methyl tert-butyl ether (MTBE)	130	3.9	10		µg/L	10	6/27/2022 6:50:00 PM	W89041
1,2,4-Trimethylbenzene	43	1.2	10		µg/L	10	6/27/2022 6:50:00 PM	W89041
1,3,5-Trimethylbenzene	16	1.8	10		µg/L	10	6/27/2022 6:50:00 PM	W89041
1,2-Dichloroethane (EDC)	ND	2.5	10		µg/L	10	6/27/2022 6:50:00 PM	W89041
Acetone	ND	25	100		µg/L	10	6/27/2022 6:50:00 PM	W89041
Bromomethane	ND	8.5	30		µg/L	10	6/27/2022 6:50:00 PM	W89041
2-Butanone	ND	20	100		µg/L	10	6/27/2022 6:50:00 PM	W89041
Carbon disulfide	ND	5.9	100		µg/L	10	6/27/2022 6:50:00 PM	W89041
Chlorobenzene	ND	1.6	10		µg/L	10	6/27/2022 6:50:00 PM	W89041
Chloroform	ND	1.3	10		µg/L	10	6/27/2022 6:50:00 PM	W89041
Chloromethane	ND	4.1	30		µg/L	10	6/27/2022 6:50:00 PM	W89041
cis-1,2-DCE	5.7	3.9	10	J	µg/L	10	6/27/2022 6:50:00 PM	W89041
1,1-Dichloroethane	ND	2.7	10		µg/L	10	6/27/2022 6:50:00 PM	W89041
1,1-Dichloroethene	ND	2.0	10		µg/L	10	6/27/2022 6:50:00 PM	W89041
Isopropylbenzene	5.0	1.8	10	J	µg/L	10	6/27/2022 6:50:00 PM	W89041
4-Isopropyltoluene	2.7	2.0	10	J	µg/L	10	6/27/2022 6:50:00 PM	W89041
Methylene Chloride	ND	5.0	30		µg/L	10	6/27/2022 6:50:00 PM	W89041
n-Butylbenzene	3.7	2.5	30	J	µg/L	10	6/27/2022 6:50:00 PM	W89041
n-Propylbenzene	5.6	1.8	10	J	µg/L	10	6/27/2022 6:50:00 PM	W89041
sec-Butylbenzene	2.6	1.4	10	J	µg/L	10	6/27/2022 6:50:00 PM	W89041
Styrene	ND	1.4	10		µg/L	10	6/27/2022 6:50:00 PM	W89041
Tetrachloroethene (PCE)	ND	3.6	10		µg/L	10	6/27/2022 6:50:00 PM	W89041
1,1,1-Trichloroethane	ND	3.0	10		µg/L	10	6/27/2022 6:50:00 PM	W89041
Trichloroethene (TCE)	ND	2.0	10		µg/L	10	6/27/2022 6:50:00 PM	W89041
Vinyl chloride	ND	3.2	10		µg/L	10	6/27/2022 6:50:00 PM	W89041
Xylenes, Total	440	3.7	15		µg/L	10	6/27/2022 6:50:00 PM	W89041
Surr: 1,2-Dichloroethane-d4	94.7	0	70-130		%Rec	10	6/27/2022 6:50:00 PM	W89041
Surr: 4-Bromofluorobenzene	97.8	0	70-130		%Rec	10	6/27/2022 6:50:00 PM	W89041
Surr: Dibromofluoromethane	98.2	0	70-130		%Rec	10	6/27/2022 6:50:00 PM	W89041
Surr: Toluene-d8	102	0	70-130		%Rec	10	6/27/2022 6:50:00 PM	W89041

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18R
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 8:45:00 AM
Lab ID: 2206B30-003B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	6/24/2022 5:49:52 AM	68319

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18R
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 8:45:00 AM
Lab ID: 2206B30-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	3.5	0.016	0.064		mg/L	1	7/5/2022 5:08:40 PM	68348
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	7/5/2022 5:08:40 PM	68348
Surr: DNOP	96.9	0	42.2-138		%Rec	1	7/5/2022 5:08:40 PM	68348
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	7/7/2022 2:11:24 PM	68332
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	7/7/2022 2:11:24 PM	68332
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	7/7/2022 2:11:24 PM	68332
Di-n-octyl phthalate	ND	12	20		µg/L	1	7/7/2022 2:11:24 PM	68332
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	7/7/2022 2:11:24 PM	68332
Diethyl phthalate	ND	6.0	10		µg/L	1	7/7/2022 2:11:24 PM	68332
Dimethyl phthalate	ND	6.0	10		µg/L	1	7/7/2022 2:11:24 PM	68332
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	7/7/2022 2:11:24 PM	68332
2,4-Dinitrophenol	ND	16	20		µg/L	1	7/7/2022 2:11:24 PM	68332
1-Methylnaphthalene	84	4.3	5.0		µg/L	1	7/7/2022 2:11:24 PM	68332
2-Methylnaphthalene	93	4.2	5.0		µg/L	1	7/7/2022 2:11:24 PM	68332
2-Methylphenol	7.3	5.0	10	J	µg/L	1	7/7/2022 2:11:24 PM	68332
3+4-Methylphenol	ND	5.1	10		µg/L	1	7/7/2022 2:11:24 PM	68332
Naphthalene	55	3.2	5.0		µg/L	1	7/7/2022 2:11:24 PM	68332
Phenol	ND	18	20		µg/L	1	7/7/2022 2:11:24 PM	68332
Pyridine	ND	14	40		µg/L	1	7/7/2022 2:11:24 PM	68332
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	7/7/2022 2:11:24 PM	68332
Surr: 2-Fluorophenol	44.7	0	29.4-87.7		%Rec	1	7/7/2022 2:11:24 PM	68332
Surr: Phenol-d5	33.3	0	28.5-64.7		%Rec	1	7/7/2022 2:11:24 PM	68332
Surr: 2,4,6-Tribromophenol	58.7	0	18.6-129		%Rec	1	7/7/2022 2:11:24 PM	68332
Surr: Nitrobenzene-d5	55.7	0	36.9-103		%Rec	1	7/7/2022 2:11:24 PM	68332
Surr: 2-Fluorobiphenyl	50.6	0	38.1-99.9		%Rec	1	7/7/2022 2:11:24 PM	68332
Surr: 4-Terphenyl-d14	71.9	0	48-155		%Rec	1	7/7/2022 2:11:24 PM	68332
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	13	0.11	1.0		µg/L	1	7/6/2022 2:13:00 PM	68332
Acenaphthene	6.3	0.14	0.30		µg/L	1	7/6/2022 2:13:00 PM	68332
Fluorene	8.0	0.095	0.30		µg/L	1	7/6/2022 2:13:00 PM	68332
Phenanthrene	6.7	0.16	0.30		µg/L	1	7/6/2022 2:13:00 PM	68332
Anthracene	0.42	0.14	0.30		µg/L	1	7/6/2022 2:13:00 PM	68332
Fluoranthene	ND	0.14	0.30		µg/L	1	7/6/2022 2:13:00 PM	68332
Pyrene	ND	0.32	1.0		µg/L	1	7/6/2022 2:13:00 PM	68332
Benz(a)anthracene	0.16	0.15	0.30	J	µg/L	1	7/6/2022 2:13:00 PM	68332
Chrysene	ND	0.25	0.30		µg/L	1	7/6/2022 2:13:00 PM	68332
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	7/6/2022 2:13:00 PM	68332
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	7/6/2022 2:13:00 PM	68332

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18R
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 8:45:00 AM
Lab ID: 2206B30-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	61.4	0	31.6-100		%Rec	1	7/6/2022 2:13:00 PM	68332
Surr: 2-Fluorobiphenyl	53.9	0	26.7-90.1		%Rec	1	7/6/2022 2:13:00 PM	68332
Surr: 4-Terphenyl-d14	74.9	0	72.3-147		%Rec	1	7/6/2022 2:13:00 PM	68332

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18R
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 8:45:00 AM
Lab ID: 2206B30-003D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	2.0	0.0079	0.015		mg/L	5	6/28/2022 6:55:35 PM	68353
Beryllium	ND	0.00088	0.0020		mg/L	1	6/27/2022 9:28:01 AM	68353
Cadmium	ND	0.0018	0.0020		mg/L	1	6/27/2022 9:28:01 AM	68353
Chromium	0.0028	0.0020	0.0060	J	mg/L	1	6/27/2022 9:28:01 AM	68353
Cobalt	0.0051	0.0035	0.0060	J	mg/L	1	6/27/2022 9:28:01 AM	68353
Nickel	0.0079	0.0053	0.010	J	mg/L	1	6/27/2022 9:28:01 AM	68353
Silver	ND	0.0018	0.0050		mg/L	1	6/27/2022 9:28:01 AM	68353
Vanadium	0.011	0.0035	0.050	J	mg/L	1	6/27/2022 9:28:01 AM	68353
Zinc	0.0044	0.0039	0.010	J	mg/L	1	6/27/2022 9:28:01 AM	68353
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/27/2022 10:52:54 AM	68353
Arsenic	0.0065	0.00013	0.0010		mg/L	1	6/27/2022 10:52:54 AM	68353
Lead	0.0052	0.000061	0.00050		mg/L	1	6/27/2022 10:52:54 AM	68353
Selenium	0.00075	0.00037	0.0010	J	mg/L	1	6/27/2022 10:52:54 AM	68353
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/24/2022 12:03:08 PM	68333

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18R
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 8:45:00 AM
Lab ID: 2206B30-003E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	1.6	0.0056	0.010		mg/L	5	6/23/2022 11:37:10 AM	A88979
Beryllium	ND	0.00088	0.0020		mg/L	1	6/23/2022 11:35:12 AM	A88979
Cadmium	ND	0.00098	0.0020		mg/L	1	6/23/2022 11:35:12 AM	A88979
Chromium	ND	0.0020	0.0060		mg/L	1	6/23/2022 11:35:12 AM	A88979
Cobalt	ND	0.0024	0.0060		mg/L	1	6/23/2022 11:35:12 AM	A88979
Nickel	0.0062	0.0033	0.010	J	mg/L	1	6/23/2022 11:35:12 AM	A88979
Silver	0.0016	0.0013	0.0050	J	mg/L	1	6/23/2022 11:35:12 AM	A88979
Vanadium	0.0024	0.0017	0.050	J	mg/L	1	6/23/2022 11:35:12 AM	A88979
Zinc	0.0099	0.0032	0.010	J	mg/L	1	6/23/2022 11:35:12 AM	A88979
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/23/2022 11:38:19 AM	A88981
Arsenic	0.0085	0.00012	0.0010		mg/L	1	6/23/2022 11:38:19 AM	A88981
Lead	ND	0.000057	0.00050		mg/L	1	6/23/2022 11:38:19 AM	A88981
Selenium	ND	0.00034	0.0010		mg/L	1	6/23/2022 11:38:19 AM	A88981
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/24/2022 12:05:17 PM	68333

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18R
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 8:45:00 AM
Lab ID: 2206B30-003F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PAC**	
Cyanide	ND	0.00500	0.00500		mg/L	1	7/1/2022 1:20:00 PM	R89481

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-35
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 9:05:00 AM
Lab ID: 2206B30-004A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	64	0.090	0.50		mg/L	10	6/24/2022 2:08:03 PM	A89029
Surr: BFB	151	0	70-130	S	%Rec	10	6/24/2022 2:08:03 PM	A89029
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	14000	45	200		µg/L	200	6/27/2022 7:13:00 PM	W89041
Toluene	3300	40	200		µg/L	200	6/27/2022 7:13:00 PM	W89041
Ethylbenzene	1700	4.3	20		µg/L	20	6/27/2022 7:36:00 PM	W89041
Methyl tert-butyl ether (MTBE)	770	7.9	20		µg/L	20	6/27/2022 7:36:00 PM	W89041
1,2,4-Trimethylbenzene	640	2.4	20		µg/L	20	6/27/2022 7:36:00 PM	W89041
1,3,5-Trimethylbenzene	110	3.6	20		µg/L	20	6/27/2022 7:36:00 PM	W89041
1,2-Dichloroethane (EDC)	ND	5.1	20		µg/L	20	6/27/2022 7:36:00 PM	W89041
Acetone	ND	50	200		µg/L	20	6/27/2022 7:36:00 PM	W89041
Bromomethane	ND	17	60		µg/L	20	6/27/2022 7:36:00 PM	W89041
2-Butanone	ND	41	200		µg/L	20	6/27/2022 7:36:00 PM	W89041
Carbon disulfide	ND	12	200		µg/L	20	6/27/2022 7:36:00 PM	W89041
Chlorobenzene	ND	3.1	20		µg/L	20	6/27/2022 7:36:00 PM	W89041
Chloroform	ND	2.7	20		µg/L	20	6/27/2022 7:36:00 PM	W89041
Chloromethane	ND	8.2	60		µg/L	20	6/27/2022 7:36:00 PM	W89041
cis-1,2-DCE	ND	7.8	20		µg/L	20	6/27/2022 7:36:00 PM	W89041
1,1-Dichloroethane	ND	5.5	20		µg/L	20	6/27/2022 7:36:00 PM	W89041
1,1-Dichloroethene	ND	4.0	20		µg/L	20	6/27/2022 7:36:00 PM	W89041
Isopropylbenzene	40	3.7	20		µg/L	20	6/27/2022 7:36:00 PM	W89041
4-Isopropyltoluene	6.1	4.0	20	J	µg/L	20	6/27/2022 7:36:00 PM	W89041
Methylene Chloride	ND	10	60		µg/L	20	6/27/2022 7:36:00 PM	W89041
n-Butylbenzene	8.0	5.1	60	J	µg/L	20	6/27/2022 7:36:00 PM	W89041
n-Propylbenzene	100	3.6	20		µg/L	20	6/27/2022 7:36:00 PM	W89041
sec-Butylbenzene	5.4	2.9	20	J	µg/L	20	6/27/2022 7:36:00 PM	W89041
Styrene	ND	2.7	20		µg/L	20	6/27/2022 7:36:00 PM	W89041
Tetrachloroethene (PCE)	ND	7.1	20		µg/L	20	6/27/2022 7:36:00 PM	W89041
1,1,1-Trichloroethane	ND	6.0	20		µg/L	20	6/27/2022 7:36:00 PM	W89041
Trichloroethene (TCE)	ND	4.1	20		µg/L	20	6/27/2022 7:36:00 PM	W89041
Vinyl chloride	ND	6.4	20		µg/L	20	6/27/2022 7:36:00 PM	W89041
Xylenes, Total	4200	7.4	30		µg/L	20	6/27/2022 7:36:00 PM	W89041
Surr: 1,2-Dichloroethane-d4	91.0	0	70-130		%Rec	20	6/27/2022 7:36:00 PM	W89041
Surr: 4-Bromofluorobenzene	97.7	0	70-130		%Rec	20	6/27/2022 7:36:00 PM	W89041
Surr: Dibromofluoromethane	92.7	0	70-130		%Rec	20	6/27/2022 7:36:00 PM	W89041
Surr: Toluene-d8	102	0	70-130		%Rec	20	6/27/2022 7:36:00 PM	W89041

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-35
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 9:05:00 AM
Lab ID: 2206B30-004B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	6/24/2022 6:20:04 AM	68319

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-35
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 9:05:00 AM
Lab ID: 2206B30-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	3.2	0.016	0.064		mg/L	1	7/5/2022 5:32:29 PM	68348
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	7/5/2022 5:32:29 PM	68348
Surr: DNOP	101	0	42.2-138		%Rec	1	7/5/2022 5:32:29 PM	68348
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	7/7/2022 2:54:20 PM	68332
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	7/7/2022 2:54:20 PM	68332
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	7/7/2022 2:54:20 PM	68332
Di-n-octyl phthalate	ND	12	20		µg/L	1	7/7/2022 2:54:20 PM	68332
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	7/7/2022 2:54:20 PM	68332
Diethyl phthalate	ND	6.0	10		µg/L	1	7/7/2022 2:54:20 PM	68332
Dimethyl phthalate	ND	6.0	10		µg/L	1	7/7/2022 2:54:20 PM	68332
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	7/7/2022 2:54:20 PM	68332
2,4-Dinitrophenol	ND	16	20		µg/L	1	7/7/2022 2:54:20 PM	68332
2-Methylnaphthalene	21	4.2	5.0		µg/L	1	7/7/2022 2:54:20 PM	68332
2-Methylphenol	ND	5.0	10		µg/L	1	7/7/2022 2:54:20 PM	68332
3+4-Methylphenol	ND	5.1	10		µg/L	1	7/7/2022 2:54:20 PM	68332
Naphthalene	110	3.2	5.0		µg/L	1	7/7/2022 2:54:20 PM	68332
Phenol	38	18	20		µg/L	1	7/7/2022 2:54:20 PM	68332
Pyridine	ND	14	40		µg/L	1	7/7/2022 2:54:20 PM	68332
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	7/7/2022 2:54:20 PM	68332
Surr: 2-Fluorophenol	0	0	29.4-87.7	S	%Rec	1	7/7/2022 2:54:20 PM	68332
Surr: Phenol-d5	32.2	0	28.5-64.7		%Rec	1	7/7/2022 2:54:20 PM	68332
Surr: 2,4,6-Tribromophenol	48.2	0	18.6-129		%Rec	1	7/7/2022 2:54:20 PM	68332
Surr: Nitrobenzene-d5	56.1	0	36.9-103		%Rec	1	7/7/2022 2:54:20 PM	68332
Surr: 2-Fluorobiphenyl	50.4	0	38.1-99.9		%Rec	1	7/7/2022 2:54:20 PM	68332
Surr: 4-Terphenyl-d14	71.2	0	48-155		%Rec	1	7/7/2022 2:54:20 PM	68332
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	2.0	0.11	1.0		µg/L	1	7/6/2022 2:57:00 PM	68332
1-Methylnaphthalene	16	0.15	0.30		µg/L	1	7/6/2022 2:57:00 PM	68332
Acenaphthene	1.6	0.14	0.30		µg/L	1	7/6/2022 2:57:00 PM	68332
Fluorene	0.88	0.095	0.30		µg/L	1	7/6/2022 2:57:00 PM	68332
Phenanthrene	0.38	0.16	0.30		µg/L	1	7/6/2022 2:57:00 PM	68332
Anthracene	0.30	0.14	0.30		µg/L	1	7/6/2022 2:57:00 PM	68332
Fluoranthene	ND	0.14	0.30		µg/L	1	7/6/2022 2:57:00 PM	68332
Pyrene	ND	0.32	1.0		µg/L	1	7/6/2022 2:57:00 PM	68332
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	7/6/2022 2:57:00 PM	68332
Chrysene	ND	0.25	0.30		µg/L	1	7/6/2022 2:57:00 PM	68332
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	7/6/2022 2:57:00 PM	68332
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	7/6/2022 2:57:00 PM	68332

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-35
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 9:05:00 AM
Lab ID: 2206B30-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	63.7	0	31.6-100		%Rec	1	7/6/2022 2:57:00 PM	68332
Surr: 2-Fluorobiphenyl	54.5	0	26.7-90.1		%Rec	1	7/6/2022 2:57:00 PM	68332
Surr: 4-Terphenyl-d14	75.8	0	72.3-147		%Rec	1	7/6/2022 2:57:00 PM	68332

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-35
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 9:05:00 AM
Lab ID: 2206B30-004D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	21	0.16	0.30	*	mg/L	100	6/28/2022 7:30:13 PM	68353
Beryllium	0.0061	0.00088	0.0020	*	mg/L	1	6/27/2022 9:29:28 AM	68353
Cadmium	ND	0.0018	0.0020		mg/L	1	6/27/2022 9:29:28 AM	68353
Chromium	0.057	0.0020	0.0060		mg/L	1	6/27/2022 9:29:28 AM	68353
Cobalt	0.053	0.0035	0.0060		mg/L	1	6/27/2022 9:29:28 AM	68353
Nickel	0.066	0.0053	0.010		mg/L	1	6/27/2022 9:29:28 AM	68353
Silver	ND	0.0018	0.0050		mg/L	1	6/27/2022 9:29:28 AM	68353
Vanadium	0.16	0.0035	0.050		mg/L	1	6/27/2022 9:29:28 AM	68353
Zinc	0.15	0.0039	0.010		mg/L	1	6/27/2022 9:29:28 AM	68353
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	6/27/2022 10:55:21 AM	68353
Arsenic	0.029	0.00063	0.0050	*	mg/L	5	6/27/2022 10:55:21 AM	68353
Lead	0.12	0.00031	0.0025	*	mg/L	5	6/27/2022 10:55:21 AM	68353
Selenium	0.018	0.0019	0.0050		mg/L	5	6/27/2022 10:55:21 AM	68353
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00031	0.000091	0.00020		mg/L	1	6/24/2022 12:07:28 PM	68333

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-35
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 9:05:00 AM
Lab ID: 2206B30-004E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	3.9	0.0056	0.010	*	mg/L	5	6/23/2022 11:41:18 AM	A88979
Beryllium	ND	0.00088	0.0020		mg/L	1	6/23/2022 11:39:21 AM	A88979
Cadmium	ND	0.00098	0.0020		mg/L	1	6/23/2022 11:39:21 AM	A88979
Chromium	ND	0.0020	0.0060		mg/L	1	6/23/2022 11:39:21 AM	A88979
Cobalt	ND	0.0024	0.0060		mg/L	1	6/23/2022 11:39:21 AM	A88979
Nickel	ND	0.0033	0.010		mg/L	1	6/23/2022 11:39:21 AM	A88979
Silver	0.0028	0.0013	0.0050	J	mg/L	1	6/23/2022 11:39:21 AM	A88979
Vanadium	0.0029	0.0017	0.050	J	mg/L	1	6/23/2022 11:39:21 AM	A88979
Zinc	0.016	0.0032	0.010		mg/L	1	6/23/2022 11:39:21 AM	A88979
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	0.00076	0.00044	0.0010	J	mg/L	1	6/23/2022 11:41:00 AM	A88981
Arsenic	0.0013	0.00012	0.0010		mg/L	1	6/23/2022 11:41:00 AM	A88981
Lead	0.00021	0.000057	0.00050	J	mg/L	1	6/23/2022 11:41:00 AM	A88981
Selenium	ND	0.00034	0.0010		mg/L	1	6/23/2022 11:41:00 AM	A88981
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/24/2022 12:09:36 PM	68333

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-35
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 9:05:00 AM
Lab ID: 2206B30-004F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PAC**	
Cyanide	ND	0.00500	0.00500		mg/L	1	7/1/2022 1:21:00 PM	R89481

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 9:35:00 AM
Lab ID: 2206B30-005A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	0.034	0.0090	0.050	J	mg/L	1	6/24/2022 2:31:46 PM	A89029
Surr: BFB	96.8	0	70-130		%Rec	1	6/24/2022 2:31:46 PM	A89029
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	2.1	0.23	1.0		µg/L	1	6/27/2022 7:59:00 PM	W89041
Toluene	ND	0.20	1.0		µg/L	1	6/27/2022 7:59:00 PM	W89041
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/27/2022 7:59:00 PM	W89041
Methyl tert-butyl ether (MTBE)	1.8	0.39	1.0		µg/L	1	6/27/2022 7:59:00 PM	W89041
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/27/2022 7:59:00 PM	W89041
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/27/2022 7:59:00 PM	W89041
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/27/2022 7:59:00 PM	W89041
Acetone	5.4	2.5	10	J	µg/L	1	6/27/2022 7:59:00 PM	W89041
Bromomethane	ND	0.85	3.0		µg/L	1	6/27/2022 7:59:00 PM	W89041
2-Butanone	ND	2.0	10		µg/L	1	6/27/2022 7:59:00 PM	W89041
Carbon disulfide	ND	0.59	10		µg/L	1	6/27/2022 7:59:00 PM	W89041
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/27/2022 7:59:00 PM	W89041
Chloroform	ND	0.13	1.0		µg/L	1	6/27/2022 7:59:00 PM	W89041
Chloromethane	ND	0.41	3.0		µg/L	1	6/27/2022 7:59:00 PM	W89041
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/27/2022 7:59:00 PM	W89041
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/27/2022 7:59:00 PM	W89041
1,1-Dichloroethene	0.31	0.20	1.0	J	µg/L	1	6/27/2022 7:59:00 PM	W89041
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/27/2022 7:59:00 PM	W89041
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/27/2022 7:59:00 PM	W89041
Methylene Chloride	ND	0.50	3.0		µg/L	1	6/27/2022 7:59:00 PM	W89041
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/27/2022 7:59:00 PM	W89041
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/27/2022 7:59:00 PM	W89041
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	6/27/2022 7:59:00 PM	W89041
Styrene	ND	0.14	1.0		µg/L	1	6/27/2022 7:59:00 PM	W89041
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/27/2022 7:59:00 PM	W89041
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/27/2022 7:59:00 PM	W89041
Trichloroethene (TCE)	0.47	0.20	1.0	J	µg/L	1	6/27/2022 7:59:00 PM	W89041
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/27/2022 7:59:00 PM	W89041
Xylenes, Total	ND	0.37	1.5		µg/L	1	6/27/2022 7:59:00 PM	W89041
Surr: 1,2-Dichloroethane-d4	95.8	0	70-130		%Rec	1	6/27/2022 7:59:00 PM	W89041
Surr: 4-Bromofluorobenzene	96.6	0	70-130		%Rec	1	6/27/2022 7:59:00 PM	W89041
Surr: Dibromofluoromethane	99.7	0	70-130		%Rec	1	6/27/2022 7:59:00 PM	W89041
Surr: Toluene-d8	107	0	70-130		%Rec	1	6/27/2022 7:59:00 PM	W89041

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 9:35:00 AM
Lab ID: 2206B30-005B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	6/24/2022 6:50:25 AM	68319

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 9:35:00 AM
Lab ID: 2206B30-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.22	0.016	0.064		mg/L	1	7/5/2022 5:56:23 PM	68348
Motor Oil Range Organics (MRO)	0.24	0.052	0.080		mg/L	1	7/5/2022 5:56:23 PM	68348
Surr: DNOP	91.2	0	42.2-138		%Rec	1	7/5/2022 5:56:23 PM	68348
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	7/7/2022 3:36:50 PM	68332
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	7/7/2022 3:36:50 PM	68332
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	7/7/2022 3:36:50 PM	68332
Di-n-octyl phthalate	ND	12	20		µg/L	1	7/7/2022 3:36:50 PM	68332
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	7/7/2022 3:36:50 PM	68332
Diethyl phthalate	ND	6.0	10		µg/L	1	7/7/2022 3:36:50 PM	68332
Dimethyl phthalate	ND	6.0	10		µg/L	1	7/7/2022 3:36:50 PM	68332
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	7/7/2022 3:36:50 PM	68332
2,4-Dinitrophenol	ND	16	20		µg/L	1	7/7/2022 3:36:50 PM	68332
2-Methylphenol	ND	5.0	10		µg/L	1	7/7/2022 3:36:50 PM	68332
3+4-Methylphenol	ND	5.1	10		µg/L	1	7/7/2022 3:36:50 PM	68332
Phenol	ND	18	20		µg/L	1	7/7/2022 3:36:50 PM	68332
Pyridine	ND	14	40		µg/L	1	7/7/2022 3:36:50 PM	68332
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	7/7/2022 3:36:50 PM	68332
Surr: 2-Fluorophenol	40.5	0	29.4-87.7		%Rec	1	7/7/2022 3:36:50 PM	68332
Surr: Phenol-d5	30.0	0	28.5-64.7		%Rec	1	7/7/2022 3:36:50 PM	68332
Surr: 2,4,6-Tribromophenol	61.8	0	18.6-129		%Rec	1	7/7/2022 3:36:50 PM	68332
Surr: Nitrobenzene-d5	63.9	0	36.9-103		%Rec	1	7/7/2022 3:36:50 PM	68332
Surr: 2-Fluorobiphenyl	58.3	0	38.1-99.9		%Rec	1	7/7/2022 3:36:50 PM	68332
Surr: 4-Terphenyl-d14	86.6	0	48-155		%Rec	1	7/7/2022 3:36:50 PM	68332
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	3.6	0.11	1.0		µg/L	1	7/6/2022 3:41:00 PM	68332
Naphthalene	ND	0.20	0.30		µg/L	1	7/6/2022 3:41:00 PM	68332
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	7/6/2022 3:41:00 PM	68332
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	7/6/2022 3:41:00 PM	68332
Acenaphthene	ND	0.14	0.30		µg/L	1	7/6/2022 3:41:00 PM	68332
Fluorene	ND	0.095	0.30		µg/L	1	7/6/2022 3:41:00 PM	68332
Phenanthrene	ND	0.16	0.30		µg/L	1	7/6/2022 3:41:00 PM	68332
Anthracene	ND	0.14	0.30		µg/L	1	7/6/2022 3:41:00 PM	68332
Fluoranthene	ND	0.14	0.30		µg/L	1	7/6/2022 3:41:00 PM	68332
Pyrene	ND	0.32	1.0		µg/L	1	7/6/2022 3:41:00 PM	68332
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	7/6/2022 3:41:00 PM	68332
Chrysene	ND	0.25	0.30		µg/L	1	7/6/2022 3:41:00 PM	68332
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	7/6/2022 3:41:00 PM	68332
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	7/6/2022 3:41:00 PM	68332

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 9:35:00 AM
Lab ID: 2206B30-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	67.3	0	31.6-100		%Rec	1	7/6/2022 3:41:00 PM	68332
Surr: 2-Fluorobiphenyl	59.4	0	26.7-90.1		%Rec	1	7/6/2022 3:41:00 PM	68332
Surr: 4-Terphenyl-d14	89.6	0	72.3-147		%Rec	1	7/6/2022 3:41:00 PM	68332

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 9:35:00 AM
Lab ID: 2206B30-005D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	0.66	0.0016	0.0030		mg/L	1	6/27/2022 9:35:56 AM	68353
Beryllium	ND	0.00088	0.0020		mg/L	1	6/27/2022 9:35:56 AM	68353
Cadmium	ND	0.0018	0.0020		mg/L	1	6/27/2022 9:35:56 AM	68353
Chromium	0.011	0.0020	0.0060		mg/L	1	6/27/2022 9:35:56 AM	68353
Cobalt	0.0097	0.0035	0.0060		mg/L	1	6/27/2022 9:35:56 AM	68353
Nickel	0.011	0.0053	0.010		mg/L	1	6/27/2022 9:35:56 AM	68353
Silver	ND	0.0018	0.0050		mg/L	1	6/27/2022 9:35:56 AM	68353
Vanadium	0.026	0.0035	0.050	J	mg/L	1	6/27/2022 9:35:56 AM	68353
Zinc	0.074	0.0039	0.010		mg/L	1	6/27/2022 9:35:56 AM	68353
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/27/2022 11:02:41 AM	68353
Arsenic	0.0070	0.00013	0.0010		mg/L	1	6/27/2022 11:02:41 AM	68353
Lead	0.014	0.000061	0.00050		mg/L	1	6/27/2022 11:02:41 AM	68353
Selenium	0.0035	0.00037	0.0010		mg/L	1	6/27/2022 11:02:41 AM	68353
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/24/2022 12:11:43 PM	68333

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 9:35:00 AM
Lab ID: 2206B30-005E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.044	0.0011	0.0020		mg/L	1	6/23/2022 11:50:14 AM	A88979
Beryllium	ND	0.00088	0.0020		mg/L	1	6/23/2022 11:50:14 AM	A88979
Cadmium	ND	0.00098	0.0020		mg/L	1	6/23/2022 11:50:14 AM	A88979
Chromium	ND	0.0020	0.0060		mg/L	1	6/23/2022 11:50:14 AM	A88979
Cobalt	ND	0.0024	0.0060		mg/L	1	6/23/2022 11:50:14 AM	A88979
Nickel	0.0059	0.0033	0.010	J	mg/L	1	6/23/2022 11:50:14 AM	A88979
Silver	0.0027	0.0013	0.0050	J	mg/L	1	6/23/2022 11:50:14 AM	A88979
Vanadium	0.0039	0.0017	0.050	J	mg/L	1	6/23/2022 11:50:14 AM	A88979
Zinc	0.012	0.0032	0.010		mg/L	1	6/23/2022 11:50:14 AM	A88979
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/23/2022 11:49:05 AM	A88981
Arsenic	0.0054	0.00012	0.0010		mg/L	1	6/23/2022 11:49:05 AM	A88981
Lead	0.00010	0.000057	0.00050	J	mg/L	1	6/23/2022 11:49:05 AM	A88981
Selenium	0.0018	0.00034	0.0010		mg/L	1	6/23/2022 11:49:05 AM	A88981
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/24/2022 12:13:51 PM	68333

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 9:35:00 AM
Lab ID: 2206B30-005F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PAC**	
Cyanide	ND	0.00500	0.00500		mg/L	1	7/1/2022 1:26:00 PM	R89481

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 10:00:00 AM
Lab ID: 2206B30-006A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	14	0.090	0.50		mg/L	10	6/24/2022 2:55:37 PM	A89029
Surr: BFB	121	0	70-130		%Rec	10	6/24/2022 2:55:37 PM	A89029
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	3500	23	100		µg/L	100	6/29/2022 4:32:44 PM	A89138
Toluene	96	2.0	10		µg/L	10	6/28/2022 11:59:57 AM	R89107
Ethylbenzene	300	2.1	10		µg/L	10	6/28/2022 11:59:57 AM	R89107
Methyl tert-butyl ether (MTBE)	19	3.9	10		µg/L	10	6/28/2022 11:59:57 AM	R89107
1,2,4-Trimethylbenzene	120	1.2	10		µg/L	10	6/28/2022 11:59:57 AM	R89107
1,3,5-Trimethylbenzene	25	1.8	10		µg/L	10	6/28/2022 11:59:57 AM	R89107
1,2-Dichloroethane (EDC)	ND	2.5	10		µg/L	10	6/28/2022 11:59:57 AM	R89107
Acetone	ND	25	100		µg/L	10	6/28/2022 11:59:57 AM	R89107
Bromomethane	ND	8.5	30		µg/L	10	6/28/2022 11:59:57 AM	R89107
2-Butanone	ND	20	100		µg/L	10	6/28/2022 11:59:57 AM	R89107
Carbon disulfide	ND	5.9	100		µg/L	10	6/28/2022 11:59:57 AM	R89107
Chlorobenzene	ND	1.6	10		µg/L	10	6/28/2022 11:59:57 AM	R89107
Chloroform	ND	1.3	10		µg/L	10	6/28/2022 11:59:57 AM	R89107
Chloromethane	ND	4.1	30		µg/L	10	6/28/2022 11:59:57 AM	R89107
cis-1,2-DCE	ND	3.9	10		µg/L	10	6/28/2022 11:59:57 AM	R89107
1,1-Dichloroethane	ND	2.7	10		µg/L	10	6/28/2022 11:59:57 AM	R89107
1,1-Dichloroethene	ND	2.0	10		µg/L	10	6/28/2022 11:59:57 AM	R89107
Isopropylbenzene	15	1.8	10		µg/L	10	6/28/2022 11:59:57 AM	R89107
4-Isopropyltoluene	ND	2.0	10		µg/L	10	6/28/2022 11:59:57 AM	R89107
Methylene Chloride	ND	5.0	30		µg/L	10	6/28/2022 11:59:57 AM	R89107
n-Butylbenzene	ND	2.5	30		µg/L	10	6/28/2022 11:59:57 AM	R89107
n-Propylbenzene	29	1.8	10		µg/L	10	6/28/2022 11:59:57 AM	R89107
sec-Butylbenzene	5.7	1.4	10	J	µg/L	10	6/28/2022 11:59:57 AM	R89107
Styrene	ND	1.4	10		µg/L	10	6/28/2022 11:59:57 AM	R89107
Tetrachloroethene (PCE)	ND	3.6	10		µg/L	10	6/28/2022 11:59:57 AM	R89107
1,1,1-Trichloroethane	ND	3.0	10		µg/L	10	6/28/2022 11:59:57 AM	R89107
Trichloroethene (TCE)	ND	2.0	10		µg/L	10	6/28/2022 11:59:57 AM	R89107
Vinyl chloride	21	3.2	10		µg/L	10	6/28/2022 11:59:57 AM	R89107
Xylenes, Total	580	3.7	15		µg/L	10	6/28/2022 11:59:57 AM	R89107
Surr: 1,2-Dichloroethane-d4	107	0	70-130		%Rec	10	6/28/2022 11:59:57 AM	R89107
Surr: 4-Bromofluorobenzene	99.4	0	70-130		%Rec	10	6/28/2022 11:59:57 AM	R89107
Surr: Dibromofluoromethane	103	0	70-130		%Rec	10	6/28/2022 11:59:57 AM	R89107
Surr: Toluene-d8	102	0	70-130		%Rec	10	6/28/2022 11:59:57 AM	R89107

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 10:00:00 AM
Lab ID: 2206B30-006B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	6/24/2022 7:35:38 AM	68319

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 10:00:00 AM
Lab ID: 2206B30-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	1.3	0.016	0.064		mg/L	1	7/5/2022 6:20:16 PM	68348
Motor Oil Range Organics (MRO)	0.82	0.052	0.080		mg/L	1	7/5/2022 6:20:16 PM	68348
Surr: DNOP	99.2	0	42.2-138		%Rec	1	7/5/2022 6:20:16 PM	68348
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	7/7/2022 4:20:00 PM	68332
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	7/7/2022 4:20:00 PM	68332
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	7/7/2022 4:20:00 PM	68332
Di-n-octyl phthalate	ND	12	20		µg/L	1	7/7/2022 4:20:00 PM	68332
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	7/7/2022 4:20:00 PM	68332
Diethyl phthalate	ND	6.0	10		µg/L	1	7/7/2022 4:20:00 PM	68332
Dimethyl phthalate	ND	6.0	10		µg/L	1	7/7/2022 4:20:00 PM	68332
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	7/7/2022 4:20:00 PM	68332
2,4-Dinitrophenol	ND	16	20		µg/L	1	7/7/2022 4:20:00 PM	68332
2-Methylphenol	ND	5.0	10		µg/L	1	7/7/2022 4:20:00 PM	68332
3+4-Methylphenol	ND	5.1	10		µg/L	1	7/7/2022 4:20:00 PM	68332
Phenol	28	18	20		µg/L	1	7/7/2022 4:20:00 PM	68332
Pyridine	ND	14	40		µg/L	1	7/7/2022 4:20:00 PM	68332
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	7/7/2022 4:20:00 PM	68332
Surr: 2-Fluorophenol	43.9	0	29.4-87.7		%Rec	1	7/7/2022 4:20:00 PM	68332
Surr: Phenol-d5	33.5	0	28.5-64.7		%Rec	1	7/7/2022 4:20:00 PM	68332
Surr: 2,4,6-Tribromophenol	53.2	0	18.6-129		%Rec	1	7/7/2022 4:20:00 PM	68332
Surr: Nitrobenzene-d5	56.5	0	36.9-103		%Rec	1	7/7/2022 4:20:00 PM	68332
Surr: 2-Fluorobiphenyl	50.2	0	38.1-99.9		%Rec	1	7/7/2022 4:20:00 PM	68332
Surr: 4-Terphenyl-d14	75.2	0	48-155		%Rec	1	7/7/2022 4:20:00 PM	68332
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	6.6	0.11	1.0		µg/L	1	7/6/2022 4:25:00 PM	68332
Naphthalene	14	0.20	0.30		µg/L	1	7/6/2022 4:25:00 PM	68332
1-Methylnaphthalene	5.4	0.15	0.30		µg/L	1	7/6/2022 4:25:00 PM	68332
2-Methylnaphthalene	5.1	0.14	0.30		µg/L	1	7/6/2022 4:25:00 PM	68332
Acenaphthene	0.44	0.14	0.30		µg/L	1	7/6/2022 4:25:00 PM	68332
Fluorene	1.1	0.095	0.30		µg/L	1	7/6/2022 4:25:00 PM	68332
Phenanthrene	0.38	0.16	0.30		µg/L	1	7/6/2022 4:25:00 PM	68332
Anthracene	ND	0.14	0.30		µg/L	1	7/6/2022 4:25:00 PM	68332
Fluoranthene	ND	0.14	0.30		µg/L	1	7/6/2022 4:25:00 PM	68332
Pyrene	ND	0.32	1.0		µg/L	1	7/6/2022 4:25:00 PM	68332
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	7/6/2022 4:25:00 PM	68332
Chrysene	ND	0.25	0.30		µg/L	1	7/6/2022 4:25:00 PM	68332
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	7/6/2022 4:25:00 PM	68332
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	7/6/2022 4:25:00 PM	68332

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 10:00:00 AM
Lab ID: 2206B30-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	58.8	0	31.6-100		%Rec	1	7/6/2022 4:25:00 PM	68332
Surr: 2-Fluorobiphenyl	52.0	0	26.7-90.1		%Rec	1	7/6/2022 4:25:00 PM	68332
Surr: 4-Terphenyl-d14	77.5	0	72.3-147		%Rec	1	7/6/2022 4:25:00 PM	68332

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 10:00:00 AM
Lab ID: 2206B30-006D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	3.9	0.0079	0.015	*	mg/L	5	6/28/2022 6:59:51 PM	68353
Beryllium	ND	0.00088	0.0020		mg/L	1	6/27/2022 9:37:22 AM	68353
Cadmium	ND	0.0018	0.0020		mg/L	1	6/27/2022 9:37:22 AM	68353
Chromium	ND	0.0020	0.0060		mg/L	1	6/27/2022 9:37:22 AM	68353
Cobalt	0.0049	0.0035	0.0060	J	mg/L	1	6/27/2022 9:37:22 AM	68353
Nickel	0.022	0.0053	0.010		mg/L	1	6/27/2022 9:37:22 AM	68353
Silver	ND	0.0018	0.0050		mg/L	1	6/27/2022 9:37:22 AM	68353
Vanadium	ND	0.0035	0.050		mg/L	1	6/27/2022 9:37:22 AM	68353
Zinc	0.020	0.0039	0.010		mg/L	1	6/27/2022 9:37:22 AM	68353
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/27/2022 11:05:08 AM	68353
Arsenic	0.013	0.00013	0.0010	*	mg/L	1	6/27/2022 11:05:08 AM	68353
Lead	0.0012	0.000061	0.00050		mg/L	1	6/27/2022 11:05:08 AM	68353
Selenium	0.00047	0.00037	0.0010	J	mg/L	1	6/27/2022 11:05:08 AM	68353
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/24/2022 12:20:15 PM	68333

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 10:00:00 AM
Lab ID: 2206B30-006E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	3.5	0.0056	0.010	*	mg/L	5	6/23/2022 11:56:43 AM	A88979
Beryllium	ND	0.00088	0.0020		mg/L	1	6/23/2022 11:54:44 AM	A88979
Cadmium	ND	0.00098	0.0020		mg/L	1	6/23/2022 11:54:44 AM	A88979
Chromium	ND	0.0020	0.0060		mg/L	1	6/23/2022 11:54:44 AM	A88979
Cobalt	ND	0.0024	0.0060		mg/L	1	6/23/2022 11:54:44 AM	A88979
Nickel	0.025	0.0033	0.010		mg/L	1	6/23/2022 11:54:44 AM	A88979
Silver	0.0029	0.0013	0.0050	J	mg/L	1	6/23/2022 11:54:44 AM	A88979
Vanadium	0.0030	0.0017	0.050	J	mg/L	1	6/23/2022 11:54:44 AM	A88979
Zinc	0.018	0.0032	0.010		mg/L	1	6/23/2022 11:54:44 AM	A88979
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/23/2022 11:51:46 AM	A88981
Arsenic	0.011	0.00061	0.0050	*	mg/L	5	6/23/2022 12:02:32 PM	A88981
Lead	ND	0.00028	0.0025		mg/L	5	6/23/2022 12:02:32 PM	A88981
Selenium	ND	0.0017	0.0050		mg/L	5	6/23/2022 12:02:32 PM	A88981
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/24/2022 12:22:22 PM	68333

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 10:00:00 AM
Lab ID: 2206B30-006F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PAC**	
Cyanide	ND	0.00500	0.00500		mg/L	1	7/1/2022 1:27:00 PM	R89481

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-16
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 10:20:00 AM
Lab ID: 2206B30-007A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	0.30	0.0090	0.050		mg/L	1	6/24/2022 3:19:21 PM	A89029
Surr: BFB	111	0	70-130		%Rec	1	6/24/2022 3:19:21 PM	A89029
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	66	0.23	1.0		µg/L	1	6/28/2022 12:28:28 PM	R89107
Toluene	ND	0.20	1.0		µg/L	1	6/28/2022 12:28:28 PM	R89107
Ethylbenzene	12	0.21	1.0		µg/L	1	6/28/2022 12:28:28 PM	R89107
Methyl tert-butyl ether (MTBE)	3.5	0.39	1.0		µg/L	1	6/28/2022 12:28:28 PM	R89107
1,2,4-Trimethylbenzene	6.5	0.12	1.0		µg/L	1	6/28/2022 12:28:28 PM	R89107
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/28/2022 12:28:28 PM	R89107
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/28/2022 12:28:28 PM	R89107
Acetone	4.0	2.5	10	J	µg/L	1	6/28/2022 12:28:28 PM	R89107
Bromomethane	ND	0.85	3.0		µg/L	1	6/28/2022 12:28:28 PM	R89107
2-Butanone	ND	2.0	10		µg/L	1	6/28/2022 12:28:28 PM	R89107
Carbon disulfide	ND	0.59	10		µg/L	1	6/28/2022 12:28:28 PM	R89107
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/28/2022 12:28:28 PM	R89107
Chloroform	ND	0.13	1.0		µg/L	1	6/28/2022 12:28:28 PM	R89107
Chloromethane	ND	0.41	3.0		µg/L	1	6/28/2022 12:28:28 PM	R89107
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/28/2022 12:28:28 PM	R89107
1,1-Dichloroethane	4.7	0.27	1.0		µg/L	1	6/28/2022 12:28:28 PM	R89107
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/28/2022 12:28:28 PM	R89107
Isopropylbenzene	0.48	0.18	1.0	J	µg/L	1	6/28/2022 12:28:28 PM	R89107
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/28/2022 12:28:28 PM	R89107
Methylene Chloride	ND	0.50	3.0		µg/L	1	6/28/2022 12:28:28 PM	R89107
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/28/2022 12:28:28 PM	R89107
n-Propylbenzene	1.1	0.18	1.0		µg/L	1	6/28/2022 12:28:28 PM	R89107
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	6/28/2022 12:28:28 PM	R89107
Styrene	ND	0.14	1.0		µg/L	1	6/28/2022 12:28:28 PM	R89107
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/28/2022 12:28:28 PM	R89107
1,1,1-Trichloroethane	0.95	0.30	1.0	J	µg/L	1	6/28/2022 12:28:28 PM	R89107
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/28/2022 12:28:28 PM	R89107
Vinyl chloride	0.93	0.32	1.0	J	µg/L	1	6/28/2022 12:28:28 PM	R89107
Xylenes, Total	2.2	0.37	1.5		µg/L	1	6/28/2022 12:28:28 PM	R89107
Surr: 1,2-Dichloroethane-d4	105	0	70-130		%Rec	1	6/28/2022 12:28:28 PM	R89107
Surr: 4-Bromofluorobenzene	99.8	0	70-130		%Rec	1	6/28/2022 12:28:28 PM	R89107
Surr: Dibromofluoromethane	104	0	70-130		%Rec	1	6/28/2022 12:28:28 PM	R89107
Surr: Toluene-d8	104	0	70-130		%Rec	1	6/28/2022 12:28:28 PM	R89107

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-16
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 10:20:00 AM
Lab ID: 2206B30-007B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	6/24/2022 8:05:49 AM	68319

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-16
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 10:20:00 AM
Lab ID: 2206B30-007C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	7/7/2022 5:03:05 PM	68332
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	7/7/2022 5:03:05 PM	68332
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	7/7/2022 5:03:05 PM	68332
Di-n-octyl phthalate	ND	12	20		µg/L	1	7/7/2022 5:03:05 PM	68332
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	7/7/2022 5:03:05 PM	68332
Diethyl phthalate	ND	6.0	10		µg/L	1	7/7/2022 5:03:05 PM	68332
Dimethyl phthalate	ND	6.0	10		µg/L	1	7/7/2022 5:03:05 PM	68332
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	7/7/2022 5:03:05 PM	68332
2,4-Dinitrophenol	ND	16	20		µg/L	1	7/7/2022 5:03:05 PM	68332
2-Methylphenol	ND	5.0	10		µg/L	1	7/7/2022 5:03:05 PM	68332
3+4-Methylphenol	ND	5.1	10		µg/L	1	7/7/2022 5:03:05 PM	68332
Phenol	ND	18	20		µg/L	1	7/7/2022 5:03:05 PM	68332
Pyridine	ND	14	40		µg/L	1	7/7/2022 5:03:05 PM	68332
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	7/7/2022 5:03:05 PM	68332
Surr: 2-Fluorophenol	48.9	0	29.4-87.7		%Rec	1	7/7/2022 5:03:05 PM	68332
Surr: Phenol-d5	36.5	0	28.5-64.7		%Rec	1	7/7/2022 5:03:05 PM	68332
Surr: 2,4,6-Tribromophenol	60.4	0	18.6-129		%Rec	1	7/7/2022 5:03:05 PM	68332
Surr: Nitrobenzene-d5	62.1	0	36.9-103		%Rec	1	7/7/2022 5:03:05 PM	68332
Surr: 2-Fluorobiphenyl	61.0	0	38.1-99.9		%Rec	1	7/7/2022 5:03:05 PM	68332
Surr: 4-Terphenyl-d14	74.7	0	48-155		%Rec	1	7/7/2022 5:03:05 PM	68332
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	1.4	0.11	1.0		µg/L	1	7/6/2022 5:08:00 PM	68332
Naphthalene	ND	0.20	0.30		µg/L	1	7/6/2022 5:08:00 PM	68332
1-Methylnaphthalene	0.16	0.15	0.30	J	µg/L	1	7/6/2022 5:08:00 PM	68332
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	7/6/2022 5:08:00 PM	68332
Acenaphthene	ND	0.14	0.30		µg/L	1	7/6/2022 5:08:00 PM	68332
Fluorene	ND	0.095	0.30		µg/L	1	7/6/2022 5:08:00 PM	68332
Phenanthrene	ND	0.16	0.30		µg/L	1	7/6/2022 5:08:00 PM	68332
Anthracene	ND	0.14	0.30		µg/L	1	7/6/2022 5:08:00 PM	68332
Fluoranthene	ND	0.14	0.30		µg/L	1	7/6/2022 5:08:00 PM	68332
Pyrene	ND	0.32	1.0		µg/L	1	7/6/2022 5:08:00 PM	68332
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	7/6/2022 5:08:00 PM	68332
Chrysene	ND	0.25	0.30		µg/L	1	7/6/2022 5:08:00 PM	68332
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	7/6/2022 5:08:00 PM	68332
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	7/6/2022 5:08:00 PM	68332
Surr: Nitrobenzene-d5	73.4	0	31.6-100		%Rec	1	7/6/2022 5:08:00 PM	68332
Surr: 2-Fluorobiphenyl	65.0	0	26.7-90.1		%Rec	1	7/6/2022 5:08:00 PM	68332
Surr: 4-Terphenyl-d14	80.9	0	72.3-147		%Rec	1	7/6/2022 5:08:00 PM	68332

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-16
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 10:20:00 AM
Lab ID: 2206B30-007D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	3.6	0.0079	0.015	*	mg/L	5	6/28/2022 7:01:59 PM	68353
Beryllium	0.0025	0.00088	0.0020		mg/L	1	6/27/2022 9:38:46 AM	68353
Cadmium	ND	0.0018	0.0020		mg/L	1	6/27/2022 9:38:46 AM	68353
Chromium	0.031	0.0020	0.0060		mg/L	1	6/27/2022 9:38:46 AM	68353
Cobalt	0.019	0.0035	0.0060		mg/L	1	6/27/2022 9:38:46 AM	68353
Nickel	0.032	0.0053	0.010		mg/L	1	6/27/2022 9:38:46 AM	68353
Silver	ND	0.0018	0.0050		mg/L	1	6/27/2022 9:38:46 AM	68353
Vanadium	0.053	0.0035	0.050		mg/L	1	6/27/2022 9:38:46 AM	68353
Zinc	0.37	0.0039	0.010		mg/L	1	6/27/2022 9:38:46 AM	68353
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/27/2022 11:07:34 AM	68353
Arsenic	0.0070	0.00013	0.0010		mg/L	1	6/27/2022 11:07:34 AM	68353
Lead	0.040	0.00031	0.0025	*	mg/L	5	6/27/2022 11:41:48 AM	68353
Selenium	0.0058	0.00037	0.0010		mg/L	1	6/27/2022 11:07:34 AM	68353
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00098	0.000091	0.00020		mg/L	1	6/24/2022 12:24:30 PM	68333

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-16
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 10:20:00 AM
Lab ID: 2206B30-007E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.21	0.0011	0.0020		mg/L	1	6/23/2022 11:58:53 AM	A88979
Beryllium	ND	0.00088	0.0020		mg/L	1	6/23/2022 11:58:53 AM	A88979
Cadmium	ND	0.00098	0.0020		mg/L	1	6/23/2022 11:58:53 AM	A88979
Chromium	ND	0.0020	0.0060		mg/L	1	6/23/2022 11:58:53 AM	A88979
Cobalt	ND	0.0024	0.0060		mg/L	1	6/23/2022 11:58:53 AM	A88979
Nickel	0.0054	0.0033	0.010	J	mg/L	1	6/23/2022 11:58:53 AM	A88979
Silver	ND	0.0013	0.0050		mg/L	1	6/23/2022 11:58:53 AM	A88979
Vanadium	0.0038	0.0017	0.050	J	mg/L	1	6/23/2022 11:58:53 AM	A88979
Zinc	0.034	0.0032	0.010		mg/L	1	6/23/2022 11:58:53 AM	A88979
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	0.00070	0.00044	0.0010	J	mg/L	1	6/23/2022 11:54:27 AM	A88981
Arsenic	0.0014	0.00012	0.0010		mg/L	1	6/23/2022 11:54:27 AM	A88981
Lead	0.00017	0.000057	0.00050	J	mg/L	1	6/23/2022 11:54:27 AM	A88981
Selenium	0.00049	0.00034	0.0010	J	mg/L	1	6/23/2022 11:54:27 AM	A88981
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/24/2022 12:26:38 PM	68333

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-16
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 10:20:00 AM
Lab ID: 2206B30-007F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PAC**	
Cyanide	ND	0.00500	0.00500		mg/L	1	7/1/2022 1:28:00 PM	R89481

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB-6-21-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022 10:20:00 AM
Lab ID: 2206B30-008A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	6/28/2022 12:57:01 PM	R89107
Toluene	ND	0.20	1.0		µg/L	1	6/28/2022 12:57:01 PM	R89107
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/28/2022 12:57:01 PM	R89107
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	6/28/2022 12:57:01 PM	R89107
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/28/2022 12:57:01 PM	R89107
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/28/2022 12:57:01 PM	R89107
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/28/2022 12:57:01 PM	R89107
Acetone	3.6	2.5	10	J	µg/L	1	6/28/2022 12:57:01 PM	R89107
Bromomethane	ND	0.85	3.0		µg/L	1	6/28/2022 12:57:01 PM	R89107
2-Butanone	ND	2.0	10		µg/L	1	6/28/2022 12:57:01 PM	R89107
Carbon disulfide	ND	0.59	10		µg/L	1	6/28/2022 12:57:01 PM	R89107
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/28/2022 12:57:01 PM	R89107
Chloroform	ND	0.13	1.0		µg/L	1	6/28/2022 12:57:01 PM	R89107
Chloromethane	ND	0.41	3.0		µg/L	1	6/28/2022 12:57:01 PM	R89107
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/28/2022 12:57:01 PM	R89107
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/28/2022 12:57:01 PM	R89107
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/28/2022 12:57:01 PM	R89107
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/28/2022 12:57:01 PM	R89107
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/28/2022 12:57:01 PM	R89107
Methylene Chloride	ND	0.50	3.0		µg/L	1	6/28/2022 12:57:01 PM	R89107
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/28/2022 12:57:01 PM	R89107
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/28/2022 12:57:01 PM	R89107
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	6/28/2022 12:57:01 PM	R89107
Styrene	ND	0.14	1.0		µg/L	1	6/28/2022 12:57:01 PM	R89107
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/28/2022 12:57:01 PM	R89107
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/28/2022 12:57:01 PM	R89107
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/28/2022 12:57:01 PM	R89107
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/28/2022 12:57:01 PM	R89107
Xylenes, Total	ND	0.37	1.5		µg/L	1	6/28/2022 12:57:01 PM	R89107
Surr: 1,2-Dichloroethane-d4	115	0	70-130		%Rec	1	6/28/2022 12:57:01 PM	R89107
Surr: 4-Bromofluorobenzene	106	0	70-130		%Rec	1	6/28/2022 12:57:01 PM	R89107
Surr: Dibromofluoromethane	115	0	70-130		%Rec	1	6/28/2022 12:57:01 PM	R89107
Surr: Toluene-d8	102	0	70-130		%Rec	1	6/28/2022 12:57:01 PM	R89107

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-21-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022
Lab ID: 2206B30-009A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	6/24/2022 3:43:06 PM	A89029
Surr: BFB	99.2	0	70-130		%Rec	1	6/24/2022 3:43:06 PM	A89029
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	6/28/2022 1:25:35 PM	R89107
Toluene	ND	0.20	1.0		µg/L	1	6/28/2022 1:25:35 PM	R89107
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/28/2022 1:25:35 PM	R89107
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	6/28/2022 1:25:35 PM	R89107
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/28/2022 1:25:35 PM	R89107
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/28/2022 1:25:35 PM	R89107
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/28/2022 1:25:35 PM	R89107
Acetone	ND	2.5	10		µg/L	1	6/28/2022 1:25:35 PM	R89107
Bromomethane	ND	0.85	3.0		µg/L	1	6/28/2022 1:25:35 PM	R89107
2-Butanone	ND	2.0	10		µg/L	1	6/28/2022 1:25:35 PM	R89107
Carbon disulfide	ND	0.59	10		µg/L	1	6/28/2022 1:25:35 PM	R89107
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/28/2022 1:25:35 PM	R89107
Chloroform	ND	0.13	1.0		µg/L	1	6/28/2022 1:25:35 PM	R89107
Chloromethane	ND	0.41	3.0		µg/L	1	6/28/2022 1:25:35 PM	R89107
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/28/2022 1:25:35 PM	R89107
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/28/2022 1:25:35 PM	R89107
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/28/2022 1:25:35 PM	R89107
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/28/2022 1:25:35 PM	R89107
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/28/2022 1:25:35 PM	R89107
Methylene Chloride	ND	0.50	3.0		µg/L	1	6/28/2022 1:25:35 PM	R89107
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/28/2022 1:25:35 PM	R89107
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/28/2022 1:25:35 PM	R89107
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	6/28/2022 1:25:35 PM	R89107
Styrene	ND	0.14	1.0		µg/L	1	6/28/2022 1:25:35 PM	R89107
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/28/2022 1:25:35 PM	R89107
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/28/2022 1:25:35 PM	R89107
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/28/2022 1:25:35 PM	R89107
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/28/2022 1:25:35 PM	R89107
Xylenes, Total	ND	0.37	1.5		µg/L	1	6/28/2022 1:25:35 PM	R89107
Surr: 1,2-Dichloroethane-d4	114	0	70-130		%Rec	1	6/28/2022 1:25:35 PM	R89107
Surr: 4-Bromofluorobenzene	107	0	70-130		%Rec	1	6/28/2022 1:25:35 PM	R89107
Surr: Dibromofluoromethane	114	0	70-130		%Rec	1	6/28/2022 1:25:35 PM	R89107
Surr: Toluene-d8	106	0	70-130		%Rec	1	6/28/2022 1:25:35 PM	R89107

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-21-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022
Lab ID: 2206B30-009B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	6/24/2022 8:36:00 AM	68319

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-21-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022
Lab ID: 2206B30-009C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.20	0.016	0.064		mg/L	1	7/5/2022 6:44:12 PM	68348
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	7/5/2022 6:44:12 PM	68348
Surr: DNOP	104	0	42.2-138		%Rec	1	7/5/2022 6:44:12 PM	68348
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	7/7/2022 5:47:20 PM	68332
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	7/7/2022 5:47:20 PM	68332
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	7/7/2022 5:47:20 PM	68332
Di-n-octyl phthalate	ND	12	20		µg/L	1	7/7/2022 5:47:20 PM	68332
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	7/7/2022 5:47:20 PM	68332
Diethyl phthalate	ND	6.0	10		µg/L	1	7/7/2022 5:47:20 PM	68332
Dimethyl phthalate	ND	6.0	10		µg/L	1	7/7/2022 5:47:20 PM	68332
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	7/7/2022 5:47:20 PM	68332
2,4-Dinitrophenol	ND	16	20		µg/L	1	7/7/2022 5:47:20 PM	68332
2-Methylphenol	ND	5.0	10		µg/L	1	7/7/2022 5:47:20 PM	68332
3+4-Methylphenol	ND	5.1	10		µg/L	1	7/7/2022 5:47:20 PM	68332
Phenol	ND	18	20		µg/L	1	7/7/2022 5:47:20 PM	68332
Pyridine	ND	14	40		µg/L	1	7/7/2022 5:47:20 PM	68332
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	7/7/2022 5:47:20 PM	68332
Surr: 2-Fluorophenol	40.7	0	29.4-87.7		%Rec	1	7/7/2022 5:47:20 PM	68332
Surr: Phenol-d5	30.9	0	28.5-64.7		%Rec	1	7/7/2022 5:47:20 PM	68332
Surr: 2,4,6-Tribromophenol	49.1	0	18.6-129		%Rec	1	7/7/2022 5:47:20 PM	68332
Surr: Nitrobenzene-d5	53.3	0	36.9-103		%Rec	1	7/7/2022 5:47:20 PM	68332
Surr: 2-Fluorobiphenyl	48.3	0	38.1-99.9		%Rec	1	7/7/2022 5:47:20 PM	68332
Surr: 4-Terphenyl-d14	72.3	0	48-155		%Rec	1	7/7/2022 5:47:20 PM	68332
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	1.7	0.11	1.0		µg/L	1	7/6/2022 5:53:00 PM	68332
Naphthalene	ND	0.20	0.30		µg/L	1	7/6/2022 5:53:00 PM	68332
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	7/6/2022 5:53:00 PM	68332
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	7/6/2022 5:53:00 PM	68332
Acenaphthene	ND	0.14	0.30		µg/L	1	7/6/2022 5:53:00 PM	68332
Fluorene	ND	0.095	0.30		µg/L	1	7/6/2022 5:53:00 PM	68332
Phenanthrene	ND	0.16	0.30		µg/L	1	7/6/2022 5:53:00 PM	68332
Anthracene	ND	0.14	0.30		µg/L	1	7/6/2022 5:53:00 PM	68332
Fluoranthene	ND	0.14	0.30		µg/L	1	7/6/2022 5:53:00 PM	68332
Pyrene	ND	0.32	1.0		µg/L	1	7/6/2022 5:53:00 PM	68332
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	7/6/2022 5:53:00 PM	68332
Chrysene	ND	0.25	0.30		µg/L	1	7/6/2022 5:53:00 PM	68332
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	7/6/2022 5:53:00 PM	68332
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	7/6/2022 5:53:00 PM	68332

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-21-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022
Lab ID: 2206B30-009C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	62.0	0	31.6-100		%Rec	1	7/6/2022 5:53:00 PM	68332
Surr: 2-Fluorobiphenyl	54.6	0	26.7-90.1		%Rec	1	7/6/2022 5:53:00 PM	68332
Surr: 4-Terphenyl-d14	84.7	0	72.3-147		%Rec	1	7/6/2022 5:53:00 PM	68332

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-21-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022
Lab ID: 2206B30-009D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	0.080	0.0016	0.0030		mg/L	1	6/27/2022 9:40:11 AM	68353
Beryllium	ND	0.00088	0.0020		mg/L	1	6/27/2022 9:40:11 AM	68353
Cadmium	ND	0.0018	0.0020		mg/L	1	6/27/2022 9:40:11 AM	68353
Chromium	0.0023	0.0020	0.0060	J	mg/L	1	6/27/2022 9:40:11 AM	68353
Cobalt	ND	0.0035	0.0060		mg/L	1	6/27/2022 9:40:11 AM	68353
Nickel	ND	0.0053	0.010		mg/L	1	6/27/2022 9:40:11 AM	68353
Silver	ND	0.0018	0.0050		mg/L	1	6/27/2022 9:40:11 AM	68353
Vanadium	0.0044	0.0035	0.050	J	mg/L	1	6/27/2022 9:40:11 AM	68353
Zinc	0.0040	0.0039	0.010	J	mg/L	1	6/27/2022 9:40:11 AM	68353
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/27/2022 11:10:01 AM	68353
Arsenic	0.00078	0.00013	0.0010	J	mg/L	1	6/27/2022 11:10:01 AM	68353
Lead	0.0014	0.000061	0.00050		mg/L	1	6/27/2022 11:10:01 AM	68353
Selenium	0.00051	0.00037	0.0010	J	mg/L	1	6/27/2022 11:10:01 AM	68353
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00013	0.000091	0.00020	J	mg/L	1	6/24/2022 12:28:47 PM	68333

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-21-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022
Lab ID: 2206B30-009E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.037	0.0011	0.0020		mg/L	1	6/23/2022 12:11:03 PM	B88979
Beryllium	ND	0.00088	0.0020		mg/L	1	6/23/2022 12:11:03 PM	B88979
Cadmium	ND	0.00098	0.0020		mg/L	1	6/23/2022 12:11:03 PM	B88979
Chromium	ND	0.0020	0.0060		mg/L	1	6/23/2022 12:11:03 PM	B88979
Cobalt	ND	0.0024	0.0060		mg/L	1	6/23/2022 12:11:03 PM	B88979
Nickel	ND	0.0033	0.010		mg/L	1	6/23/2022 12:11:03 PM	B88979
Silver	0.0034	0.0013	0.0050	J	mg/L	1	6/23/2022 12:11:03 PM	B88979
Vanadium	0.0042	0.0017	0.050	J	mg/L	1	6/23/2022 12:11:03 PM	B88979
Zinc	0.0071	0.0032	0.010	J	mg/L	1	6/23/2022 12:11:03 PM	B88979
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/23/2022 11:57:09 AM	A88981
Arsenic	0.00062	0.00012	0.0010	J	mg/L	1	6/23/2022 11:57:09 AM	A88981
Lead	ND	0.000057	0.00050		mg/L	1	6/23/2022 11:57:09 AM	A88981
Selenium	ND	0.00034	0.0010		mg/L	1	6/23/2022 11:57:09 AM	A88981
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/24/2022 12:30:56 PM	68333

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-21-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/21/2022
Lab ID: 2206B30-009F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PAC**	
Cyanide	ND	0.00500	0.00500		mg/L	1	7/1/2022 1:29:00 PM	R89481

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 2nd Quarter
Collection Date:
Lab ID: 2206B30-010A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
Toluene	ND	0.20	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
Naphthalene	ND	0.50	2.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
Acetone	ND	2.5	10		µg/L	1	6/28/2022 1:54:10 PM	R89107
Bromobenzene	ND	0.28	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
Bromodichloromethane	ND	0.20	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
Bromoform	ND	0.31	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
Bromomethane	ND	0.85	3.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
2-Butanone	ND	2.0	10		µg/L	1	6/28/2022 1:54:10 PM	R89107
Carbon disulfide	ND	0.59	10		µg/L	1	6/28/2022 1:54:10 PM	R89107
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
Chloroethane	ND	0.38	2.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
Chloroform	ND	0.13	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
Chloromethane	ND	0.41	3.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
4-Chlorotoluene	ND	0.34	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
Dibromochloromethane	ND	0.28	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
Dibromomethane	ND	0.31	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
Dichlorodifluoromethane	ND	0.40	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
1,2-Dichloropropane	ND	0.20	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206B30**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 2nd Quarter
Collection Date:
Lab ID: 2206B30-010A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Hexachlorobutadiene	ND	0.56	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
2-Hexanone	ND	1.8	10		µg/L	1	6/28/2022 1:54:10 PM	R89107
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
4-Methyl-2-pentanone	ND	0.88	10		µg/L	1	6/28/2022 1:54:10 PM	R89107
Methylene Chloride	ND	0.50	3.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
Styrene	ND	0.14	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
trans-1,2-DCE	ND	0.19	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
1,2,3-Trichlorobenzene	ND	0.25	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
1,1,2-Trichloroethane	ND	0.20	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
Trichlorofluoromethane	ND	0.16	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/28/2022 1:54:10 PM	R89107
Xylenes, Total	ND	0.37	1.5		µg/L	1	6/28/2022 1:54:10 PM	R89107
Surr: 1,2-Dichloroethane-d4	114	0	70-130		%Rec	1	6/28/2022 1:54:10 PM	R89107
Surr: 4-Bromofluorobenzene	99.1	0	70-130		%Rec	1	6/28/2022 1:54:10 PM	R89107
Surr: Dibromofluoromethane	111	0	70-130		%Rec	1	6/28/2022 1:54:10 PM	R89107
Surr: Toluene-d8	102	0	70-130		%Rec	1	6/28/2022 1:54:10 PM	R89107

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

ANALYTICAL REPORT

July 05, 2022

Hall Environmental Analysis Laboratory

Sample Delivery Group: L1508211

Samples Received: 06/23/2022

Project Number:

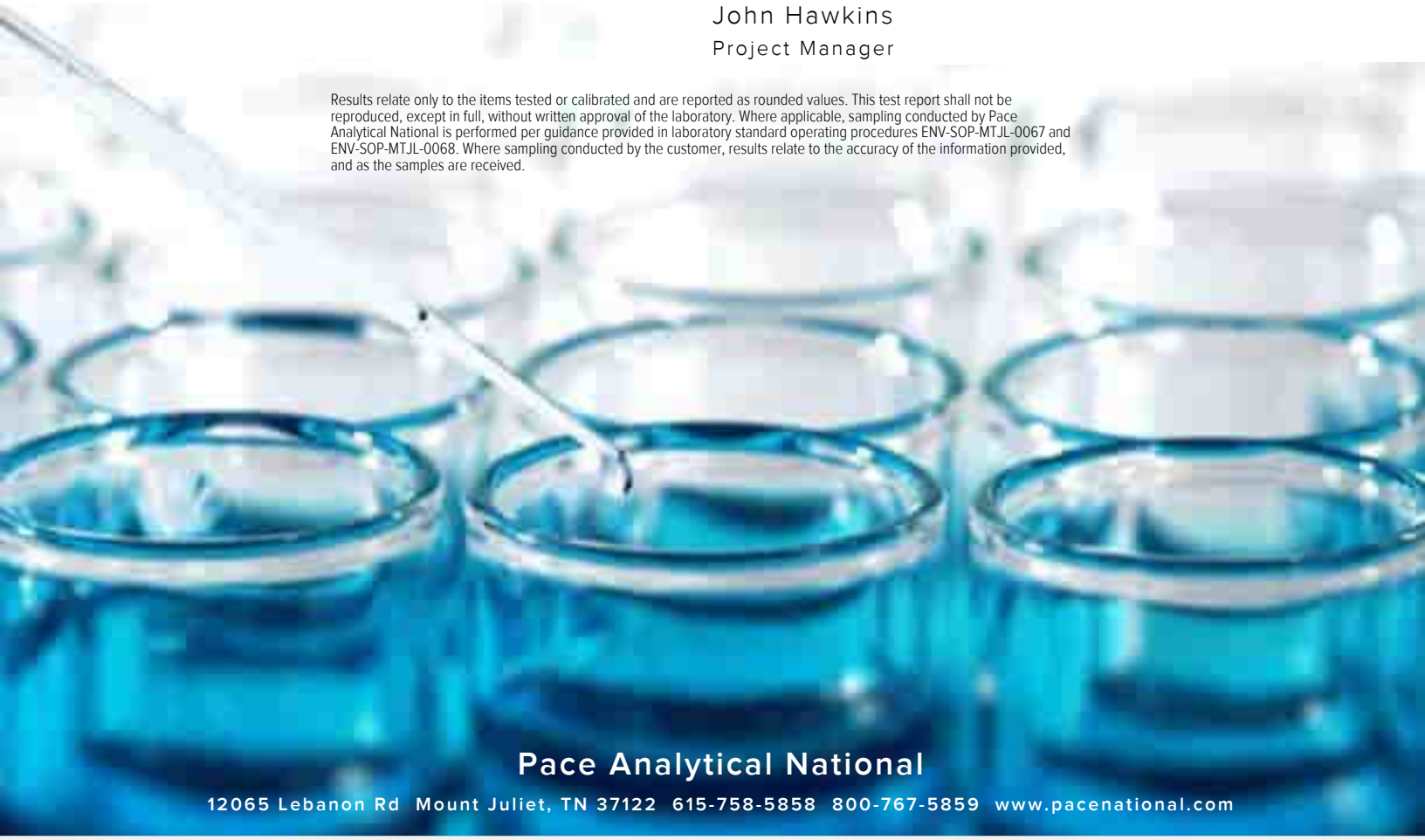
Description:

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By:

John Hawkins
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 4

Sr: Sample Results 5

2206B30-001F EB-6-21-22 L1508211-01 5

2206B30-002F MKTF-46 L1508211-02 6

2206B30-003F MKTF-18R L1508211-03 7

2206B30-004F MKTF-35 L1508211-04 8

2206B30-005F MKTF-38 L1508211-05 9

2206B30-006F MKTF-11 L1508211-06 10

2206B30-007F MKTF-16 L1508211-07 11

2206B30-009F DUP-6-21-22 L1508211-08 12

Qc: Quality Control Summary 13

Wet Chemistry by Method 4500CN E-2016 13

Gl: Glossary of Terms 14

Al: Accreditations & Locations 15

Sc: Sample Chain of Custody 16

SAMPLE SUMMARY

2206B30-001F EB-6-21-22 L1508211-01 WW

			Collected by	Collected date/time	Received date/time	
				06/21/22 08:00	06/23/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1886404	1	06/30/22 03:47	07/01/22 13:18	LDT	Mt. Juliet, TN

2206B30-002F MKTF-46 L1508211-02 WW

			Collected by	Collected date/time	Received date/time	
				06/21/22 08:20	06/23/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1886404	1	06/30/22 03:47	07/01/22 13:19	LDT	Mt. Juliet, TN

2206B30-003F MKTF-18R L1508211-03 WW

			Collected by	Collected date/time	Received date/time	
				06/21/22 08:45	06/23/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1886404	1	06/30/22 03:47	07/01/22 13:20	LDT	Mt. Juliet, TN

2206B30-004F MKTF-35 L1508211-04 WW

			Collected by	Collected date/time	Received date/time	
				06/21/22 09:05	06/23/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1886404	1	06/30/22 03:47	07/01/22 13:21	LDT	Mt. Juliet, TN

2206B30-005F MKTF-38 L1508211-05 WW

			Collected by	Collected date/time	Received date/time	
				06/21/22 09:35	06/23/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1886404	1	06/30/22 03:47	07/01/22 13:26	LDT	Mt. Juliet, TN

2206B30-006F MKTF-11 L1508211-06 WW

			Collected by	Collected date/time	Received date/time	
				06/21/22 10:00	06/23/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1886404	1	06/30/22 03:47	07/01/22 13:27	LDT	Mt. Juliet, TN

2206B30-007F MKTF-16 L1508211-07 WW

			Collected by	Collected date/time	Received date/time	
				06/21/22 10:20	06/23/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1886404	1	06/30/22 03:47	07/01/22 13:28	LDT	Mt. Juliet, TN

2206B30-009F DUP-6-21-22 L1508211-08 WW

			Collected by	Collected date/time	Received date/time	
				06/21/22 00:00	06/23/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1886404	1	06/30/22 03:47	07/01/22 13:29	LDT	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Sample Delivery Group (SDG) Narrative

Analysis was performed from an improper container for the following samples.

Lab Sample ID	Project Sample ID	Method
L1508211-03	2206B30-003F MKTF-18R	4500CN E-2016
L1508211-05	2206B30-005F MKTF-38	4500CN E-2016
L1508211-07	2206B30-007F MKTF-16	4500CN E-2016

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	07/01/2022 13:18	WG1886404

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	07/01/2022 13:19	WG1886404

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	07/01/2022 13:20	WG1886404

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	07/01/2022 13:21	WG1886404

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	07/01/2022 13:26	WG1886404

Received by OCD: 4/21/2023 9:21:57 AM

Collected date/time: 06/21/22 10:00
L1508211

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	07/01/2022 13:27	WG1886404

Released to Imaging: 4/21/2023 9:40:26 AM

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	07/01/2022 13:28	WG1886404

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	07/01/2022 13:29	WG1886404

Method Blank (MB)

(MB) R3810093-1 07/01/22 13:02

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1507725-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1507725-03 07/01/22 13:07 • (DUP) R3810093-3 07/01/22 13:08

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	25.1	P1	20

L1507860-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1507860-04 07/01/22 13:16 • (DUP) R3810093-6 07/01/22 13:17

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3810093-2 07/01/22 13:03

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.104	104	87.1-120	

L1508211-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1508211-04 07/01/22 13:21 • (MS) R3810093-7 07/01/22 13:22 • (MSD) R3810093-8 07/01/22 13:23

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0992	0.0942	99.2	94.2	1	90.0-110			5.17	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Received by OCD: 4/21/2023 9:21:57 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

G036

SUB CONTRATOR: Pace TN	COMPANY: PACE TN		PHONE: (800) 767-5859	FAX: (615) 758-5859	
ADDRESS: 12065 Lebanon Rd			ACCOUNT #:	EMAIL:	
CITY, STATE, ZIP: Mt. Juliet, TN 37122					

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS (L1508211)	
1	2206B30-001F	EB-6-21-22	500AMBHDP F-NAOH	Groundwater	6/21/2022 8:00:00 AM	1	Total Cyanide J and MDL	-01
2	2206B30-002F	MKTF-46	500AMBHDP F-NAOH	Groundwater	6/21/2022 8:20:00 AM	1	Total Cyanide J and MDL	-02
3	2206B30-003F	MKTF-18R	500AMBHDP F-NAOH	Groundwater	6/21/2022 8:45:00 AM	1	Total Cyanide J and MDL	-03
4	2206B30-004F	MKTF-35	500AMBHDP F-NAOH	Groundwater	6/21/2022 9:05:00 AM	1	Total Cyanide J and MDL	-04
5	2206B30-005F	MKTF-38	500AMBHDP F-NAOH	Groundwater	6/21/2022 9:35:00 AM	1	Total Cyanide J and MDL	-05
6	2206B30-006F	MKTF-11	500AMBHDP F-NAOH	Groundwater	6/21/2022 10:00:00 AM	1	Total Cyanide J and MDL	-06
7	2206B30-007F	MKTF-16	500AMBHDP F-NAOH	Groundwater	6/21/2022 10:20:00 AM	1	Total Cyanide J and MDL	-07
8	2206B30-009F	DUP-6-21-22	500AMBHDP F-NAOH	Groundwater	6/21/2022	1	Total Cyanide J and MDL	-08

Sample Receipt Checklist

COC Seal Present/Intact:	Y N	If Applicable	
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	Y N	Pres.Correct/Check:	Y N
Correct bottles used:	Y N		
Sufficient volume sent:	Y N		
RAD Screen <0.5 mR/hr:	Y N		

5755 8084 3860
1.1+0=1.1 JAVJ6

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By: CMC	Date: 6/22/2022	Time: 8:32 AM	Received By: M. Sanchez	Date: 6/22/22	Time: 0900
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☑ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY
Temp of samples ____ °C Attempt to Cool ? ____
Comments: ____

Released to Imaging: 4/21/2023 9:40:26 AM

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206B30**
15-Aug-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB-68353** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **68353** RunNo: **89052**
Prep Date: **6/24/2022** Analysis Date: **6/27/2022** SeqNo: **3162931** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LCSLL-68353** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **68353** RunNo: **89052**
Prep Date: **6/24/2022** Analysis Date: **6/27/2022** SeqNo: **3162932** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0016	0.0030	0.002000	0	80.1	50	150			J
Beryllium	0.0021	0.0020	0.002000	0	106	50	150			
Cadmium	0.0020	0.0020	0.002000	0	101	50	150			
Chromium	0.0059	0.0060	0.006000	0	97.9	50	150			J
Cobalt	0.0062	0.0060	0.006000	0	104	50	150			
Nickel	0.0027	0.010	0.005000	0	53.6	50	150			J
Silver	0.0050	0.0050	0.005000	0	100	50	150			
Vanadium	0.0098	0.050	0.01000	0	97.9	50	150			J
Zinc	0.011	0.010	0.01000	0	115	50	150			

Sample ID: **LCS-68353** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **68353** RunNo: **89052**
Prep Date: **6/24/2022** Analysis Date: **6/27/2022** SeqNo: **3162933** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.47	0.0030	0.5000	0	93.7	85	115			
Beryllium	0.50	0.0020	0.5000	0	100	85	115			
Cadmium	0.47	0.0020	0.5000	0	93.5	85	115			
Chromium	0.46	0.0060	0.5000	0	93.0	85	115			
Cobalt	0.46	0.0060	0.5000	0	92.0	85	115			
Nickel	0.45	0.010	0.5000	0	90.9	85	115			
Silver	0.096	0.0050	0.1000	0	96.1	85	115			
Vanadium	0.48	0.050	0.5000	0	95.3	85	115			
Zinc	0.47	0.010	0.5000	0	94.2	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206B30**

15-Aug-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B88979**	RunNo: **88979**
Prep Date:	Analysis Date: **6/23/2022**	SeqNo: **3159952** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A88979**	RunNo: **88979**
Prep Date:	Analysis Date: **6/23/2022**	SeqNo: **3159959** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A88979**	RunNo: **88979**
Prep Date:	Analysis Date: **6/23/2022**	SeqNo: **3159960** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0018	0.0020	0.002000	0	91.5	50	150			J
Beryllium	0.0020	0.0020	0.002000	0	99.3	50	150			J
Cadmium	0.0025	0.0020	0.002000	0	124	50	150			
Chromium	0.0064	0.0060	0.006000	0	106	50	150			
Cobalt	0.0058	0.0060	0.006000	0	97.3	50	150			J
Nickel	0.0062	0.010	0.005000	0	123	50	150			J
Silver	0.0045	0.0050	0.005000	0	89.2	50	150			J
Vanadium	0.0099	0.050	0.01000	0	99.1	50	150			J
Zinc	0.012	0.010	0.01000	0	117	50	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206B30**

15-Aug-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A88979**	RunNo: **88979**
Prep Date:	Analysis Date: **6/23/2022**	SeqNo: **3159961** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0020	0.5000	0	99.6	85	115			
Beryllium	0.51	0.0020	0.5000	0	102	85	115			
Cadmium	0.51	0.0020	0.5000	0	103	85	115			
Chromium	0.50	0.0060	0.5000	0	101	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.4	85	115			
Nickel	0.50	0.010	0.5000	0	99.3	85	115			
Silver	0.10	0.0050	0.1000	0	102	85	115			
Vanadium	0.51	0.050	0.5000	0	101	85	115			
Zinc	0.49	0.010	0.5000	0	98.6	85	115			

Sample ID: **LLLCS**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B88979**	RunNo: **88979**
Prep Date:	Analysis Date: **6/23/2022**	SeqNo: **3160008** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0017	0.0020	0.002000	0	87.2	50	150			J
Beryllium	0.0022	0.0020	0.002000	0	111	50	150			
Cadmium	0.0017	0.0020	0.002000	0	84.9	50	150			J
Chromium	0.0064	0.0060	0.006000	0	107	50	150			
Cobalt	0.0065	0.0060	0.006000	0	108	50	150			
Nickel	0.0046	0.010	0.005000	0	92.8	50	150			J
Silver	0.0046	0.0050	0.005000	0	91.7	50	150			J
Vanadium	0.012	0.050	0.01000	0	118	50	150			J
Zinc	0.011	0.010	0.01000	0	109	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B88979**	RunNo: **88979**
Prep Date:	Analysis Date: **6/23/2022**	SeqNo: **3160009** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	97.9	85	115			
Beryllium	0.51	0.0020	0.5000	0	103	85	115			
Cadmium	0.52	0.0020	0.5000	0	104	85	115			
Chromium	0.50	0.0060	0.5000	0	100	85	115			
Cobalt	0.50	0.0060	0.5000	0	100	85	115			
Nickel	0.50	0.010	0.5000	0	99.3	85	115			
Silver	0.096	0.0050	0.1000	0	95.5	85	115			
Vanadium	0.50	0.050	0.5000	0	101	85	115			
Zinc	0.50	0.010	0.5000	0	101	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206B30**

15-Aug-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **2206B30-009EMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **DUP-6-21-22**	Batch ID: **B88979**	RunNo: **88979**
Prep Date:	Analysis Date: **6/23/2022**	SeqNo: **3160014** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.52	0.0020	0.5000	0.03745	96.6	70	130			
Beryllium	0.53	0.0020	0.5000	0	105	70	130			
Cadmium	0.53	0.0020	0.5000	0	105	70	130			
Chromium	0.50	0.0060	0.5000	0	99.2	70	130			
Cobalt	0.49	0.0060	0.5000	0	98.9	70	130			
Nickel	0.49	0.010	0.5000	0	97.5	70	130			
Silver	0.096	0.0050	0.1000	0.003414	93.0	70	130			
Vanadium	0.51	0.050	0.5000	0.004179	101	70	130			
Zinc	0.50	0.010	0.5000	0.007073	99.4	70	130			

Sample ID: **2206B30-009EMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **DUP-6-21-22**	Batch ID: **B88979**	RunNo: **88979**
Prep Date:	Analysis Date: **6/23/2022**	SeqNo: **3160015** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.52	0.0020	0.5000	0.03745	96.2	70	130	0.371	20	
Beryllium	0.52	0.0020	0.5000	0	104	70	130	1.37	20	
Cadmium	0.52	0.0020	0.5000	0	104	70	130	0.859	20	
Chromium	0.49	0.0060	0.5000	0	99.0	70	130	0.209	20	
Cobalt	0.49	0.0060	0.5000	0	98.2	70	130	0.696	20	
Nickel	0.49	0.010	0.5000	0	97.2	70	130	0.352	20	
Silver	0.097	0.0050	0.1000	0.003414	93.5	70	130	0.483	20	
Vanadium	0.50	0.050	0.5000	0.004179	99.4	70	130	1.34	20	
Zinc	0.50	0.010	0.5000	0.007073	99.4	70	130	0.0642	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206B30**
15-Aug-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB-68353**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **68353**	RunNo: **89049**
Prep Date: **6/24/2022**	Analysis Date: **6/27/2022**	SeqNo: **3162820** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **MSLCSLL-68353**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **68353**	RunNo: **89049**
Prep Date: **6/24/2022**	Analysis Date: **6/27/2022**	SeqNo: **3162821** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00091	0.0010	0.001000	0	91.1	50	150			J
Arsenic	0.00098	0.0010	0.001000	0	98.1	50	150			J
Lead	0.00045	0.00050	0.0005000	0	89.3	50	150			J
Selenium	0.0013	0.0010	0.001000	0	131	50	150			

Sample ID: **MSLCS-68353**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **68353**	RunNo: **89049**
Prep Date: **6/24/2022**	Analysis Date: **6/27/2022**	SeqNo: **3162822** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	99.1	85	115			
Arsenic	0.025	0.0010	0.02500	0	98.1	85	115			
Lead	0.012	0.00050	0.01250	0	98.1	85	115			
Selenium	0.026	0.0010	0.02500	0	103	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206B30**

15-Aug-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A88981**	RunNo: **88981**
Prep Date:	Analysis Date: **6/23/2022**	SeqNo: **3160067** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A88981**	RunNo: **88981**
Prep Date:	Analysis Date: **6/23/2022**	SeqNo: **3160068** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0011	0.0010	0.001000	0	107	50	150			
Arsenic	0.0011	0.0010	0.001000	0	108	50	150			
Lead	0.00051	0.00050	0.0005000	0	102	50	150			
Selenium	0.00099	0.0010	0.001000	0	98.6	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A88981**	RunNo: **88981**
Prep Date:	Analysis Date: **6/23/2022**	SeqNo: **3160069** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	94.3	85	115			
Arsenic	0.024	0.0010	0.02500	0	97.4	85	115			
Lead	0.012	0.00050	0.01250	0	98.6	85	115			
Selenium	0.024	0.0010	0.02500	0	96.5	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206B30**

15-Aug-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB-68333**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW**	Batch ID: **68333**	RunNo: **89015**
Prep Date: **6/24/2022**	Analysis Date: **6/24/2022**	SeqNo: **3161261** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-68333**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC**	Batch ID: **68333**	RunNo: **89015**
Prep Date: **6/24/2022**	Analysis Date: **6/24/2022**	SeqNo: **3161262** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00017	0.00020	0.0001500	0	112	50	150			J

Sample ID: **LCS-68333**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW**	Batch ID: **68333**	RunNo: **89015**
Prep Date: **6/24/2022**	Analysis Date: **6/24/2022**	SeqNo: **3161263** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	102	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206B30**

15-Aug-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB-68319**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **68319**	RunNo: **89001**
Prep Date: **6/23/2022**	Analysis Date: **6/23/2022**	SeqNo: **3163530** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **MB-68319**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **68319**	RunNo: **89001**
Prep Date: **6/23/2022**	Analysis Date: **6/23/2022**	SeqNo: **3163531** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-68319**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW**	Batch ID: **68319**	RunNo: **89001**
Prep Date: **6/23/2022**	Analysis Date: **6/23/2022**	SeqNo: **3163532** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.088	0.010	0.1000	0	87.8	70	130			

Sample ID: **LCSD-68319**	SampType: **LCSD**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSS02**	Batch ID: **68319**	RunNo: **89001**
Prep Date: **6/23/2022**	Analysis Date: **6/23/2022**	SeqNo: **3163533** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	109	70	130	21.9	20	R

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206B30**

15-Aug-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB-68348**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **PBW**	Batch ID: **68348**	RunNo: **89239**
Prep Date: **6/24/2022**	Analysis Date: **7/5/2022**	SeqNo: **3173275** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.021	0.064								J
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.036		0.03750		95.6	42.2	138			

Sample ID: **LCS-68348**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSW**	Batch ID: **68348**	RunNo: **89239**
Prep Date: **6/24/2022**	Analysis Date: **7/5/2022**	SeqNo: **3173276** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.15	0.064	0.1875	0	81.2	31.7	75.4			S
Surr: DNOP	0.020		0.01875		108	42.2	138			

Sample ID: **LCSD-68348**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02**	Batch ID: **68348**	RunNo: **89239**
Prep Date: **6/24/2022**	Analysis Date: **7/5/2022**	SeqNo: **3173277** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.17	0.064	0.1875	0	89.2	31.7	75.4	9.38	20	S
Surr: DNOP	0.021		0.01875		112	42.2	138	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206B30**

15-Aug-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **A89029**	RunNo: **89029**
Prep Date:	Analysis Date: **6/24/2022**	SeqNo: **3161785** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	20		20.00		98.6	70	130			

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **A89029**	RunNo: **89029**
Prep Date:	Analysis Date: **6/24/2022**	SeqNo: **3161786** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.54	0.050	0.5000	0	107	80	120			
Surr: BFB	42		20.00		211	70	130			S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206B30**

15-Aug-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **W89041**	RunNo: **89041**
Prep Date:	Analysis Date: **6/27/2022**	SeqNo: **3163698** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	91.2	70	130			
Toluene	21	1.0	20.00	0	103	70	130			
Chlorobenzene	22	1.0	20.00	0	109	70	130			
1,1-Dichloroethene	17	1.0	20.00	0	83.9	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	91.2	70	130			
Surr: 1,2-Dichloroethane-d4	9.5		10.00		95.3	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		98.1	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **W89041**	RunNo: **89041**
Prep Date:	Analysis Date: **6/27/2022**	SeqNo: **3163699** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206B30**

15-Aug-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **W89041**	RunNo: **89041**
Prep Date:	Analysis Date: **6/27/2022**	SeqNo: **3163699** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.6		10.00		96.4	70	130			
Surr: 4-Bromofluorobenzene	9.5		10.00		95.5	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Sample ID: **2206b30-002ams**	SampType: **MS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **MKTF-46**	Batch ID: **W89041**	RunNo: **89041**
Prep Date:	Analysis Date: **6/27/2022**	SeqNo: **3164049** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	91.9	70	130			
Toluene	20	1.0	20.00	0	101	70	130			
Chlorobenzene	22	1.0	20.00	0	108	70	130			
1,1-Dichloroethene	15	1.0	20.00	0	77.5	70	130			
Trichloroethene (TCE)	17	1.0	20.00	0	87.2	70	130			
Surr: 1,2-Dichloroethane-d4	9.9		10.00		98.8	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		98.4	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Sample ID: **2206b30-002amsd**	SampType: **MSD**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **MKTF-46**	Batch ID: **W89041**	RunNo: **89041**
Prep Date:	Analysis Date: **6/27/2022**	SeqNo: **3164052** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	97.4	70	130	5.75	20	
Toluene	20	1.0	20.00	0	101	70	130	0.862	20	
Chlorobenzene	21	1.0	20.00	0	103	70	130	4.43	20	
1,1-Dichloroethene	15	1.0	20.00	0	76.5	70	130	1.30	20	
Trichloroethene (TCE)	19	1.0	20.00	0	96.7	70	130	10.3	20	
Surr: 1,2-Dichloroethane-d4	11		10.00		110	70	130	0	0	
Surr: 4-Bromofluorobenzene	9.2		10.00		92.4	70	130	0	0	
Surr: Dibromofluoromethane	9.8		10.00		98.0	70	130	0	0	
Surr: Toluene-d8	10		10.00		105	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206B30**

15-Aug-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R89107**	RunNo: **89107**
Prep Date:	Analysis Date: **6/28/2022**	SeqNo: **3166436** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	103	70	130			
Toluene	20	1.0	20.00	0	98.8	70	130			
Chlorobenzene	20	1.0	20.00	0	102	70	130			
1,1-Dichloroethene	20	1.0	20.00	0	100	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	98.3	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		106	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130			
Surr: Dibromofluoromethane	11		10.00		113	70	130			
Surr: Toluene-d8	9.9		10.00		98.7	70	130			

Sample ID: **100ng lcs2**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R89107**	RunNo: **89107**
Prep Date:	Analysis Date: **6/28/2022**	SeqNo: **3166437** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	103	70	130			
Toluene	20	1.0	20.00	0	98.3	70	130			
Chlorobenzene	20	1.0	20.00	0	101	70	130			
1,1-Dichloroethene	20	1.0	20.00	0	98.8	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	100	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		105	70	130			
Surr: Dibromofluoromethane	11		10.00		111	70	130			
Surr: Toluene-d8	10		10.00		99.8	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R89107**	RunNo: **89107**
Prep Date:	Analysis Date: **6/28/2022**	SeqNo: **3166470** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206B30**
15-Aug-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R89107**	RunNo: **89107**
Prep Date:	Analysis Date: **6/28/2022**	SeqNo: **3166470** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206B30**

15-Aug-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R89107**	RunNo: **89107**
Prep Date:	Analysis Date: **6/28/2022**	SeqNo: **3166470** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		114	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		107	70	130			
Surr: Dibromofluoromethane	11		10.00		110	70	130			
Surr: Toluene-d8	10		10.00		103	70	130			

Sample ID: **mb2**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R89107**	RunNo: **89107**
Prep Date:	Analysis Date: **6/29/2022**	SeqNo: **3166471** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206B30**
15-Aug-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **mb2**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R89107**	RunNo: **89107**
Prep Date:	Analysis Date: **6/29/2022**	SeqNo: **3166471** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206B30**
15-Aug-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **mb2** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW** Batch ID: **R89107** RunNo: **89107**
Prep Date: Analysis Date: **6/29/2022** SeqNo: **3166471** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	12		10.00		115	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		107	70	130			
Surr: Dibromofluoromethane	11		10.00		111	70	130			
Surr: Toluene-d8	10		10.00		104	70	130			

Sample ID: **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW** Batch ID: **A89138** RunNo: **89138**
Prep Date: Analysis Date: **6/29/2022** SeqNo: **3167495** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	95.3	70	130			
Surr: 1,2-Dichloroethane-d4	9.5		10.00		94.5	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		108	70	130			
Surr: Dibromofluoromethane	9.2		10.00		92.0	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW** Batch ID: **A89138** RunNo: **89138**
Prep Date: Analysis Date: **6/29/2022** SeqNo: **3167508** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Surr: 1,2-Dichloroethane-d4	9.4		10.00		93.6	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	8.8		10.00		87.7	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206B30**
15-Aug-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **mb-68332**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **68332**	RunNo: **89327**
Prep Date: **6/24/2022**	Analysis Date: **7/7/2022**	SeqNo: **3177340** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Anthracene	ND	10								
Benz(a)anthracene	ND	5.0								
Benzo(b)fluoranthene	ND	10								
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	10								
2,4-Dinitrophenol	ND	20								
Fluoranthene	ND	10								
Fluorene	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
1-Methylnaphthalene	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
Naphthalene	ND	5.0								
Phenanthrene	ND	10								
Phenol	ND	20								
Pyrene	ND	10								
Pyridine	ND	40								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	70		200.0		35.2	29.4	87.7			
Surr: Phenol-d5	54		200.0		26.9	28.5	64.7			S
Surr: 2,4,6-Tribromophenol	71		200.0		35.7	18.6	129			
Surr: Nitrobenzene-d5	46		100.0		46.4	36.9	103			
Surr: 2-Fluorobiphenyl	40		100.0		40.2	38.1	99.9			
Surr: 4-Terphenyl-d14	62		100.0		61.9	48	155			

Sample ID: **lcs-68332**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **68332**	RunNo: **89327**
Prep Date: **6/24/2022**	Analysis Date: **7/7/2022**	SeqNo: **3177341** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206B30**

15-Aug-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **lcs-68332**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **68332**	RunNo: **89327**
Prep Date: **6/24/2022**	Analysis Date: **7/7/2022**	SeqNo: **3177341** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	67	10	100.0	0	67.4	21.3	104			
1,4-Dichlorobenzene	61	5.0	100.0	0	60.8	15	89.8			
Phenol	92	20	200.0	0	45.8	17	61.1			
Pyrene	85	10	100.0	0	85.4	61	123			
Surr: 2-Fluorophenol	110		200.0		55.7	29.4	87.7			
Surr: Phenol-d5	85		200.0		42.3	28.5	64.7			
Surr: 2,4,6-Tribromophenol	130		200.0		63.2	18.6	129			
Surr: Nitrobenzene-d5	73		100.0		73.4	36.9	103			
Surr: 2-Fluorobiphenyl	68		100.0		68.5	38.1	99.9			
Surr: 4-Terphenyl-d14	94		100.0		94.0	48	155			

Sample ID: **lcsd-68332**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **68332**	RunNo: **89327**
Prep Date: **6/24/2022**	Analysis Date: **7/7/2022**	SeqNo: **3177342** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	55	10	100.0	0	54.9	21.3	104	20.4	45.3	
1,4-Dichlorobenzene	50	5.0	100.0	0	50.0	15	89.8	19.5	39.6	
Phenol	75	20	200.0	0	37.4	17	61.1	20.2	42.5	
Pyrene	78	10	100.0	0	77.9	61	123	9.22	11.8	
Surr: 2-Fluorophenol	91		200.0		45.3	29.4	87.7	0	0	
Surr: Phenol-d5	70		200.0		35.0	28.5	64.7	0	0	
Surr: 2,4,6-Tribromophenol	120		200.0		62.3	18.6	129	0	0	
Surr: Nitrobenzene-d5	57		100.0		57.5	36.9	103	0	0	
Surr: 2-Fluorobiphenyl	52		100.0		52.3	38.1	99.9	0	0	
Surr: 4-Terphenyl-d14	86		100.0		86.1	48	155	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206B30**

15-Aug-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **mb-68332**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **68332**	RunNo: **89275**
Prep Date: **6/24/2022**	Analysis Date: **7/6/2022**	SeqNo: **3174738** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.30								
1-Methylnaphthalene	ND	0.30								
2-Methylnaphthalene	ND	0.30								
Acenaphthene	ND	0.30								
Fluorene	ND	0.30								
Phenanthrene	ND	0.30								
Anthracene	ND	0.30								
Fluoranthene	ND	0.30								
Pyrene	ND	1.0								
Benz(a)anthracene	ND	0.30								
Chrysene	ND	0.30								
Benzo(b)fluoranthene	ND	0.30								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	50		100.0		50.4	31.6	100			
Surr: 2,4,6-Tribromophenol	73		200.0		36.5	22	101			
Surr: 2-Fluorobiphenyl	49		100.0		49.4	26.7	90.1			
Surr: 4-Terphenyl-d14	85		100.0		84.8	72.3	147			

Sample ID: **lcs-68332 lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **68332**	RunNo: **89275**
Prep Date: **6/24/2022**	Analysis Date: **7/6/2022**	SeqNo: **3174739** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	1.1	0.10	2.000	0	53.0	20.2	48.4			S
Naphthalene	1.5	0.30	2.000	0	77.0	21.3	79.9			
1-Methylnaphthalene	1.5	0.30	2.000	0	75.0	22.2	80.3			
2-Methylnaphthalene	1.5	0.30	2.000	0	74.0	20.6	80.1			
Acenaphthene	1.6	0.30	2.000	0	82.0	29.8	82.7			
Fluorene	1.7	0.30	2.000	0	84.0	33.3	86			
Phenanthrene	1.8	0.30	2.000	0	91.0	38.2	93.9			
Anthracene	1.8	0.30	2.000	0	89.0	41.1	95.6			
Fluoranthene	2.0	0.30	2.000	0	99.0	52.9	123			
Pyrene	1.7	1.0	2.000	0	85.0	51	113			
Benz(a)anthracene	1.9	0.30	2.000	0	97.0	51	147			
Chrysene	1.8	0.30	2.000	0	88.0	55.3	115			
Benzo(b)fluoranthene	1.8	0.30	2.000	0	88.0	44.4	136			
Indeno(1,2,3-cd)pyrene	1.8	0.30	2.000	0	90.0	31.4	165			
Surr: Nitrobenzene-d5	81		100.0		81.2	31.6	100			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206B30**

15-Aug-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **lcs-68332 lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **68332**	RunNo: **89275**
Prep Date: **6/24/2022**	Analysis Date: **7/6/2022**	SeqNo: **3174739** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	92		200.0		45.8	22	101			
Surr: 2-Fluorobiphenyl	75		100.0		75.4	26.7	90.1			
Surr: 4-Terphenyl-d14	95		100.0		95.0	72.3	147			

Sample ID: **lcsd-68332 lf**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02**	Batch ID: **68332**	RunNo: **89275**
Prep Date: **6/24/2022**	Analysis Date: **7/6/2022**	SeqNo: **3174740** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	1.1	1.0	2.000	0	55.0	20.2	48.4	3.70	30.1	S
Naphthalene	1.5	0.30	2.000	0	74.0	21.3	79.9	3.97	25.6	
1-Methylnaphthalene	1.4	0.30	2.000	0	72.0	22.2	80.3	4.08	25	
2-Methylnaphthalene	1.4	0.30	2.000	0	70.0	20.6	80.1	5.56	25	
Acenaphthene	1.7	0.30	2.000	0	83.0	29.8	82.7	1.21	27.8	S
Fluorene	1.7	0.30	2.000	0	86.0	33.3	86	2.35	26.4	
Phenanthrene	1.9	0.30	2.000	0	94.0	38.2	93.9	3.24	27.9	S
Anthracene	1.8	0.30	2.000	0	90.0	41.1	95.6	1.12	25.6	
Fluoranthene	2.0	0.30	2.000	0	98.0	52.9	123	1.02	22.8	
Pyrene	1.8	1.0	2.000	0	89.0	51	113	4.60	20	
Benz(a)anthracene	2.0	0.30	2.000	0	101	51	147	4.04	24.1	
Chrysene	1.9	0.30	2.000	0	94.0	55.3	115	6.59	20	
Benzo(b)fluoranthene	1.8	0.30	2.000	0	91.0	44.4	136	3.35	24.5	
Indeno(1,2,3-cd)pyrene	1.8	0.30	2.000	0	91.0	31.4	165	1.10	21.1	
Surr: Nitrobenzene-d5	84		100.0		83.6	31.6	100	0	0	
Surr: 2,4,6-Tribromophenol	98		200.0		49.2	22	101	0	0	
Surr: 2-Fluorobiphenyl	79		100.0		79.1	26.7	90.1	0	0	
Surr: 4-Terphenyl-d14	100		100.0		103	72.3	147	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **Marathon** Work Order Number: **2206B30** RcptNo: 1

Received By: **Juan Rojas** **6/22/2022 7:20:00 AM**

Completed By: **Cheyenne Cason** **6/22/2022 8:27:46 AM**

Reviewed By: KPG 6.22.22

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐ jn 6/22/22
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☐ No ☐ NA ☑
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: 16 8 (<2 or >12 unless noted)
Adjusted? yes
Checked by: jn 6/22/22

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____
By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: _____
Client Instructions: _____

16. Additional remarks: 0.5ml of HNO3 was added to sample 004D, 006D for pH<2. jn 6/22/22.
17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.7	Good	Yes			
2	2.2	Good	Yes			
3	0.4	Good	Yes			
4	5.3	Good	Yes			

Received by OCD: 4/21/2023 9:21:57 AM

Chain of Custody Record

Client:	Marathon Gallup Refinery
Mailing Address:	92 Giant Crossing Road Jamestown, NM,87347
Phone #:	808-640-1823
email or Fax#:	
QA/QC Package:	X Standard ☐ Level 4 (Full Validation)
Accreditation:	☐ Az Compliance ☐ NELAC ☐ Other
X EDD (Type)	

X Standard Rush

Project Name: **2022 GW Sampling 2nd Quarter**

Project #: **697-080-001**

Project Manager: Lesli Alexander/Mackensie Swift

Sampler:

On Ice: X Yes ☐ No

# of Coolers: 4

Cooler Temp(including CF): See Remarks

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2206B30	See Analyte List	8260B: VOC	8270C: SVOC	8270C SIM: PAH, 1,4 Dioxane	8015: TPH GRO/DRO/MRO	E200.7: Metals	E200.7: Dissolved Metals	E245.1 Mercury	E504.1: EDB	E335.4: Cyanide Subbed		537.1: PFAS	SM 5201B: BOD	410.4: COD	SM9223B E. Coli
6/21	8:00		EB-6-21-22	14		001	X	X	X	X	X	X	X	X	X	X					
6/21	8:20		MKTF-46	14		002	X	X	X	X	X	X	X	X	X	X					
6/21	8:45		MKTF-18R	14		003	X	X	X	X	X	X	X	X	X	X					
6/21	9:05		MKTF-35	14		004	X	X	X	X	X	X	X	X	X	X					
6/21	9:35		MKTF-38	14		005	X	X	X	X	X	X	X	X	X	X					
6/21	10:00		MKTF-11	14		006	X	X	X	X	X	X	X	X	X	X					
6/21	10:20		MKTF-16	12		007	X	X	X	X	X	X	X	X	X	X					
6/21	10:20		FB-6-21-22	3		008		X	X												
6/21	—		DUP-6-21-22	14		009	X	X	X	X	X	X	X	X	X	X					
			Trip Blank			010															

Date	Time	Relinquished by	Received by	Via	Date	Time
6/21	12:00	Hilario Trejo				
				courier	6/22/23	7:20

0.8-0.1=0.7
2.3-0.1=2.2
0.5-0.1=0.4
5.4-0.1=5.3

007 Run 8270 only low Volume

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Released to Imaging: 4/21/2023 9:40:26 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

July 14, 2022

Lesli Alexander

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX (505) 632-3911

RE: 2022 GW Sampling 2nd Quarter OrderNo.: 2206C26

Dear Lesli Alexander:

Hall Environmental Analysis Laboratory received 6 sample(s) on 6/23/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order: **2206C26**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-22-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/22/2022 8:15:00 AM
Lab ID: 2206C26-001A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	6/24/2022 4:06:48 PM	A89029
Surr: BFB	98.6	0	70-130		%Rec	1	6/24/2022 4:06:48 PM	A89029
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	6/30/2022 7:47:00 PM	R89156
Toluene	ND	0.20	1.0		µg/L	1	6/30/2022 7:47:00 PM	R89156
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/30/2022 7:47:00 PM	R89156
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	6/30/2022 7:47:00 PM	R89156
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/30/2022 7:47:00 PM	R89156
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/30/2022 7:47:00 PM	R89156
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/30/2022 7:47:00 PM	R89156
Acetone	5.3	2.5	10	J	µg/L	1	6/30/2022 7:47:00 PM	R89156
Bromomethane	ND	0.85	3.0		µg/L	1	6/30/2022 7:47:00 PM	R89156
2-Butanone	ND	2.0	10		µg/L	1	6/30/2022 7:47:00 PM	R89156
Carbon disulfide	ND	0.59	10		µg/L	1	6/30/2022 7:47:00 PM	R89156
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/30/2022 7:47:00 PM	R89156
Chloroform	ND	0.13	1.0		µg/L	1	6/30/2022 7:47:00 PM	R89156
Chloromethane	ND	0.41	3.0		µg/L	1	6/30/2022 7:47:00 PM	R89156
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/30/2022 7:47:00 PM	R89156
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/30/2022 7:47:00 PM	R89156
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/30/2022 7:47:00 PM	R89156
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/30/2022 7:47:00 PM	R89156
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/30/2022 7:47:00 PM	R89156
Methylene Chloride	ND	0.50	3.0		µg/L	1	6/30/2022 7:47:00 PM	R89156
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/30/2022 7:47:00 PM	R89156
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/30/2022 7:47:00 PM	R89156
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	6/30/2022 7:47:00 PM	R89156
Styrene	ND	0.14	1.0		µg/L	1	6/30/2022 7:47:00 PM	R89156
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/30/2022 7:47:00 PM	R89156
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/30/2022 7:47:00 PM	R89156
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/30/2022 7:47:00 PM	R89156
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/30/2022 7:47:00 PM	R89156
Xylenes, Total	ND	0.37	1.5		µg/L	1	6/30/2022 7:47:00 PM	R89156
Surr: 1,2-Dichloroethane-d4	109	0	70-130		%Rec	1	6/30/2022 7:47:00 PM	R89156
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	1	6/30/2022 7:47:00 PM	R89156
Surr: Dibromofluoromethane	109	0	70-130		%Rec	1	6/30/2022 7:47:00 PM	R89156
Surr: Toluene-d8	94.2	0	70-130		%Rec	1	6/30/2022 7:47:00 PM	R89156

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206C26**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-22-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/22/2022 8:15:00 AM
Lab ID: 2206C26-001B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0093		µg/L	1	6/24/2022 9:06:17 AM	68319

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206C26**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-22-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/22/2022 8:15:00 AM
Lab ID: 2206C26-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.023	0.016	0.064	J	mg/L	1	7/5/2022 7:08:09 PM	68348
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	7/5/2022 7:08:09 PM	68348
Surr: DNOP	103	0	42.2-138		%Rec	1	7/5/2022 7:08:09 PM	68348
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	7/7/2022 6:31:59 PM	68332
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	7/7/2022 6:31:59 PM	68332
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	7/7/2022 6:31:59 PM	68332
Di-n-octyl phthalate	ND	12	20		µg/L	1	7/7/2022 6:31:59 PM	68332
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	7/7/2022 6:31:59 PM	68332
Diethyl phthalate	ND	6.0	10		µg/L	1	7/7/2022 6:31:59 PM	68332
Dimethyl phthalate	ND	6.0	10		µg/L	1	7/7/2022 6:31:59 PM	68332
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	7/7/2022 6:31:59 PM	68332
2,4-Dinitrophenol	ND	16	20		µg/L	1	7/7/2022 6:31:59 PM	68332
2-Methylphenol	ND	5.0	10		µg/L	1	7/7/2022 6:31:59 PM	68332
3+4-Methylphenol	ND	5.1	10		µg/L	1	7/7/2022 6:31:59 PM	68332
Phenol	ND	18	20		µg/L	1	7/7/2022 6:31:59 PM	68332
Pyridine	ND	14	40		µg/L	1	7/7/2022 6:31:59 PM	68332
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	7/7/2022 6:31:59 PM	68332
Surr: 2-Fluorophenol	37.2	0	29.4-87.7		%Rec	1	7/7/2022 6:31:59 PM	68332
Surr: Phenol-d5	27.4	0	28.5-64.7	S	%Rec	1	7/7/2022 6:31:59 PM	68332
Surr: 2,4,6-Tribromophenol	49.6	0	18.6-129		%Rec	1	7/7/2022 6:31:59 PM	68332
Surr: Nitrobenzene-d5	47.2	0	36.9-103		%Rec	1	7/7/2022 6:31:59 PM	68332
Surr: 2-Fluorobiphenyl	42.7	0	38.1-99.9		%Rec	1	7/7/2022 6:31:59 PM	68332
Surr: 4-Terphenyl-d14	79.9	0	48-155		%Rec	1	7/7/2022 6:31:59 PM	68332
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	7/6/2022 6:43:00 PM	68332
Naphthalene	ND	0.20	0.30		µg/L	1	7/6/2022 6:43:00 PM	68332
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	7/6/2022 6:43:00 PM	68332
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	7/6/2022 6:43:00 PM	68332
Acenaphthene	ND	0.14	0.30		µg/L	1	7/6/2022 6:43:00 PM	68332
Fluorene	ND	0.095	0.30		µg/L	1	7/6/2022 6:43:00 PM	68332
Phenanthrene	ND	0.16	0.30		µg/L	1	7/6/2022 6:43:00 PM	68332
Anthracene	ND	0.14	0.30		µg/L	1	7/6/2022 6:43:00 PM	68332
Fluoranthene	ND	0.14	0.30		µg/L	1	7/6/2022 6:43:00 PM	68332
Pyrene	ND	0.32	1.0		µg/L	1	7/6/2022 6:43:00 PM	68332
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	7/6/2022 6:43:00 PM	68332
Chrysene	ND	0.25	0.30		µg/L	1	7/6/2022 6:43:00 PM	68332
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	7/6/2022 6:43:00 PM	68332
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	7/6/2022 6:43:00 PM	68332

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206C26**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-22-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/22/2022 8:15:00 AM
Lab ID: 2206C26-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	54.1	0	31.6-100		%Rec	1	7/6/2022 6:43:00 PM	68332
Surr: 2-Fluorobiphenyl	48.8	0	26.7-90.1		%Rec	1	7/6/2022 6:43:00 PM	68332
Surr: 4-Terphenyl-d14	92.7	0	72.3-147		%Rec	1	7/6/2022 6:43:00 PM	68332

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206C26**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-22-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/22/2022 8:15:00 AM
Lab ID: 2206C26-001D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	ND	0.0016	0.0030		mg/L	1	6/27/2022 9:41:38 AM	68353
Beryllium	ND	0.00088	0.0020		mg/L	1	6/27/2022 9:41:38 AM	68353
Cadmium	ND	0.0018	0.0020		mg/L	1	6/27/2022 9:41:38 AM	68353
Chromium	ND	0.0020	0.0060		mg/L	1	6/27/2022 9:41:38 AM	68353
Cobalt	ND	0.0035	0.0060		mg/L	1	6/27/2022 9:41:38 AM	68353
Nickel	ND	0.0053	0.010		mg/L	1	6/27/2022 9:41:38 AM	68353
Silver	ND	0.0018	0.0050		mg/L	1	6/27/2022 9:41:38 AM	68353
Vanadium	ND	0.0035	0.050		mg/L	1	6/27/2022 9:41:38 AM	68353
Zinc	ND	0.0039	0.010		mg/L	1	6/27/2022 9:41:38 AM	68353
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/27/2022 11:24:40 AM	68353
Arsenic	ND	0.00013	0.0010		mg/L	1	6/27/2022 11:24:40 AM	68353
Lead	ND	0.000061	0.00050		mg/L	1	6/27/2022 11:24:40 AM	68353
Selenium	ND	0.00037	0.0010		mg/L	1	6/27/2022 11:24:40 AM	68353
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/24/2022 12:33:06 PM	68334

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206C26**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-22-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/22/2022 8:15:00 AM
Lab ID: 2206C26-001E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	ND	0.0011	0.0020		mg/L	1	6/23/2022 12:53:35 PM	B88979
Beryllium	ND	0.00088	0.0020		mg/L	1	6/23/2022 12:53:35 PM	B88979
Cadmium	ND	0.00098	0.0020		mg/L	1	6/23/2022 12:53:35 PM	B88979
Chromium	ND	0.0020	0.0060		mg/L	1	6/23/2022 12:53:35 PM	B88979
Cobalt	ND	0.0024	0.0060		mg/L	1	6/23/2022 12:53:35 PM	B88979
Nickel	ND	0.0033	0.010		mg/L	1	6/23/2022 12:53:35 PM	B88979
Silver	ND	0.0013	0.0050		mg/L	1	6/23/2022 12:53:35 PM	B88979
Vanadium	0.0021	0.0017	0.050	J	mg/L	1	6/23/2022 12:53:35 PM	B88979
Zinc	0.0066	0.0032	0.010	J	mg/L	1	6/23/2022 12:53:35 PM	B88979
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/27/2022 2:25:20 PM	B89062
Arsenic	ND	0.00012	0.0010		mg/L	1	6/27/2022 2:25:20 PM	B89062
Lead	ND	0.000057	0.00050		mg/L	1	6/27/2022 2:25:20 PM	B89062
Selenium	ND	0.00034	0.0010		mg/L	1	6/27/2022 2:25:20 PM	B89062
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/24/2022 12:39:34 PM	68334

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206C26**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/22/2022 8:35:00 AM
Lab ID: 2206C26-002A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	6/24/2022 4:30:30 PM	A89029
Surr: BFB	99.2	0	70-130		%Rec	1	6/24/2022 4:30:30 PM	A89029
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	6/30/2022 8:11:00 PM	R89156
Toluene	ND	0.20	1.0		µg/L	1	6/30/2022 8:11:00 PM	R89156
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/30/2022 8:11:00 PM	R89156
Methyl tert-butyl ether (MTBE)	1.3	0.39	1.0		µg/L	1	6/30/2022 8:11:00 PM	R89156
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/30/2022 8:11:00 PM	R89156
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/30/2022 8:11:00 PM	R89156
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/30/2022 8:11:00 PM	R89156
Acetone	ND	2.5	10		µg/L	1	6/30/2022 8:11:00 PM	R89156
Bromomethane	ND	0.85	3.0		µg/L	1	6/30/2022 8:11:00 PM	R89156
2-Butanone	ND	2.0	10		µg/L	1	6/30/2022 8:11:00 PM	R89156
Carbon disulfide	ND	0.59	10		µg/L	1	6/30/2022 8:11:00 PM	R89156
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/30/2022 8:11:00 PM	R89156
Chloroform	ND	0.13	1.0		µg/L	1	6/30/2022 8:11:00 PM	R89156
Chloromethane	ND	0.41	3.0		µg/L	1	6/30/2022 8:11:00 PM	R89156
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/30/2022 8:11:00 PM	R89156
1,1-Dichloroethane	0.80	0.27	1.0	J	µg/L	1	6/30/2022 8:11:00 PM	R89156
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/30/2022 8:11:00 PM	R89156
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/30/2022 8:11:00 PM	R89156
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/30/2022 8:11:00 PM	R89156
Methylene Chloride	ND	0.50	3.0		µg/L	1	6/30/2022 8:11:00 PM	R89156
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/30/2022 8:11:00 PM	R89156
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/30/2022 8:11:00 PM	R89156
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	6/30/2022 8:11:00 PM	R89156
Styrene	ND	0.14	1.0		µg/L	1	6/30/2022 8:11:00 PM	R89156
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/30/2022 8:11:00 PM	R89156
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/30/2022 8:11:00 PM	R89156
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/30/2022 8:11:00 PM	R89156
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/30/2022 8:11:00 PM	R89156
Xylenes, Total	ND	0.37	1.5		µg/L	1	6/30/2022 8:11:00 PM	R89156
Surr: 1,2-Dichloroethane-d4	106	0	70-130		%Rec	1	6/30/2022 8:11:00 PM	R89156
Surr: 4-Bromofluorobenzene	106	0	70-130		%Rec	1	6/30/2022 8:11:00 PM	R89156
Surr: Dibromofluoromethane	107	0	70-130		%Rec	1	6/30/2022 8:11:00 PM	R89156
Surr: Toluene-d8	94.4	0	70-130		%Rec	1	6/30/2022 8:11:00 PM	R89156

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206C26**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/22/2022 8:35:00 AM
Lab ID: 2206C26-002B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	6/24/2022 9:36:26 AM	68319

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206C26**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/22/2022 8:35:00 AM
Lab ID: 2206C26-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.053	0.016	0.064	J	mg/L	1	7/5/2022 7:31:56 PM	68348
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	7/5/2022 7:31:56 PM	68348
Surr: DNOP	106	0	42.2-138		%Rec	1	7/5/2022 7:31:56 PM	68348
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	7/7/2022 7:15:58 PM	68332
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	7/7/2022 7:15:58 PM	68332
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	7/7/2022 7:15:58 PM	68332
Di-n-octyl phthalate	ND	12	20		µg/L	1	7/7/2022 7:15:58 PM	68332
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	7/7/2022 7:15:58 PM	68332
Diethyl phthalate	ND	6.0	10		µg/L	1	7/7/2022 7:15:58 PM	68332
Dimethyl phthalate	ND	6.0	10		µg/L	1	7/7/2022 7:15:58 PM	68332
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	7/7/2022 7:15:58 PM	68332
2,4-Dinitrophenol	ND	16	20		µg/L	1	7/7/2022 7:15:58 PM	68332
2-Methylphenol	ND	5.0	10		µg/L	1	7/7/2022 7:15:58 PM	68332
3+4-Methylphenol	ND	5.1	10		µg/L	1	7/7/2022 7:15:58 PM	68332
Phenol	ND	18	20		µg/L	1	7/7/2022 7:15:58 PM	68332
Pyridine	ND	14	40		µg/L	1	7/7/2022 7:15:58 PM	68332
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	7/7/2022 7:15:58 PM	68332
Surr: 2-Fluorophenol	43.3	0	29.4-87.7		%Rec	1	7/7/2022 7:15:58 PM	68332
Surr: Phenol-d5	33.2	0	28.5-64.7		%Rec	1	7/7/2022 7:15:58 PM	68332
Surr: 2,4,6-Tribromophenol	44.8	0	18.6-129		%Rec	1	7/7/2022 7:15:58 PM	68332
Surr: Nitrobenzene-d5	56.3	0	36.9-103		%Rec	1	7/7/2022 7:15:58 PM	68332
Surr: 2-Fluorobiphenyl	51.4	0	38.1-99.9		%Rec	1	7/7/2022 7:15:58 PM	68332
Surr: 4-Terphenyl-d14	75.3	0	48-155		%Rec	1	7/7/2022 7:15:58 PM	68332
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	11	0.11	1.0		µg/L	1	7/6/2022 7:36:00 PM	68332
Naphthalene	ND	0.20	0.30		µg/L	1	7/6/2022 7:36:00 PM	68332
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	7/6/2022 7:36:00 PM	68332
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	7/6/2022 7:36:00 PM	68332
Acenaphthene	ND	0.14	0.30		µg/L	1	7/6/2022 7:36:00 PM	68332
Fluorene	ND	0.095	0.30		µg/L	1	7/6/2022 7:36:00 PM	68332
Phenanthrene	ND	0.16	0.30		µg/L	1	7/6/2022 7:36:00 PM	68332
Anthracene	ND	0.14	0.30		µg/L	1	7/6/2022 7:36:00 PM	68332
Fluoranthene	ND	0.14	0.30		µg/L	1	7/6/2022 7:36:00 PM	68332
Pyrene	ND	0.32	1.0		µg/L	1	7/6/2022 7:36:00 PM	68332
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	7/6/2022 7:36:00 PM	68332
Chrysene	ND	0.25	0.30		µg/L	1	7/6/2022 7:36:00 PM	68332
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	7/6/2022 7:36:00 PM	68332
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	7/6/2022 7:36:00 PM	68332

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206C26**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/22/2022 8:35:00 AM
Lab ID: 2206C26-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	67.6	0	31.6-100		%Rec	1	7/6/2022 7:36:00 PM	68332
Surr: 2-Fluorobiphenyl	62.4	0	26.7-90.1		%Rec	1	7/6/2022 7:36:00 PM	68332
Surr: 4-Terphenyl-d14	92.1	0	72.3-147		%Rec	1	7/6/2022 7:36:00 PM	68332

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206C26**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/22/2022 8:35:00 AM
Lab ID: 2206C26-002D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	0.29	0.0016	0.0030		mg/L	1	6/27/2022 9:43:15 AM	68353
Beryllium	ND	0.00088	0.0020		mg/L	1	6/27/2022 9:43:15 AM	68353
Cadmium	ND	0.0018	0.0020		mg/L	1	6/27/2022 9:43:15 AM	68353
Chromium	0.0048	0.0020	0.0060	J	mg/L	1	6/27/2022 9:43:15 AM	68353
Cobalt	0.0057	0.0035	0.0060	J	mg/L	1	6/27/2022 9:43:15 AM	68353
Nickel	0.0093	0.0053	0.010	J	mg/L	1	6/27/2022 9:43:15 AM	68353
Silver	ND	0.0018	0.0050		mg/L	1	6/27/2022 9:43:15 AM	68353
Vanadium	0.027	0.0035	0.050	J	mg/L	1	6/27/2022 9:43:15 AM	68353
Zinc	0.024	0.0039	0.010		mg/L	1	6/27/2022 9:43:15 AM	68353
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	6/27/2022 11:49:10 AM	68353
Arsenic	0.0024	0.00063	0.0050	J	mg/L	5	6/27/2022 11:49:10 AM	68353
Lead	0.012	0.00031	0.0025		mg/L	5	6/27/2022 11:49:10 AM	68353
Selenium	ND	0.0019	0.0050		mg/L	5	6/27/2022 11:49:10 AM	68353
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/24/2022 12:45:58 PM	68334

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206C26**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/22/2022 8:35:00 AM
Lab ID: 2206C26-002E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.047	0.0011	0.0020		mg/L	1	6/23/2022 12:58:13 PM	B88979
Beryllium	ND	0.00088	0.0020		mg/L	1	6/23/2022 12:58:13 PM	B88979
Cadmium	ND	0.00098	0.0020		mg/L	1	6/23/2022 12:58:13 PM	B88979
Chromium	ND	0.0020	0.0060		mg/L	1	6/23/2022 12:58:13 PM	B88979
Cobalt	ND	0.0024	0.0060		mg/L	1	6/23/2022 12:58:13 PM	B88979
Nickel	0.013	0.0033	0.010		mg/L	1	6/23/2022 12:58:13 PM	B88979
Silver	0.0056	0.0013	0.0050		mg/L	1	6/23/2022 12:58:13 PM	B88979
Vanadium	0.013	0.0017	0.050	J	mg/L	1	6/23/2022 12:58:13 PM	B88979
Zinc	0.018	0.0032	0.010		mg/L	1	6/23/2022 12:58:13 PM	B88979
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	6/29/2022 2:28:26 PM	C89140
Arsenic	0.00092	0.00061	0.0050	J	mg/L	5	6/29/2022 2:28:26 PM	C89140
Lead	ND	0.00028	0.0025		mg/L	5	6/29/2022 2:28:26 PM	C89140
Selenium	ND	0.0017	0.0050		mg/L	5	6/29/2022 2:28:26 PM	C89140
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/24/2022 12:48:07 PM	68334

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206C26**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/22/2022 9:00:00 AM
Lab ID: 2206C26-003A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	0.36	0.0090	0.050		mg/L	1	6/24/2022 4:54:19 PM	A89029
Surr: BFB	99.8	0	70-130		%Rec	1	6/24/2022 4:54:19 PM	A89029
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	0.51	0.45	2.0	J	µg/L	2	6/30/2022 9:20:00 PM	R89156
Toluene	ND	0.40	2.0		µg/L	2	6/30/2022 9:20:00 PM	R89156
Ethylbenzene	ND	0.43	2.0		µg/L	2	6/30/2022 9:20:00 PM	R89156
Methyl tert-butyl ether (MTBE)	500	3.9	10		µg/L	10	7/1/2022 6:47:16 PM	A89211
1,2,4-Trimethylbenzene	ND	0.24	2.0		µg/L	2	6/30/2022 9:20:00 PM	R89156
1,3,5-Trimethylbenzene	ND	0.36	2.0		µg/L	2	6/30/2022 9:20:00 PM	R89156
1,2-Dichloroethane (EDC)	17	0.51	2.0		µg/L	2	6/30/2022 9:20:00 PM	R89156
Acetone	ND	5.0	20		µg/L	2	6/30/2022 9:20:00 PM	R89156
Bromomethane	ND	1.7	6.0		µg/L	2	6/30/2022 9:20:00 PM	R89156
2-Butanone	ND	4.1	20		µg/L	2	6/30/2022 9:20:00 PM	R89156
Carbon disulfide	ND	1.2	20		µg/L	2	6/30/2022 9:20:00 PM	R89156
Chlorobenzene	ND	0.31	2.0		µg/L	2	6/30/2022 9:20:00 PM	R89156
Chloroform	ND	0.27	2.0		µg/L	2	6/30/2022 9:20:00 PM	R89156
Chloromethane	ND	0.82	6.0		µg/L	2	6/30/2022 9:20:00 PM	R89156
cis-1,2-DCE	2.8	0.78	2.0		µg/L	2	6/30/2022 9:20:00 PM	R89156
1,1-Dichloroethane	38	0.55	2.0		µg/L	2	6/30/2022 9:20:00 PM	R89156
1,1-Dichloroethene	43	0.40	2.0		µg/L	2	6/30/2022 9:20:00 PM	R89156
Isopropylbenzene	ND	0.37	2.0		µg/L	2	6/30/2022 9:20:00 PM	R89156
4-Isopropyltoluene	ND	0.40	2.0		µg/L	2	6/30/2022 9:20:00 PM	R89156
Methylene Chloride	ND	1.0	6.0		µg/L	2	6/30/2022 9:20:00 PM	R89156
n-Butylbenzene	ND	0.51	6.0		µg/L	2	6/30/2022 9:20:00 PM	R89156
n-Propylbenzene	ND	0.36	2.0		µg/L	2	6/30/2022 9:20:00 PM	R89156
sec-Butylbenzene	ND	0.29	2.0		µg/L	2	6/30/2022 9:20:00 PM	R89156
Styrene	ND	0.27	2.0		µg/L	2	6/30/2022 9:20:00 PM	R89156
Tetrachloroethene (PCE)	ND	0.71	2.0		µg/L	2	6/30/2022 9:20:00 PM	R89156
1,1,1-Trichloroethane	2.0	0.60	2.0	J	µg/L	2	6/30/2022 9:20:00 PM	R89156
Trichloroethene (TCE)	4.7	0.41	2.0		µg/L	2	6/30/2022 9:20:00 PM	R89156
Vinyl chloride	ND	0.64	2.0		µg/L	2	6/30/2022 9:20:00 PM	R89156
Xylenes, Total	ND	0.74	3.0		µg/L	2	6/30/2022 9:20:00 PM	R89156
Surr: 1,2-Dichloroethane-d4	103	0	70-130		%Rec	2	6/30/2022 9:20:00 PM	R89156
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	2	6/30/2022 9:20:00 PM	R89156
Surr: Dibromofluoromethane	104	0	70-130		%Rec	2	6/30/2022 9:20:00 PM	R89156
Surr: Toluene-d8	92.3	0	70-130		%Rec	2	6/30/2022 9:20:00 PM	R89156

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206C26**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/22/2022 9:00:00 AM
Lab ID: 2206C26-003B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	6/24/2022 10:06:45 AM	68319

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206C26**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/22/2022 9:00:00 AM
Lab ID: 2206C26-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.21	0.016	0.064		mg/L	1	7/5/2022 8:19:43 PM	68348
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	7/5/2022 8:19:43 PM	68348
Surr: DNOP	102	0	42.2-138		%Rec	1	7/5/2022 8:19:43 PM	68348
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	7/8/2022 11:23:16 AM	68332
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	7/8/2022 11:23:16 AM	68332
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	7/8/2022 11:23:16 AM	68332
Di-n-octyl phthalate	ND	12	20		µg/L	1	7/8/2022 11:23:16 AM	68332
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	7/8/2022 11:23:16 AM	68332
Diethyl phthalate	ND	6.0	10		µg/L	1	7/8/2022 11:23:16 AM	68332
Dimethyl phthalate	ND	6.0	10		µg/L	1	7/8/2022 11:23:16 AM	68332
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	7/8/2022 11:23:16 AM	68332
2,4-Dinitrophenol	ND	16	20		µg/L	1	7/8/2022 11:23:16 AM	68332
2-Methylphenol	ND	5.0	10		µg/L	1	7/8/2022 11:23:16 AM	68332
3+4-Methylphenol	ND	5.1	10		µg/L	1	7/8/2022 11:23:16 AM	68332
Phenol	ND	18	20		µg/L	1	7/8/2022 11:23:16 AM	68332
Pyridine	ND	14	40		µg/L	1	7/8/2022 11:23:16 AM	68332
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	7/8/2022 11:23:16 AM	68332
Surr: 2-Fluorophenol	45.6	0	29.4-87.7		%Rec	1	7/8/2022 11:23:16 AM	68332
Surr: Phenol-d5	36.0	0	28.5-64.7		%Rec	1	7/8/2022 11:23:16 AM	68332
Surr: 2,4,6-Tribromophenol	48.2	0	18.6-129		%Rec	1	7/8/2022 11:23:16 AM	68332
Surr: Nitrobenzene-d5	59.2	0	36.9-103		%Rec	1	7/8/2022 11:23:16 AM	68332
Surr: 2-Fluorobiphenyl	50.9	0	38.1-99.9		%Rec	1	7/8/2022 11:23:16 AM	68332
Surr: 4-Terphenyl-d14	72.3	0	48-155		%Rec	1	7/8/2022 11:23:16 AM	68332
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	79	0.11	1.0	E	µg/L	1	7/6/2022 9:32:00 PM	68332
Naphthalene	ND	0.20	0.30		µg/L	1	7/6/2022 9:32:00 PM	68332
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	7/6/2022 9:32:00 PM	68332
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	7/6/2022 9:32:00 PM	68332
Acenaphthene	ND	0.14	0.30		µg/L	1	7/6/2022 9:32:00 PM	68332
Fluorene	ND	0.095	0.30		µg/L	1	7/6/2022 9:32:00 PM	68332
Phenanthrene	ND	0.16	0.30		µg/L	1	7/6/2022 9:32:00 PM	68332
Anthracene	ND	0.14	0.30		µg/L	1	7/6/2022 9:32:00 PM	68332
Fluoranthene	ND	0.14	0.30		µg/L	1	7/6/2022 9:32:00 PM	68332
Pyrene	ND	0.32	1.0		µg/L	1	7/6/2022 9:32:00 PM	68332
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	7/6/2022 9:32:00 PM	68332
Chrysene	ND	0.25	0.30		µg/L	1	7/6/2022 9:32:00 PM	68332
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	7/6/2022 9:32:00 PM	68332
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	7/6/2022 9:32:00 PM	68332

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206C26**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/22/2022 9:00:00 AM
Lab ID: 2206C26-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	62.2	0	31.6-100		%Rec	1	7/6/2022 9:32:00 PM	68332
Surr: 2-Fluorobiphenyl	57.4	0	26.7-90.1		%Rec	1	7/6/2022 9:32:00 PM	68332
Surr: 4-Terphenyl-d14	80.6	0	72.3-147		%Rec	1	7/6/2022 9:32:00 PM	68332

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order: **2206C26**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/22/2022 9:00:00 AM
Lab ID: 2206C26-003D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	0.45	0.0016	0.0030		mg/L	1	6/27/2022 9:44:39 AM	68353
Beryllium	0.0022	0.00088	0.0020		mg/L	1	6/27/2022 9:44:39 AM	68353
Cadmium	ND	0.0018	0.0020		mg/L	1	6/27/2022 9:44:39 AM	68353
Chromium	0.014	0.0020	0.0060		mg/L	1	6/27/2022 9:44:39 AM	68353
Cobalt	0.0077	0.0035	0.0060		mg/L	1	6/27/2022 9:44:39 AM	68353
Nickel	0.016	0.0053	0.010		mg/L	1	6/27/2022 9:44:39 AM	68353
Silver	ND	0.0018	0.0050		mg/L	1	6/27/2022 9:44:39 AM	68353
Vanadium	0.036	0.0035	0.050	J	mg/L	1	6/27/2022 9:44:39 AM	68353
Zinc	0.034	0.0039	0.010		mg/L	1	6/27/2022 9:44:39 AM	68353
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/27/2022 11:34:28 AM	68353
Arsenic	0.0027	0.00013	0.0010		mg/L	1	6/27/2022 11:34:28 AM	68353
Lead	0.015	0.000061	0.00050	*	mg/L	1	6/27/2022 11:34:28 AM	68353
Selenium	0.0022	0.00037	0.0010		mg/L	1	6/27/2022 11:34:28 AM	68353
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/24/2022 12:50:15 PM	68334

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206C26**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/22/2022 9:00:00 AM
Lab ID: 2206C26-003E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.11	0.0011	0.0020		mg/L	1	6/23/2022 1:02:40 PM	B88979
Beryllium	ND	0.00088	0.0020		mg/L	1	6/23/2022 1:02:40 PM	B88979
Cadmium	ND	0.00098	0.0020		mg/L	1	6/23/2022 1:02:40 PM	B88979
Chromium	ND	0.0020	0.0060		mg/L	1	6/23/2022 1:02:40 PM	B88979
Cobalt	ND	0.0024	0.0060		mg/L	1	6/23/2022 1:02:40 PM	B88979
Nickel	0.0058	0.0033	0.010	J	mg/L	1	6/23/2022 1:02:40 PM	B88979
Silver	0.0016	0.0013	0.0050	J	mg/L	1	6/23/2022 1:02:40 PM	B88979
Vanadium	0.0067	0.0017	0.050	J	mg/L	1	6/23/2022 1:02:40 PM	B88979
Zinc	0.0079	0.0032	0.010	J	mg/L	1	6/23/2022 1:02:40 PM	B88979
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/27/2022 2:30:43 PM	B89062
Arsenic	0.00064	0.00012	0.0010	J	mg/L	1	6/27/2022 2:30:43 PM	B89062
Lead	0.000088	0.000057	0.00050	J	mg/L	1	6/27/2022 2:30:43 PM	B89062
Selenium	ND	0.00034	0.0010		mg/L	1	6/27/2022 2:30:43 PM	B89062
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/24/2022 12:52:24 PM	68334

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206C26**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB-6-22-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/22/2022 9:00:00 AM
Lab ID: 2206C26-004A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	6/30/2022 9:43:00 PM	R89156
Toluene	ND	0.20	1.0		µg/L	1	6/30/2022 9:43:00 PM	R89156
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/30/2022 9:43:00 PM	R89156
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	6/30/2022 9:43:00 PM	R89156
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/30/2022 9:43:00 PM	R89156
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/30/2022 9:43:00 PM	R89156
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/30/2022 9:43:00 PM	R89156
Acetone	5.7	2.5	10	J	µg/L	1	6/30/2022 9:43:00 PM	R89156
Bromomethane	ND	0.85	3.0		µg/L	1	6/30/2022 9:43:00 PM	R89156
2-Butanone	ND	2.0	10		µg/L	1	6/30/2022 9:43:00 PM	R89156
Carbon disulfide	ND	0.59	10		µg/L	1	6/30/2022 9:43:00 PM	R89156
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/30/2022 9:43:00 PM	R89156
Chloroform	ND	0.13	1.0		µg/L	1	6/30/2022 9:43:00 PM	R89156
Chloromethane	ND	0.41	3.0		µg/L	1	6/30/2022 9:43:00 PM	R89156
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/30/2022 9:43:00 PM	R89156
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/30/2022 9:43:00 PM	R89156
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/30/2022 9:43:00 PM	R89156
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/30/2022 9:43:00 PM	R89156
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/30/2022 9:43:00 PM	R89156
Methylene Chloride	ND	0.50	3.0		µg/L	1	6/30/2022 9:43:00 PM	R89156
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/30/2022 9:43:00 PM	R89156
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/30/2022 9:43:00 PM	R89156
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	6/30/2022 9:43:00 PM	R89156
Styrene	ND	0.14	1.0		µg/L	1	6/30/2022 9:43:00 PM	R89156
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/30/2022 9:43:00 PM	R89156
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/30/2022 9:43:00 PM	R89156
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/30/2022 9:43:00 PM	R89156
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/30/2022 9:43:00 PM	R89156
Xylenes, Total	ND	0.37	1.5		µg/L	1	6/30/2022 9:43:00 PM	R89156
Surr: 1,2-Dichloroethane-d4	112	0	70-130		%Rec	1	6/30/2022 9:43:00 PM	R89156
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	1	6/30/2022 9:43:00 PM	R89156
Surr: Dibromofluoromethane	109	0	70-130		%Rec	1	6/30/2022 9:43:00 PM	R89156
Surr: Toluene-d8	92.9	0	70-130		%Rec	1	6/30/2022 9:43:00 PM	R89156

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206C26**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-22-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/22/2022
Lab ID: 2206C26-005A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	6/24/2022 5:18:00 PM	A89029
Surr: BFB	97.6	0	70-130		%Rec	1	6/24/2022 5:18:00 PM	A89029
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	7/1/2022 6:20:05 PM	A89211
Toluene	ND	0.20	1.0		µg/L	1	7/1/2022 6:20:05 PM	A89211
Ethylbenzene	ND	0.21	1.0		µg/L	1	7/1/2022 6:20:05 PM	A89211
Methyl tert-butyl ether (MTBE)	1.4	0.39	1.0		µg/L	1	7/1/2022 6:20:05 PM	A89211
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	7/1/2022 6:20:05 PM	A89211
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	7/1/2022 6:20:05 PM	A89211
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	7/1/2022 6:20:05 PM	A89211
Acetone	ND	2.5	10		µg/L	1	7/1/2022 6:20:05 PM	A89211
Bromomethane	ND	0.85	3.0		µg/L	1	7/1/2022 6:20:05 PM	A89211
2-Butanone	ND	2.0	10		µg/L	1	7/1/2022 6:20:05 PM	A89211
Carbon disulfide	ND	0.59	10		µg/L	1	7/1/2022 6:20:05 PM	A89211
Chlorobenzene	ND	0.16	1.0		µg/L	1	7/1/2022 6:20:05 PM	A89211
Chloroform	ND	0.13	1.0		µg/L	1	7/1/2022 6:20:05 PM	A89211
Chloromethane	ND	0.41	3.0		µg/L	1	7/1/2022 6:20:05 PM	A89211
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	7/1/2022 6:20:05 PM	A89211
1,1-Dichloroethane	0.97	0.27	1.0	J	µg/L	1	7/1/2022 6:20:05 PM	A89211
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	7/1/2022 6:20:05 PM	A89211
Isopropylbenzene	ND	0.18	1.0		µg/L	1	7/1/2022 6:20:05 PM	A89211
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	7/1/2022 6:20:05 PM	A89211
Methylene Chloride	ND	0.50	3.0		µg/L	1	7/1/2022 6:20:05 PM	A89211
n-Butylbenzene	ND	0.25	3.0		µg/L	1	7/1/2022 6:20:05 PM	A89211
n-Propylbenzene	ND	0.18	1.0		µg/L	1	7/1/2022 6:20:05 PM	A89211
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	7/1/2022 6:20:05 PM	A89211
Styrene	ND	0.14	1.0		µg/L	1	7/1/2022 6:20:05 PM	A89211
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	7/1/2022 6:20:05 PM	A89211
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	7/1/2022 6:20:05 PM	A89211
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	7/1/2022 6:20:05 PM	A89211
Vinyl chloride	ND	0.32	1.0		µg/L	1	7/1/2022 6:20:05 PM	A89211
Xylenes, Total	ND	0.37	1.5		µg/L	1	7/1/2022 6:20:05 PM	A89211
Surr: 1,2-Dichloroethane-d4	106	0	70-130		%Rec	1	7/1/2022 6:20:05 PM	A89211
Surr: 4-Bromofluorobenzene	106	0	70-130		%Rec	1	7/1/2022 6:20:05 PM	A89211
Surr: Dibromofluoromethane	111	0	70-130		%Rec	1	7/1/2022 6:20:05 PM	A89211
Surr: Toluene-d8	99.6	0	70-130		%Rec	1	7/1/2022 6:20:05 PM	A89211

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206C26**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-22-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/22/2022
Lab ID: 2206C26-005B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	6/24/2022 10:36:57 AM	68319

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206C26**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-22-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/22/2022
Lab ID: 2206C26-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.53	0.016	0.064		mg/L	1	7/5/2022 8:43:31 PM	68348
Motor Oil Range Organics (MRO)	1.1	0.052	0.080		mg/L	1	7/5/2022 8:43:31 PM	68348
Surr: DNOP	103	0	42.2-138		%Rec	1	7/5/2022 8:43:31 PM	68348
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	7/8/2022 12:05:17 PM	68332
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	7/8/2022 12:05:17 PM	68332
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	7/8/2022 12:05:17 PM	68332
Di-n-octyl phthalate	ND	12	20		µg/L	1	7/8/2022 12:05:17 PM	68332
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	7/8/2022 12:05:17 PM	68332
Diethyl phthalate	ND	6.0	10		µg/L	1	7/8/2022 12:05:17 PM	68332
Dimethyl phthalate	ND	6.0	10		µg/L	1	7/8/2022 12:05:17 PM	68332
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	7/8/2022 12:05:17 PM	68332
2,4-Dinitrophenol	ND	16	20		µg/L	1	7/8/2022 12:05:17 PM	68332
2-Methylphenol	ND	5.0	10		µg/L	1	7/8/2022 12:05:17 PM	68332
3+4-Methylphenol	ND	5.1	10		µg/L	1	7/8/2022 12:05:17 PM	68332
Phenol	ND	18	20		µg/L	1	7/8/2022 12:05:17 PM	68332
Pyridine	ND	14	40		µg/L	1	7/8/2022 12:05:17 PM	68332
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	7/8/2022 12:05:17 PM	68332
Surr: 2-Fluorophenol	45.6	0	29.4-87.7		%Rec	1	7/8/2022 12:05:17 PM	68332
Surr: Phenol-d5	37.7	0	28.5-64.7		%Rec	1	7/8/2022 12:05:17 PM	68332
Surr: 2,4,6-Tribromophenol	37.4	0	18.6-129		%Rec	1	7/8/2022 12:05:17 PM	68332
Surr: Nitrobenzene-d5	57.8	0	36.9-103		%Rec	1	7/8/2022 12:05:17 PM	68332
Surr: 2-Fluorobiphenyl	52.0	0	38.1-99.9		%Rec	1	7/8/2022 12:05:17 PM	68332
Surr: 4-Terphenyl-d14	68.3	0	48-155		%Rec	1	7/8/2022 12:05:17 PM	68332
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	11	0.11	1.0		µg/L	1	7/6/2022 10:23:00 PM	68332
Naphthalene	ND	0.20	0.30		µg/L	1	7/6/2022 10:23:00 PM	68332
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	7/6/2022 10:23:00 PM	68332
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	7/6/2022 10:23:00 PM	68332
Acenaphthene	ND	0.14	0.30		µg/L	1	7/6/2022 10:23:00 PM	68332
Fluorene	ND	0.095	0.30		µg/L	1	7/6/2022 10:23:00 PM	68332
Phenanthrene	ND	0.16	0.30		µg/L	1	7/6/2022 10:23:00 PM	68332
Anthracene	ND	0.14	0.30		µg/L	1	7/6/2022 10:23:00 PM	68332
Fluoranthene	ND	0.14	0.30		µg/L	1	7/6/2022 10:23:00 PM	68332
Pyrene	ND	0.32	1.0		µg/L	1	7/6/2022 10:23:00 PM	68332
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	7/6/2022 10:23:00 PM	68332
Chrysene	ND	0.25	0.30		µg/L	1	7/6/2022 10:23:00 PM	68332
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	7/6/2022 10:23:00 PM	68332
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	7/6/2022 10:23:00 PM	68332

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206C26**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-22-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/22/2022
Lab ID: 2206C26-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	67.6	0	31.6-100		%Rec	1	7/6/2022 10:23:00 PM	68332
Surr: 2-Fluorobiphenyl	61.8	0	26.7-90.1		%Rec	1	7/6/2022 10:23:00 PM	68332
Surr: 4-Terphenyl-d14	89.8	0	72.3-147		%Rec	1	7/6/2022 10:23:00 PM	68332

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206C26**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-22-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/22/2022
Lab ID: 2206C26-005D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	0.26	0.0016	0.0030		mg/L	1	6/27/2022 9:46:02 AM	68353
Beryllium	ND	0.00088	0.0020		mg/L	1	6/27/2022 9:46:02 AM	68353
Cadmium	ND	0.0018	0.0020		mg/L	1	6/27/2022 9:46:02 AM	68353
Chromium	0.0032	0.0020	0.0060	J	mg/L	1	6/27/2022 9:46:02 AM	68353
Cobalt	0.0076	0.0035	0.0060		mg/L	1	6/27/2022 9:46:02 AM	68353
Nickel	0.010	0.0053	0.010	J	mg/L	1	6/27/2022 9:46:02 AM	68353
Silver	ND	0.0018	0.0050		mg/L	1	6/27/2022 9:46:02 AM	68353
Vanadium	0.025	0.0035	0.050	J	mg/L	1	6/27/2022 9:46:02 AM	68353
Zinc	0.019	0.0039	0.010		mg/L	1	6/27/2022 9:46:02 AM	68353
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	6/27/2022 11:51:37 AM	68353
Arsenic	0.0017	0.00063	0.0050	J	mg/L	5	6/27/2022 11:51:37 AM	68353
Lead	0.0099	0.00031	0.0025		mg/L	5	6/27/2022 11:51:37 AM	68353
Selenium	ND	0.0019	0.0050		mg/L	5	6/27/2022 11:51:37 AM	68353
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/24/2022 12:54:32 PM	68334

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206C26**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-22-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/22/2022
Lab ID: 2206C26-005E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.050	0.0011	0.0020		mg/L	1	6/23/2022 1:07:01 PM	B88979
Beryllium	ND	0.00088	0.0020		mg/L	1	6/23/2022 1:07:01 PM	B88979
Cadmium	ND	0.00098	0.0020		mg/L	1	6/23/2022 1:07:01 PM	B88979
Chromium	ND	0.0020	0.0060		mg/L	1	6/23/2022 1:07:01 PM	B88979
Cobalt	ND	0.0024	0.0060		mg/L	1	6/23/2022 1:07:01 PM	B88979
Nickel	0.011	0.0033	0.010		mg/L	1	6/23/2022 1:07:01 PM	B88979
Silver	0.0060	0.0013	0.0050		mg/L	1	6/23/2022 1:07:01 PM	B88979
Vanadium	0.013	0.0017	0.050	J	mg/L	1	6/23/2022 1:07:01 PM	B88979
Zinc	0.013	0.0032	0.010		mg/L	1	6/23/2022 1:07:01 PM	B88979
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	6/29/2022 2:31:07 PM	C89140
Arsenic	0.00080	0.00061	0.0050	J	mg/L	5	6/29/2022 2:31:07 PM	C89140
Lead	ND	0.00028	0.0025		mg/L	5	6/29/2022 2:31:07 PM	C89140
Selenium	ND	0.0017	0.0050		mg/L	5	6/29/2022 2:31:07 PM	C89140
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/24/2022 12:56:41 PM	68334

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206C26**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 2nd Quarter
Collection Date:
Lab ID: 2206C26-006A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
Toluene	ND	0.20	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
Ethylbenzene	ND	0.21	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
Naphthalene	ND	0.50	2.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
Acetone	ND	2.5	10		µg/L	1	7/1/2022 5:52:54 PM	A89211
Bromobenzene	ND	0.28	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
Bromodichloromethane	ND	0.20	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
Bromoform	ND	0.31	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
Bromomethane	ND	0.85	3.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
2-Butanone	ND	2.0	10		µg/L	1	7/1/2022 5:52:54 PM	A89211
Carbon disulfide	ND	0.59	10		µg/L	1	7/1/2022 5:52:54 PM	A89211
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
Chlorobenzene	ND	0.16	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
Chloroethane	ND	0.38	2.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
Chloroform	ND	0.13	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
Chloromethane	ND	0.41	3.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
4-Chlorotoluene	ND	0.34	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
Dibromochloromethane	ND	0.28	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
Dibromomethane	ND	0.31	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
Dichlorodifluoromethane	ND	0.40	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
1,2-Dichloropropane	ND	0.20	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Estimated value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference

Analytical Report
Lab Order: **2206C26**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 2nd Quarter
Collection Date:
Lab ID: 2206C26-006A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Hexachlorobutadiene	ND	0.56	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
2-Hexanone	ND	1.8	10		µg/L	1	7/1/2022 5:52:54 PM	A89211
Isopropylbenzene	ND	0.18	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
4-Methyl-2-pentanone	ND	0.88	10		µg/L	1	7/1/2022 5:52:54 PM	A89211
Methylene Chloride	ND	0.50	3.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
n-Butylbenzene	ND	0.25	3.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
n-Propylbenzene	ND	0.18	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
Styrene	ND	0.14	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
trans-1,2-DCE	ND	0.19	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
1,2,3-Trichlorobenzene	ND	0.25	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
1,1,2-Trichloroethane	ND	0.20	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
Trichlorofluoromethane	ND	0.16	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
Vinyl chloride	ND	0.32	1.0		µg/L	1	7/1/2022 5:52:54 PM	A89211
Xylenes, Total	ND	0.37	1.5		µg/L	1	7/1/2022 5:52:54 PM	A89211
Surr: 1,2-Dichloroethane-d4	107	0	70-130		%Rec	1	7/1/2022 5:52:54 PM	A89211
Surr: 4-Bromofluorobenzene	106	0	70-130		%Rec	1	7/1/2022 5:52:54 PM	A89211
Surr: Dibromofluoromethane	112	0	70-130		%Rec	1	7/1/2022 5:52:54 PM	A89211
Surr: Toluene-d8	102	0	70-130		%Rec	1	7/1/2022 5:52:54 PM	A89211

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

ANALYTICAL REPORT

July 06, 2022

Hall Environmental Analysis Laboratory

Sample Delivery Group: L1508738

Samples Received: 06/24/2022

Project Number:

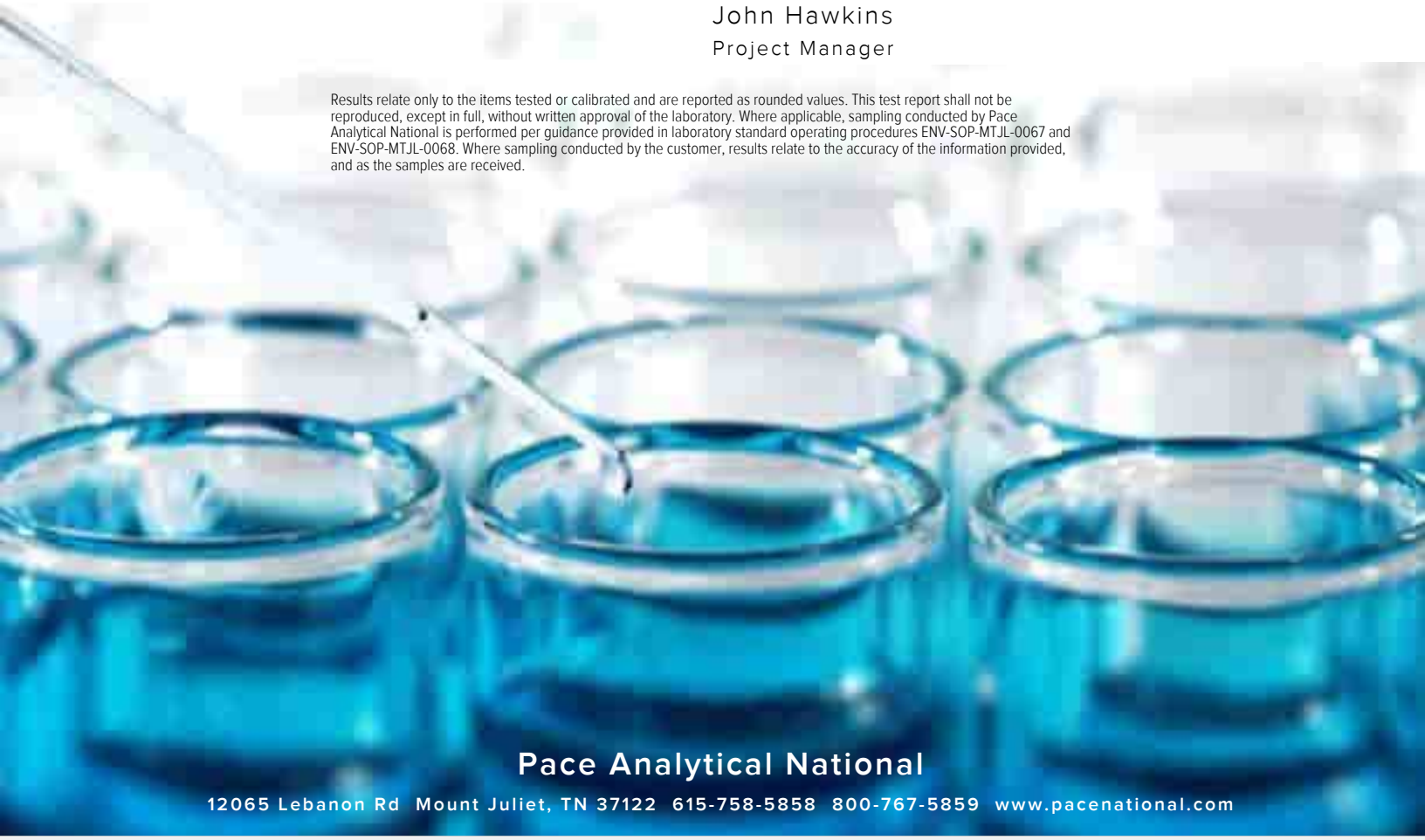
Description:

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By:

John Hawkins
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 4

Sr: Sample Results 5

2206C26-001F EB-6-22-22 L1508738-01 5

2206C26-002F MKTF-40 L1508738-02 6

2206C26-003F MKTF-31 L1508738-03 7

2206C26-005F DUP-6-21-22 L1508738-04 8

Qc: Quality Control Summary 9

Wet Chemistry by Method 4500CN E-2016 9

Gl: Glossary of Terms 11

Al: Accreditations & Locations 12

Sc: Sample Chain of Custody 13

SAMPLE SUMMARY

2206C26-001F EB-6-22-22 L1508738-01 WW

			Collected by	Collected date/time	Received date/time	
				06/22/22 08:15	06/24/22 08:45	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1888356	1	07/03/22 11:36	07/05/22 00:22	CAT	Mt. Juliet, TN

2206C26-002F MKTF-40 L1508738-02 WW

			Collected by	Collected date/time	Received date/time	
				06/22/22 08:35	06/24/22 08:45	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1888356	1	07/03/22 11:36	07/05/22 00:23	CAT	Mt. Juliet, TN

2206C26-003F MKTF-31 L1508738-03 WW

			Collected by	Collected date/time	Received date/time	
				06/22/22 09:00	06/24/22 08:45	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1888360	1	07/02/22 17:50	07/05/22 01:25	CAT	Mt. Juliet, TN

2206C26-005F DUP-6-21-22 L1508738-04 WW

			Collected by	Collected date/time	Received date/time	
				06/22/22 00:00	06/24/22 08:45	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1888360	1	07/02/22 17:50	07/05/22 01:26	CAT	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Received by OCD: 4/21/2023 9:21:57 AM

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	07/05/2022 00:22	WG1888356

Released to Imaging: 4/21/2023 9:40:26 AM

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.0128		0.00500	1	07/05/2022 00:23	WG1888356

Received by OCD: 4/21/2023 9:21:57 AM

Collected date/time: 06/22/22 09:00
L1508738

Wet Chemistry by Method 4500CN E-2016

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Cyanide	0.00830		0.00500	1	07/05/2022 01:25	WG1888360

Released to Imaging: 4/21/2023 9:40:26 AM

Received by OCD: 4/21/2023 9:21:57 AM

Collected date/time: 06/22/22 00:00
L1508738

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.0129		0.00500	1	07/05/2022 01:26	WG1888360

Released to Imaging: 4/21/2023 9:40:26 AM

Method Blank (MB)

(MB) R3810639-1 07/04/22 23:52

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1507941-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1507941-03 07/05/22 00:05 • (DUP) R3810639-5 07/05/22 00:06

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

L1508166-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1508166-04 07/05/22 00:10 • (DUP) R3810639-8 07/05/22 00:11

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	0.00567	1	26.3	P1	20

Laboratory Control Sample (LCS)

(LCS) R3810639-2 07/04/22 23:53

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.0943	94.3	87.1-120	

L1507934-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1507934-03 07/05/22 00:00 • (MS) R3810639-3 07/05/22 00:01 • (MSD) R3810639-4 07/05/22 00:04

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0727	0.0887	72.7	88.7	1	90.0-110	J6	J6	19.8	20

L1508166-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1508166-03 07/05/22 00:07 • (MS) R3810639-6 07/05/22 00:08 • (MSD) R3810639-7 07/05/22 00:09

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0982	0.0987	93.3	93.8	1	90.0-110			0.508	20

Method Blank (MB)

(MB) R3810641-1 07/05/22 00:55

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1507944-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1507944-10 07/05/22 01:01 • (DUP) R3810641-3 07/05/22 01:02

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

L1507944-14 Original Sample (OS) • Duplicate (DUP)

(OS) L1507944-14 07/05/22 01:10 • (DUP) R3810641-6 07/05/22 01:11

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3810641-2 07/05/22 00:56

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.101	101	87.1-120	

L1507944-11 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1507944-11 07/05/22 01:03 • (MS) R3810641-4 07/05/22 01:04 • (MSD) R3810641-5 07/05/22 01:07

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0968	0.0926	96.8	92.6	1	90.0-110			4.44	20

L1507944-16 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1507944-16 07/05/22 01:12 • (MS) R3810641-7 07/05/22 01:13 • (MSD) R3810641-8 07/05/22 01:14

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0773	0.0953	77.3	95.3	1	90.0-110	J6	J3	20.9	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Received by OCD: 4/21/2023 9:21:57 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

F044

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

SUB CONTRATOR:	Pace TN	COMPANY: PACE TN	PHONE: (800) 767-5859	FAX: (615) 758-5859	
ADDRESS:	12065 Lebanon Rd		ACCOUNT #:	EMAIL:	
CITY, STATE, ZIP:	Mt. Juliet, TN 37122				

L1508738

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	2206C26-001F	EB-6-22-22	500AMBHDP F-NAOH	Groundwater	6/22/2022 8:15:00 AM	1	Total Cyanide J and MDL
2	2206C26-002F	MKTF-40	500AMBHDP F-NAOH	Groundwater	6/22/2022 8:35:00 AM	1	Total Cyanide J and MDL
3	2206C26-003F	MKTF-31	500AMBHDP F-NAOH	Groundwater	6/22/2022 9:00:00 AM	1	Total Cyanide J and MDL
4	2206C26-005F	DUP-6-21-22	500AMBHDP F-NAOH	Groundwater	6/22/2022	1	Total Cyanide J and MDL

Sample Receipt Checklist

COC Seal Present/Intact: Y N — If Applicable
COC Signed/Accurate: Y N — VOA Zero Headspace: Y N
Bottles arrive intact: Y N — Pres.Correct/Check: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
RAD Screen <0.5 mR/hr: Y N

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By: CMC	Date: 6/23/2022	Time: 7:49 AM	Received By:	Date: 6/24/22	Time: 845
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☑ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY
Temp of samples 0.5+0=0.5 °C Attempt to Cool ?
DRAFT
Comments:

Released to Imaging: 4/21/2023 9:40:26 AM

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206C26**

14-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB-68353**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **68353**	RunNo: **89052**
Prep Date: **6/24/2022**	Analysis Date: **6/27/2022**	SeqNo: **3162931** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LCSLL-68353**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **68353**	RunNo: **89052**
Prep Date: **6/24/2022**	Analysis Date: **6/27/2022**	SeqNo: **3162932** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0016	0.0030	0.002000	0	80.1	50	150			J
Beryllium	0.0021	0.0020	0.002000	0	106	50	150			
Cadmium	0.0020	0.0020	0.002000	0	101	50	150			
Chromium	0.0059	0.0060	0.006000	0	97.9	50	150			J
Cobalt	0.0062	0.0060	0.006000	0	104	50	150			
Nickel	0.0027	0.010	0.005000	0	53.6	50	150			J
Silver	0.0050	0.0050	0.005000	0	100	50	150			
Vanadium	0.0098	0.050	0.01000	0	97.9	50	150			J
Zinc	0.011	0.010	0.01000	0	115	50	150			

Sample ID: **LCS-68353**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **68353**	RunNo: **89052**
Prep Date: **6/24/2022**	Analysis Date: **6/27/2022**	SeqNo: **3162933** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.47	0.0030	0.5000	0	93.7	85	115			
Beryllium	0.50	0.0020	0.5000	0	100	85	115			
Cadmium	0.47	0.0020	0.5000	0	93.5	85	115			
Chromium	0.46	0.0060	0.5000	0	93.0	85	115			
Cobalt	0.46	0.0060	0.5000	0	92.0	85	115			
Nickel	0.45	0.010	0.5000	0	90.9	85	115			
Silver	0.096	0.0050	0.1000	0	96.1	85	115			
Vanadium	0.48	0.050	0.5000	0	95.3	85	115			
Zinc	0.47	0.010	0.5000	0	94.2	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206C26**
14-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **2206C26-005DMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **DUP-6-22-22**	Batch ID: **68353**	RunNo: **89052**
Prep Date: **6/24/2022**	Analysis Date: **6/27/2022**	SeqNo: **3162952** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.69	0.0030	0.5000	0.2572	85.6	70	130			
Beryllium	0.47	0.0020	0.5000	0	94.0	70	130			
Cadmium	0.48	0.0020	0.5000	0	96.6	70	130			
Chromium	0.44	0.0060	0.5000	0.003164	88.4	70	130			
Cobalt	0.43	0.0060	0.5000	0.007584	84.0	70	130			
Nickel	0.42	0.010	0.5000	0.009985	82.2	70	130			
Silver	0.10	0.0050	0.1000	0	104	70	130			
Vanadium	0.48	0.050	0.5000	0.02497	91.3	70	130			
Zinc	0.46	0.010	0.5000	0.01919	88.7	70	130			

Sample ID: **2206C26-005DMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Metals**
Client ID: **DUP-6-22-22**	Batch ID: **68353**	RunNo: **89052**
Prep Date: **6/24/2022**	Analysis Date: **6/27/2022**	SeqNo: **3162953** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.68	0.0030	0.5000	0.2572	85.4	70	130	0.139	20	
Beryllium	0.47	0.0020	0.5000	0	94.0	70	130	0.0255	20	
Cadmium	0.49	0.0020	0.5000	0	97.3	70	130	0.729	20	
Chromium	0.45	0.0060	0.5000	0.003164	89.4	70	130	1.18	20	
Cobalt	0.43	0.0060	0.5000	0.007584	84.6	70	130	0.761	20	
Nickel	0.43	0.010	0.5000	0.009985	83.5	70	130	1.52	20	
Silver	0.10	0.0050	0.1000	0	104	70	130	0.731	20	
Vanadium	0.49	0.050	0.5000	0.02497	92.5	70	130	1.23	20	
Zinc	0.46	0.010	0.5000	0.01919	89.0	70	130	0.233	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206C26**

14-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**

Client ID: **PBW** Batch ID: **B88979** RunNo: **88979**

Prep Date: Analysis Date: **6/23/2022** SeqNo: **3159952** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**

Client ID: **BatchQC** Batch ID: **B88979** RunNo: **88979**

Prep Date: Analysis Date: **6/23/2022** SeqNo: **3160008** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0017	0.0020	0.002000	0	87.2	50	150			J
Beryllium	0.0022	0.0020	0.002000	0	111	50	150			
Cadmium	0.0017	0.0020	0.002000	0	84.9	50	150			J
Chromium	0.0064	0.0060	0.006000	0	107	50	150			
Cobalt	0.0065	0.0060	0.006000	0	108	50	150			
Nickel	0.0046	0.010	0.005000	0	92.8	50	150			J
Silver	0.0046	0.0050	0.005000	0	91.7	50	150			J
Vanadium	0.012	0.050	0.01000	0	118	50	150			J
Zinc	0.011	0.010	0.01000	0	109	50	150			

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**

Client ID: **LCSW** Batch ID: **B88979** RunNo: **88979**

Prep Date: Analysis Date: **6/23/2022** SeqNo: **3160009** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	97.9	85	115			
Beryllium	0.51	0.0020	0.5000	0	103	85	115			
Cadmium	0.52	0.0020	0.5000	0	104	85	115			
Chromium	0.50	0.0060	0.5000	0	100	85	115			
Cobalt	0.50	0.0060	0.5000	0	100	85	115			
Nickel	0.50	0.010	0.5000	0	99.3	85	115			
Silver	0.096	0.0050	0.1000	0	95.5	85	115			
Vanadium	0.50	0.050	0.5000	0	101	85	115			
Zinc	0.50	0.010	0.5000	0	101	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206C26**

14-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB-68353**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **68353**	RunNo: **89049**
Prep Date: **6/24/2022**	Analysis Date: **6/27/2022**	SeqNo: **3162820** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **MSLCSLL-68353**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **68353**	RunNo: **89049**
Prep Date: **6/24/2022**	Analysis Date: **6/27/2022**	SeqNo: **3162821** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00091	0.0010	0.001000	0	91.1	50	150			J
Arsenic	0.00098	0.0010	0.001000	0	98.1	50	150			J
Lead	0.00045	0.00050	0.0005000	0	89.3	50	150			J
Selenium	0.0013	0.0010	0.001000	0	131	50	150			

Sample ID: **MSLCS-68353**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **68353**	RunNo: **89049**
Prep Date: **6/24/2022**	Analysis Date: **6/27/2022**	SeqNo: **3162822** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	99.1	85	115			
Arsenic	0.025	0.0010	0.02500	0	98.1	85	115			
Lead	0.012	0.00050	0.01250	0	98.1	85	115			
Selenium	0.026	0.0010	0.02500	0	103	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206C26**
14-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B89062**	RunNo: **89062**
Prep Date:	Analysis Date: **6/27/2022**	SeqNo: **3163459** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B89062**	RunNo: **89062**
Prep Date:	Analysis Date: **6/27/2022**	SeqNo: **3163460** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00098	0.0010	0.001000	0	97.5	50	150			J
Arsenic	0.0010	0.0010	0.001000	0	104	50	150			
Lead	0.00054	0.00050	0.0005000	0	107	50	150			
Selenium	0.0013	0.0010	0.001000	0	127	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B89062**	RunNo: **89062**
Prep Date:	Analysis Date: **6/27/2022**	SeqNo: **3163461** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.5	85	115			
Arsenic	0.025	0.0010	0.02500	0	101	85	115			
Lead	0.013	0.00050	0.01250	0	102	85	115			
Selenium	0.026	0.0010	0.02500	0	103	85	115			

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **C89140**	RunNo: **89140**
Prep Date:	Analysis Date: **6/29/2022**	SeqNo: **3167568** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **C89140**	RunNo: **89140**
Prep Date:	Analysis Date: **6/29/2022**	SeqNo: **3167569** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206C26**
14-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **C89140**	RunNo: **89140**
Prep Date:	Analysis Date: **6/29/2022**	SeqNo: **3167569** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0010	0.0010	0.001000	0	105	50	150			
Arsenic	0.0012	0.0010	0.001000	0	116	50	150			
Lead	0.00055	0.00050	0.0005000	0	110	50	150			
Selenium	0.00074	0.0010	0.001000	0	74.2	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **C89140**	RunNo: **89140**
Prep Date:	Analysis Date: **6/29/2022**	SeqNo: **3167570** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	98.6	85	115			
Arsenic	0.025	0.0010	0.02500	0	100	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.025	0.0010	0.02500	0	101	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206C26**
14-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB-68334**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **PBW**	Batch ID: **68334**	RunNo: **89015**							
Prep Date: **6/24/2022**	Analysis Date: **6/24/2022**	SeqNo: **3161264**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-68334**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **BatchQC**	Batch ID: **68334**	RunNo: **89015**							
Prep Date: **6/24/2022**	Analysis Date: **6/24/2022**	SeqNo: **3161265**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00017	0.00020	0.0001500	0	115	50	150			J

Sample ID: **LCS-68334**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **LCSW**	Batch ID: **68334**	RunNo: **89015**							
Prep Date: **6/24/2022**	Analysis Date: **6/24/2022**	SeqNo: **3161266**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0048	0.00020	0.005000	0	95.3	85	115			

Sample ID: **2206C26-001DMS**	SampType: **MS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **EB-6-22-22**	Batch ID: **68334**	RunNo: **89015**							
Prep Date: **6/24/2022**	Analysis Date: **6/24/2022**	SeqNo: **3161292**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	103	75	125			

Sample ID: **2206C26-001DMSD**	SampType: **MSD**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **EB-6-22-22**	Batch ID: **68334**	RunNo: **89015**							
Prep Date: **6/24/2022**	Analysis Date: **6/24/2022**	SeqNo: **3161293**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	101	75	125	1.48	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206C26**
14-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB-68319**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **68319**	RunNo: **89001**							
Prep Date: **6/23/2022**	Analysis Date: **6/23/2022**	SeqNo: **3163530**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **MB-68319**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **68319**	RunNo: **89001**							
Prep Date: **6/23/2022**	Analysis Date: **6/23/2022**	SeqNo: **3163531**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-68319**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **LCSW**	Batch ID: **68319**	RunNo: **89001**							
Prep Date: **6/23/2022**	Analysis Date: **6/23/2022**	SeqNo: **3163532**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.088	0.010	0.1000	0	87.8	70	130			

Sample ID: **LCSD-68319**	SampType: **LCSD**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **LCSS02**	Batch ID: **68319**	RunNo: **89001**							
Prep Date: **6/23/2022**	Analysis Date: **6/23/2022**	SeqNo: **3163533**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	109	70	130	21.9	20	R

Sample ID: **2206C26-005BMS**	SampType: **MS**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **DUP-6-22-22**	Batch ID: **68319**	RunNo: **89001**							
Prep Date: **6/23/2022**	Analysis Date: **6/24/2022**	SeqNo: **3163573**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.092	0.0093	0.09309	0	99.1	65	135			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206C26**
14-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB-68348**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **PBW**	Batch ID: **68348**	RunNo: **89239**
Prep Date: **6/24/2022**	Analysis Date: **7/5/2022**	SeqNo: **3173275** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.021	0.064								J
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.036		0.03750		95.6	42.2	138			

Sample ID: **LCS-68348**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSW**	Batch ID: **68348**	RunNo: **89239**
Prep Date: **6/24/2022**	Analysis Date: **7/5/2022**	SeqNo: **3173276** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.15	0.064	0.1875	0	81.2	31.7	75.4			S
Surr: DNOP	0.020		0.01875		108	42.2	138			

Sample ID: **LCSD-68348**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02**	Batch ID: **68348**	RunNo: **89239**
Prep Date: **6/24/2022**	Analysis Date: **7/5/2022**	SeqNo: **3173277** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.17	0.064	0.1875	0	89.2	31.7	75.4	9.38	20	S
Surr: DNOP	0.021		0.01875		112	42.2	138	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206C26**
14-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **A89029**	RunNo: **89029**
Prep Date:	Analysis Date: **6/24/2022**	SeqNo: **3161785** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	20		20.00		98.6	70	130			

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **A89029**	RunNo: **89029**
Prep Date:	Analysis Date: **6/24/2022**	SeqNo: **3161786** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.54	0.050	0.5000	0	107	80	120			
Surr: BFB	42		20.00		211	70	130			S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206C26**
14-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R89156**	RunNo: **89156**
Prep Date:	Analysis Date: **6/30/2022**	SeqNo: **3169606** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	102	70	130			
Toluene	20	1.0	20.00	0	100	70	130			
Chlorobenzene	21	1.0	20.00	0	103	70	130			
1,1-Dichloroethene	19	1.0	20.00	0	94.9	70	130			
Trichloroethene (TCE)	19	1.0	20.00	0	96.2	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		103	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	10		10.00		103	70	130			
Surr: Toluene-d8	9.4		10.00		94.4	70	130			

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R89156**	RunNo: **89156**
Prep Date:	Analysis Date: **6/30/2022**	SeqNo: **3169683** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206C26**
14-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R89156**	RunNo: **89156**
Prep Date:	Analysis Date: **6/30/2022**	SeqNo: **3169683** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		109	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		106	70	130			
Surr: Dibromofluoromethane	11		10.00		107	70	130			
Surr: Toluene-d8	9.2		10.00		92.0	70	130			

Sample ID: **2206C26-002ams**	SampType: **MS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **MKTF-40**	Batch ID: **R89156**	RunNo: **89156**
Prep Date:	Analysis Date: **6/30/2022**	SeqNo: **3169698** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	108	70	130			
Toluene	20	1.0	20.00	0	101	70	130			
Chlorobenzene	21	1.0	20.00	0	105	70	130			
1,1-Dichloroethene	20	1.0	20.00	0	102	70	130			
Trichloroethene (TCE)	21	1.0	20.00	0	103	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		112	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		108	70	130			
Surr: Dibromofluoromethane	11		10.00		110	70	130			
Surr: Toluene-d8	9.6		10.00		95.7	70	130			

Sample ID: **2206C26-002amsd**	SampType: **MSD**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **MKTF-40**	Batch ID: **R89156**	RunNo: **89156**
Prep Date:	Analysis Date: **6/30/2022**	SeqNo: **3169699** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	105	70	130	2.83	20	
Toluene	19	1.0	20.00	0	96.6	70	130	4.60	20	
Chlorobenzene	21	1.0	20.00	0	104	70	130	1.14	20	
1,1-Dichloroethene	18	1.0	20.00	0	90.7	70	130	11.3	20	
Trichloroethene (TCE)	20	1.0	20.00	0	100	70	130	2.88	20	
Surr: 1,2-Dichloroethane-d4	11		10.00		112	70	130	0	0	
Surr: 4-Bromofluorobenzene	10		10.00		105	70	130	0	0	
Surr: Dibromofluoromethane	11		10.00		110	70	130	0	0	
Surr: Toluene-d8	9.3		10.00		92.6	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206C26**
14-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **A89211**	RunNo: **89211**
Prep Date:	Analysis Date: **7/1/2022**	SeqNo: **3171144** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	110	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Chlorobenzene	20	1.0	20.00	0	102	70	130			
1,1-Dichloroethene	20	1.0	20.00	0	102	70	130			
Trichloroethene (TCE)	21	1.0	20.00	0	106	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		106	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		108	70	130			
Surr: Dibromofluoromethane	11		10.00		107	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **A89211**	RunNo: **89211**
Prep Date:	Analysis Date: **7/1/2022**	SeqNo: **3171177** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206C26**
14-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **A89211**	RunNo: **89211**
Prep Date:	Analysis Date: **7/1/2022**	SeqNo: **3171177** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206C26**
14-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **A89211**	RunNo: **89211**
Prep Date:	Analysis Date: **7/1/2022**	SeqNo: **3171177** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		106	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		105	70	130			
Surr: Dibromofluoromethane	11		10.00		110	70	130			
Surr: Toluene-d8	9.9		10.00		99.1	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206C26**
14-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **mb-68332**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **68332**	RunNo: **89327**
Prep Date: **6/24/2022**	Analysis Date: **7/7/2022**	SeqNo: **3177340** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Anthracene	ND	10								
Benz(a)anthracene	ND	5.0								
Benzo(b)fluoranthene	ND	10								
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	10								
2,4-Dinitrophenol	ND	20								
Fluoranthene	ND	10								
Fluorene	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
1-Methylnaphthalene	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
Naphthalene	ND	5.0								
Phenanthrene	ND	10								
Phenol	ND	20								
Pyrene	ND	10								
Pyridine	ND	40								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	70		200.0		35.2	29.4	87.7			
Surr: Phenol-d5	54		200.0		26.9	28.5	64.7			S
Surr: 2,4,6-Tribromophenol	71		200.0		35.7	18.6	129			
Surr: Nitrobenzene-d5	46		100.0		46.4	36.9	103			
Surr: 2-Fluorobiphenyl	40		100.0		40.2	38.1	99.9			
Surr: 4-Terphenyl-d14	62		100.0		61.9	48	155			

Sample ID: **lcs-68332**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **68332**	RunNo: **89327**
Prep Date: **6/24/2022**	Analysis Date: **7/7/2022**	SeqNo: **3177341** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206C26**

14-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **lcs-68332**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **68332**	RunNo: **89327**
Prep Date: **6/24/2022**	Analysis Date: **7/7/2022**	SeqNo: **3177341** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	67	10	100.0	0	67.4	21.3	104			
1,4-Dichlorobenzene	61	5.0	100.0	0	60.8	15	89.8			
Phenol	92	20	200.0	0	45.8	17	61.1			
Pyrene	85	10	100.0	0	85.4	61	123			
Surr: 2-Fluorophenol	110		200.0		55.7	29.4	87.7			
Surr: Phenol-d5	85		200.0		42.3	28.5	64.7			
Surr: 2,4,6-Tribromophenol	130		200.0		63.2	18.6	129			
Surr: Nitrobenzene-d5	73		100.0		73.4	36.9	103			
Surr: 2-Fluorobiphenyl	68		100.0		68.5	38.1	99.9			
Surr: 4-Terphenyl-d14	94		100.0		94.0	48	155			

Sample ID: **lcsd-68332**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **68332**	RunNo: **89327**
Prep Date: **6/24/2022**	Analysis Date: **7/7/2022**	SeqNo: **3177342** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	55	10	100.0	0	54.9	21.3	104	20.4	45.3	
1,4-Dichlorobenzene	50	5.0	100.0	0	50.0	15	89.8	19.5	39.6	
Phenol	75	20	200.0	0	37.4	17	61.1	20.2	42.5	
Pyrene	78	10	100.0	0	77.9	61	123	9.22	11.8	
Surr: 2-Fluorophenol	91		200.0		45.3	29.4	87.7	0	0	
Surr: Phenol-d5	70		200.0		35.0	28.5	64.7	0	0	
Surr: 2,4,6-Tribromophenol	120		200.0		62.3	18.6	129	0	0	
Surr: Nitrobenzene-d5	57		100.0		57.5	36.9	103	0	0	
Surr: 2-Fluorobiphenyl	52		100.0		52.3	38.1	99.9	0	0	
Surr: 4-Terphenyl-d14	86		100.0		86.1	48	155	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206C26**
14-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **mb-68332**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **68332**	RunNo: **89275**
Prep Date: **6/24/2022**	Analysis Date: **7/6/2022**	SeqNo: **3174738** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.30								
1-Methylnaphthalene	ND	0.30								
2-Methylnaphthalene	ND	0.30								
Acenaphthene	ND	0.30								
Fluorene	ND	0.30								
Phenanthrene	ND	0.30								
Anthracene	ND	0.30								
Fluoranthene	ND	0.30								
Pyrene	ND	1.0								
Benz(a)anthracene	ND	0.30								
Chrysene	ND	0.30								
Benzo(b)fluoranthene	ND	0.30								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	50		100.0		50.4	31.6	100			
Surr: 2,4,6-Tribromophenol	73		200.0		36.5	22	101			
Surr: 2-Fluorobiphenyl	49		100.0		49.4	26.7	90.1			
Surr: 4-Terphenyl-d14	85		100.0		84.8	72.3	147			

Sample ID: **lcs-68332 lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **68332**	RunNo: **89275**
Prep Date: **6/24/2022**	Analysis Date: **7/6/2022**	SeqNo: **3174739** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	1.1	0.10	2.000	0	53.0	20.2	48.4			S
Naphthalene	1.5	0.30	2.000	0	77.0	21.3	79.9			
1-Methylnaphthalene	1.5	0.30	2.000	0	75.0	22.2	80.3			
2-Methylnaphthalene	1.5	0.30	2.000	0	74.0	20.6	80.1			
Acenaphthene	1.6	0.30	2.000	0	82.0	29.8	82.7			
Fluorene	1.7	0.30	2.000	0	84.0	33.3	86			
Phenanthrene	1.8	0.30	2.000	0	91.0	38.2	93.9			
Anthracene	1.8	0.30	2.000	0	89.0	41.1	95.6			
Fluoranthene	2.0	0.30	2.000	0	99.0	52.9	123			
Pyrene	1.7	1.0	2.000	0	85.0	51	113			
Benz(a)anthracene	1.9	0.30	2.000	0	97.0	51	147			
Chrysene	1.8	0.30	2.000	0	88.0	55.3	115			
Benzo(b)fluoranthene	1.8	0.30	2.000	0	88.0	44.4	136			
Indeno(1,2,3-cd)pyrene	1.8	0.30	2.000	0	90.0	31.4	165			
Surr: Nitrobenzene-d5	81		100.0		81.2	31.6	100			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206C26**

14-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **lcs-68332 lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **68332**	RunNo: **89275**
Prep Date: **6/24/2022**	Analysis Date: **7/6/2022**	SeqNo: **3174739** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	92		200.0		45.8	22	101			
Surr: 2-Fluorobiphenyl	75		100.0		75.4	26.7	90.1			
Surr: 4-Terphenyl-d14	95		100.0		95.0	72.3	147			

Sample ID: **lcsd-68332 lf**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02**	Batch ID: **68332**	RunNo: **89275**
Prep Date: **6/24/2022**	Analysis Date: **7/6/2022**	SeqNo: **3174740** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	1.1	1.0	2.000	0	55.0	20.2	48.4	3.70	30.1	S
Naphthalene	1.5	0.30	2.000	0	74.0	21.3	79.9	3.97	25.6	
1-Methylnaphthalene	1.4	0.30	2.000	0	72.0	22.2	80.3	4.08	25	
2-Methylnaphthalene	1.4	0.30	2.000	0	70.0	20.6	80.1	5.56	25	
Acenaphthene	1.7	0.30	2.000	0	83.0	29.8	82.7	1.21	27.8	S
Fluorene	1.7	0.30	2.000	0	86.0	33.3	86	2.35	26.4	
Phenanthrene	1.9	0.30	2.000	0	94.0	38.2	93.9	3.24	27.9	S
Anthracene	1.8	0.30	2.000	0	90.0	41.1	95.6	1.12	25.6	
Fluoranthene	2.0	0.30	2.000	0	98.0	52.9	123	1.02	22.8	
Pyrene	1.8	1.0	2.000	0	89.0	51	113	4.60	20	
Benz(a)anthracene	2.0	0.30	2.000	0	101	51	147	4.04	24.1	
Chrysene	1.9	0.30	2.000	0	94.0	55.3	115	6.59	20	
Benzo(b)fluoranthene	1.8	0.30	2.000	0	91.0	44.4	136	3.35	24.5	
Indeno(1,2,3-cd)pyrene	1.8	0.30	2.000	0	91.0	31.4	165	1.10	21.1	
Surr: Nitrobenzene-d5	84		100.0		83.6	31.6	100	0	0	
Surr: 2,4,6-Tribromophenol	98		200.0		49.2	22	101	0	0	
Surr: 2-Fluorobiphenyl	79		100.0		79.1	26.7	90.1	0	0	
Surr: 4-Terphenyl-d14	100		100.0		103	72.3	147	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **Marathon** Work Order Number: **2206C26** RcptNo: **1**

Received By: **Cheyenne Cason** **6/23/2022 7:20:00 AM** Chel

Completed By: **Cheyenne Cason** **6/23/2022 7:56:45 AM** Chel

Reviewed By: JR 6/23/22

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☑	No ☐	NA ☐
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: 8 4
(<2 or >12 unless noted)
Adjusted? NO
Checked by: KPG 6·23·22 ~~6·22·22~~ 6·23·22

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____
By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: _____
Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.1	Good	Yes			
2	0.9	Good	Yes			

Received by OCD: 4/21/2023 9:21:57 AM

Chain of Custody Record

Client:	Marathon Gallup Refinery
Mailing Address:	92 Giant Crossing Road Jamestown, NM,87347
Phone #:	808-640-1823
email or Fax#:	
QA/QC Package:	X Standard ☐ Level 4 (Full Validation)
Accreditation:	☐ Az Compliance ☐ NELAC ☐ Other
X EDD (Type)	

X Standard Rush

Project Name: **2022 GW Sampling 2nd Quarter**

Project #: **697-080-001**

Project Manager: Lesli Alexander/Mackensie Swift

Sampler:

On Ice: ☒ Yes ☐ No

# of Coolers: 2 1.1-0=1.1

Cooler Temp(including CF): 0.9-0=0.9

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2206126	See Analyte List	8260B: VOC	8270C: SVOC	8270C SIM: PAH, 1,4 Dioxane	8015: TPH GRO/DRO/MRO	E200.7: Metals	E200.7: Dissolved Metals	E245.1 Mercury	E504.1: EDB	E335.4: Cyanide Subbed		537.1: PFAS	SM 5201B: BOD	410.4: COD	SM9223B E. Coli
6/22	8:15		EB-6-22-22	14		001	X	X	X	X	X	X	X	X	X	X					
6/22	8:35		MKTF-40	14		002	X	X	X	X	X	X	X	X	X	X					
6/22	9:00		MKTF-31	14		003	X	X	X	X	X	X	X	X	X	X					
6/22	9:00		FB-6-22-22	3		004		X	X												
6/22	—		DUP-6-22-22	14		005	X	X	X	X	X	X	X	X	X	X					
			Trip Blank			006															

Date	Time	Relinquished by	Received by	Via	Date	Time
6/22	12:00	Hilario Trejo	CMC Courier		6/23/22	0726

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Released to Imaging: 4/21/2023 9:40:26 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

July 21, 2022

Lesli Alexander

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX: (505) 632-3911

RE: 2022 GW Sampling 2nd Quarter OrderNo.: 2206E09

Dear Lesli Alexander:

Hall Environmental Analysis Laboratory received 12 sample(s) on 6/24/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2206E09**
Date Reported: **7/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** EB-6-24-22
Project: 2022 GW Sampling 2nd Quarter **Collection Date:** 6/24/2022 8:00:00 AM
Lab ID: 2206E09-001 **Matrix:** GROUNDWA **Received Date:** 6/24/2022 2:57:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	7/5/2022 10:54:17 PM	68526
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **ED**	
Diesel Range Organics (DRO)	0.031	0.016	0.064	J	mg/L	1	7/9/2022 6:28:30 PM	68464
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	7/9/2022 6:28:30 PM	68464
Surr: DNOP	111	0	42.2-138		%Rec	1	7/9/2022 6:28:30 PM	68464
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	0.019	0.0090	0.050	J	mg/L	1	6/28/2022 7:29:39 PM	A89090
Surr: BFB	109	0	70-130		%Rec	1	6/28/2022 7:29:39 PM	A89090
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	ND	0.0011	0.0020		mg/L	1	6/27/2022 4:09:36 PM	B89068
Beryllium	ND	0.00088	0.0020		mg/L	1	6/27/2022 4:09:36 PM	B89068
Cadmium	ND	0.00098	0.0020		mg/L	1	6/27/2022 4:09:36 PM	B89068
Chromium	ND	0.0020	0.0060		mg/L	1	6/27/2022 4:09:36 PM	B89068
Cobalt	ND	0.0024	0.0060		mg/L	1	6/27/2022 4:09:36 PM	B89068
Nickel	ND	0.0033	0.010		mg/L	1	6/27/2022 4:09:36 PM	B89068
Silver	ND	0.0013	0.0050		mg/L	1	6/27/2022 4:09:36 PM	B89068
Vanadium	ND	0.0017	0.050		mg/L	1	6/27/2022 4:09:36 PM	B89068
Zinc	0.0053	0.0032	0.010	J	mg/L	1	6/27/2022 4:09:36 PM	B89068
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	ND	0.0016	0.0030		mg/L	1	6/29/2022 9:36:31 PM	68406
Beryllium	ND	0.00088	0.0020		mg/L	1	6/29/2022 9:36:31 PM	68406
Cadmium	ND	0.0018	0.0020		mg/L	1	6/29/2022 9:36:31 PM	68406
Chromium	ND	0.0020	0.0060		mg/L	1	6/29/2022 9:36:31 PM	68406
Cobalt	ND	0.0035	0.0060		mg/L	1	6/29/2022 9:36:31 PM	68406
Nickel	ND	0.0053	0.010		mg/L	1	6/29/2022 9:36:31 PM	68406
Silver	ND	0.0018	0.0050		mg/L	1	6/29/2022 9:36:31 PM	68406
Vanadium	ND	0.0035	0.050		mg/L	1	6/29/2022 9:36:31 PM	68406
Zinc	0.0046	0.0039	0.010	J	mg/L	1	6/29/2022 9:36:31 PM	68406
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/27/2022 2:36:05 PM	B89062
Arsenic	ND	0.00012	0.0010		mg/L	1	6/27/2022 2:36:05 PM	B89062
Lead	ND	0.000057	0.00050		mg/L	1	6/27/2022 2:36:05 PM	B89062
Selenium	ND	0.00034	0.0010		mg/L	1	6/27/2022 2:36:05 PM	B89062
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/30/2022 1:27:11 PM	68406
Arsenic	ND	0.00013	0.0010		mg/L	1	6/30/2022 1:27:11 PM	68406

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2206E09**
Date Reported: **7/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** EB-6-24-22
Project: 2022 GW Sampling 2nd Quarter **Collection Date:** 6/24/2022 8:00:00 AM
Lab ID: 2206E09-001 **Matrix:** GROUNDWA **Received Date:** 6/24/2022 2:57:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **bcv**	
Lead	ND	0.000061	0.00050		mg/L	1	6/30/2022 1:27:11 PM	68406
Selenium	ND	0.00037	0.0010		mg/L	1	6/30/2022 1:27:11 PM	68406
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/1/2022 1:23:21 PM	68497
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/1/2022 1:25:32 PM	68497
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	7/6/2022 6:56:54 PM	68408
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	7/6/2022 6:56:54 PM	68408
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	7/6/2022 6:56:54 PM	68408
Di-n-octyl phthalate	ND	12	20		µg/L	1	7/6/2022 6:56:54 PM	68408
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	7/6/2022 6:56:54 PM	68408
Diethyl phthalate	ND	6.0	10		µg/L	1	7/6/2022 6:56:54 PM	68408
Dimethyl phthalate	ND	6.0	10		µg/L	1	7/6/2022 6:56:54 PM	68408
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	7/6/2022 6:56:54 PM	68408
2,4-Dinitrophenol	ND	16	20		µg/L	1	7/6/2022 6:56:54 PM	68408
2-Methylphenol	ND	5.0	10		µg/L	1	7/6/2022 6:56:54 PM	68408
3+4-Methylphenol	ND	5.1	10		µg/L	1	7/6/2022 6:56:54 PM	68408
Phenol	ND	18	20		µg/L	1	7/6/2022 6:56:54 PM	68408
Pyridine	ND	14	40		µg/L	1	7/6/2022 6:56:54 PM	68408
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	7/6/2022 6:56:54 PM	68408
Surr: 2-Fluorophenol	59.4	0	29.4-87.7		%Rec	1	7/6/2022 6:56:54 PM	68408
Surr: Phenol-d5	43.7	0	28.5-64.7		%Rec	1	7/6/2022 6:56:54 PM	68408
Surr: 2,4,6-Tribromophenol	67.9	0	18.6-129		%Rec	1	7/6/2022 6:56:54 PM	68408
Surr: Nitrobenzene-d5	76.7	0	36.9-103		%Rec	1	7/6/2022 6:56:54 PM	68408
Surr: 2-Fluorobiphenyl	72.6	0	38.1-99.9		%Rec	1	7/6/2022 6:56:54 PM	68408
Surr: 4-Terphenyl-d14	95.7	0	48-155		%Rec	1	7/6/2022 6:56:54 PM	68408
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	7/5/2022 9:18:00 PM	68408
Naphthalene	ND	0.20	0.30		µg/L	1	7/5/2022 9:18:00 PM	68408
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	7/5/2022 9:18:00 PM	68408
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	7/5/2022 9:18:00 PM	68408
Acenaphthene	ND	0.14	0.30		µg/L	1	7/5/2022 9:18:00 PM	68408
Fluorene	ND	0.095	0.30		µg/L	1	7/5/2022 9:18:00 PM	68408
Phenanthrene	ND	0.16	0.30		µg/L	1	7/5/2022 9:18:00 PM	68408
Anthracene	ND	0.14	0.30		µg/L	1	7/5/2022 9:18:00 PM	68408
Fluoranthene	ND	0.14	0.30		µg/L	1	7/5/2022 9:18:00 PM	68408

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2206E09**
Date Reported: **7/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** EB-6-24-22
Project: 2022 GW Sampling 2nd Quarter **Collection Date:** 6/24/2022 8:00:00 AM
Lab ID: 2206E09-001 **Matrix:** GROUNDWA **Received Date:** 6/24/2022 2:57:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Pyrene	ND	0.32	1.0		µg/L	1	7/5/2022 9:18:00 PM	68408
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	7/5/2022 9:18:00 PM	68408
Chrysene	ND	0.25	0.30		µg/L	1	7/5/2022 9:18:00 PM	68408
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	7/5/2022 9:18:00 PM	68408
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	7/5/2022 9:18:00 PM	68408
Surr: Nitrobenzene-d5	80.7	0	31.6-100		%Rec	1	7/5/2022 9:18:00 PM	68408
Surr: 2-Fluorobiphenyl	78.9	0	26.7-90.1		%Rec	1	7/5/2022 9:18:00 PM	68408
Surr: 4-Terphenyl-d14	117	0	72.3-147		%Rec	1	7/5/2022 9:18:00 PM	68408
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	0.23	1.0		µg/L	1	7/5/2022 1:14:31 PM	R89248
Toluene	0.23	0.20	1.0	J	µg/L	1	7/5/2022 1:14:31 PM	R89248
Ethylbenzene	ND	0.21	1.0		µg/L	1	7/5/2022 1:14:31 PM	R89248
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	7/5/2022 1:14:31 PM	R89248
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	7/5/2022 1:14:31 PM	R89248
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	7/5/2022 1:14:31 PM	R89248
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	7/5/2022 1:14:31 PM	R89248
Acetone	4.9	2.5	10	J	µg/L	1	7/5/2022 1:14:31 PM	R89248
Bromomethane	ND	0.85	3.0		µg/L	1	7/5/2022 1:14:31 PM	R89248
2-Butanone	ND	2.0	10		µg/L	1	7/5/2022 1:14:31 PM	R89248
Carbon disulfide	ND	0.59	10		µg/L	1	7/5/2022 1:14:31 PM	R89248
Chlorobenzene	ND	0.16	1.0		µg/L	1	7/5/2022 1:14:31 PM	R89248
Chloroform	ND	0.13	1.0		µg/L	1	7/5/2022 1:14:31 PM	R89248
Chloromethane	0.60	0.41	3.0	J	µg/L	1	7/5/2022 1:14:31 PM	R89248
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	7/5/2022 1:14:31 PM	R89248
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	7/5/2022 1:14:31 PM	R89248
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	7/5/2022 1:14:31 PM	R89248
Isopropylbenzene	ND	0.18	1.0		µg/L	1	7/5/2022 1:14:31 PM	R89248
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	7/5/2022 1:14:31 PM	R89248
Methylene Chloride	ND	0.50	3.0		µg/L	1	7/5/2022 1:14:31 PM	R89248
n-Butylbenzene	ND	0.25	3.0		µg/L	1	7/5/2022 1:14:31 PM	R89248
n-Propylbenzene	ND	0.18	1.0		µg/L	1	7/5/2022 1:14:31 PM	R89248
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	7/5/2022 1:14:31 PM	R89248
Styrene	ND	0.14	1.0		µg/L	1	7/5/2022 1:14:31 PM	R89248
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	7/5/2022 1:14:31 PM	R89248
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	7/5/2022 1:14:31 PM	R89248
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	7/5/2022 1:14:31 PM	R89248
Vinyl chloride	ND	0.32	1.0		µg/L	1	7/5/2022 1:14:31 PM	R89248
Xylenes, Total	0.64	0.37	1.5	J	µg/L	1	7/5/2022 1:14:31 PM	R89248
Surr: 1,2-Dichloroethane-d4	105	0	70-130		%Rec	1	7/5/2022 1:14:31 PM	R89248

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order **2206E09**
Date Reported: **7/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** EB-6-24-22
Project: 2022 GW Sampling 2nd Quarter **Collection Date:** 6/24/2022 8:00:00 AM
Lab ID: 2206E09-001 **Matrix:** GROUNDWA **Received Date:** 6/24/2022 2:57:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Surr: 4-Bromofluorobenzene	110	0	70-130		%Rec	1	7/5/2022 1:14:31 PM	R89248
Surr: Dibromofluoromethane	115	0	70-130		%Rec	1	7/5/2022 1:14:31 PM	R89248
Surr: Toluene-d8	99.0	0	70-130		%Rec	1	7/5/2022 1:14:31 PM	R89248

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2206E09**
Date Reported: **7/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** MKTF-27
Project: 2022 GW Sampling 2nd Quarter **Collection Date:** 6/24/2022 8:30:00 AM
Lab ID: 2206E09-002 **Matrix:** GROUNDWA **Received Date:** 6/24/2022 2:57:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0026	0.0092		µg/L	1	7/5/2022 11:24:54 PM	68526
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **ED**	
Diesel Range Organics (DRO)	0.19	0.016	0.064		mg/L	1	7/9/2022 6:52:22 PM	68464
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	7/9/2022 6:52:22 PM	68464
Surr: DNOP	95.6	0	42.2-138		%Rec	1	7/9/2022 6:52:22 PM	68464
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	0.046	0.0090	0.050	J	mg/L	1	6/28/2022 7:53:12 PM	A89090
Surr: BFB	105	0	70-130		%Rec	1	6/28/2022 7:53:12 PM	A89090
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.055	0.0011	0.0020		mg/L	1	6/27/2022 4:14:21 PM	B89068
Beryllium	ND	0.00088	0.0020		mg/L	1	6/27/2022 4:14:21 PM	B89068
Cadmium	ND	0.00098	0.0020		mg/L	1	6/27/2022 4:14:21 PM	B89068
Chromium	ND	0.0020	0.0060		mg/L	1	6/27/2022 4:14:21 PM	B89068
Cobalt	ND	0.0024	0.0060		mg/L	1	6/27/2022 4:14:21 PM	B89068
Nickel	0.031	0.0033	0.010		mg/L	1	6/27/2022 4:14:21 PM	B89068
Silver	0.0062	0.0013	0.0050		mg/L	1	6/27/2022 4:14:21 PM	B89068
Vanadium	0.0025	0.0017	0.050	J	mg/L	1	6/27/2022 4:14:21 PM	B89068
Zinc	0.0084	0.0032	0.010	J	mg/L	1	6/27/2022 4:14:21 PM	B89068
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	0.14	0.0016	0.0030		mg/L	1	6/29/2022 9:38:44 PM	68406
Beryllium	ND	0.00088	0.0020		mg/L	1	6/29/2022 9:38:44 PM	68406
Cadmium	ND	0.0018	0.0020		mg/L	1	6/29/2022 9:38:44 PM	68406
Chromium	ND	0.0020	0.0060		mg/L	1	6/29/2022 9:38:44 PM	68406
Cobalt	ND	0.0035	0.0060		mg/L	1	6/29/2022 9:38:44 PM	68406
Nickel	0.035	0.0053	0.010		mg/L	1	6/29/2022 9:38:44 PM	68406
Silver	ND	0.0018	0.0050		mg/L	1	6/30/2022 5:26:13 PM	68406
Vanadium	0.0087	0.0035	0.050	J	mg/L	1	6/29/2022 9:38:44 PM	68406
Zinc	0.0068	0.0039	0.010	J	mg/L	1	6/29/2022 9:38:44 PM	68406
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	6/29/2022 2:55:20 PM	C89140
Arsenic	ND	0.00061	0.0050		mg/L	5	6/29/2022 2:55:20 PM	C89140
Lead	ND	0.00028	0.0025		mg/L	5	6/29/2022 2:55:20 PM	C89140
Selenium	0.0018	0.0017	0.0050	J	mg/L	5	6/29/2022 2:55:20 PM	C89140
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	6/30/2022 2:38:44 PM	68406
Arsenic	0.0010	0.00063	0.0050	J	mg/L	5	6/30/2022 2:38:44 PM	68406

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2206E09**
Date Reported: **7/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** MKTF-27
Project: 2022 GW Sampling 2nd Quarter **Collection Date:** 6/24/2022 8:30:00 AM
Lab ID: 2206E09-002 **Matrix:** GROUNDWA **Received Date:** 6/24/2022 2:57:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **bcv**	
Lead	0.0025	0.00031	0.0025		mg/L	5	6/30/2022 2:38:44 PM	68406
Selenium	ND	0.0019	0.0050		mg/L	5	6/30/2022 2:38:44 PM	68406
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/1/2022 1:27:39 PM	68497
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/1/2022 1:29:47 PM	68497
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	7/6/2022 7:40:41 PM	68408
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	7/6/2022 7:40:41 PM	68408
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	7/6/2022 7:40:41 PM	68408
Di-n-octyl phthalate	ND	12	20		µg/L	1	7/6/2022 7:40:41 PM	68408
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	7/6/2022 7:40:41 PM	68408
Diethyl phthalate	ND	6.0	10		µg/L	1	7/6/2022 7:40:41 PM	68408
Dimethyl phthalate	ND	6.0	10		µg/L	1	7/6/2022 7:40:41 PM	68408
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	7/6/2022 7:40:41 PM	68408
2,4-Dinitrophenol	ND	16	20		µg/L	1	7/6/2022 7:40:41 PM	68408
2-Methylphenol	ND	5.0	10		µg/L	1	7/6/2022 7:40:41 PM	68408
3+4-Methylphenol	ND	5.1	10		µg/L	1	7/6/2022 7:40:41 PM	68408
Phenol	ND	18	20		µg/L	1	7/6/2022 7:40:41 PM	68408
Pyridine	ND	14	40		µg/L	1	7/6/2022 7:40:41 PM	68408
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	7/6/2022 7:40:41 PM	68408
Surr: 2-Fluorophenol	54.7	0	29.4-87.7		%Rec	1	7/6/2022 7:40:41 PM	68408
Surr: Phenol-d5	42.8	0	28.5-64.7		%Rec	1	7/6/2022 7:40:41 PM	68408
Surr: 2,4,6-Tribromophenol	64.2	0	18.6-129		%Rec	1	7/6/2022 7:40:41 PM	68408
Surr: Nitrobenzene-d5	73.6	0	36.9-103		%Rec	1	7/6/2022 7:40:41 PM	68408
Surr: 2-Fluorobiphenyl	73.2	0	38.1-99.9		%Rec	1	7/6/2022 7:40:41 PM	68408
Surr: 4-Terphenyl-d14	90.4	0	48-155		%Rec	1	7/6/2022 7:40:41 PM	68408
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	8.4	0.11	1.0		µg/L	1	7/5/2022 10:08:00 PM	68408
Naphthalene	ND	0.20	0.30		µg/L	1	7/5/2022 10:08:00 PM	68408
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	7/5/2022 10:08:00 PM	68408
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	7/5/2022 10:08:00 PM	68408
Acenaphthene	ND	0.14	0.30		µg/L	1	7/5/2022 10:08:00 PM	68408
Fluorene	ND	0.095	0.30		µg/L	1	7/5/2022 10:08:00 PM	68408
Phenanthrene	ND	0.16	0.30		µg/L	1	7/5/2022 10:08:00 PM	68408
Anthracene	ND	0.14	0.30		µg/L	1	7/5/2022 10:08:00 PM	68408
Fluoranthene	ND	0.14	0.30		µg/L	1	7/5/2022 10:08:00 PM	68408

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order **2206E09**
Date Reported: **7/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** MKTF-27
Project: 2022 GW Sampling 2nd Quarter **Collection Date:** 6/24/2022 8:30:00 AM
Lab ID: 2206E09-002 **Matrix:** GROUNDWA **Received Date:** 6/24/2022 2:57:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Pyrene	ND	0.32	1.0		µg/L	1	7/5/2022 10:08:00 PM	68408
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	7/5/2022 10:08:00 PM	68408
Chrysene	ND	0.25	0.30		µg/L	1	7/5/2022 10:08:00 PM	68408
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	7/5/2022 10:08:00 PM	68408
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	7/5/2022 10:08:00 PM	68408
Surr: Nitrobenzene-d5	79.6	0	31.6-100		%Rec	1	7/5/2022 10:08:00 PM	68408
Surr: 2-Fluorobiphenyl	76.9	0	26.7-90.1		%Rec	1	7/5/2022 10:08:00 PM	68408
Surr: 4-Terphenyl-d14	96.0	0	72.3-147		%Rec	1	7/5/2022 10:08:00 PM	68408
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	0.55	0.23	1.0	J	µg/L	1	7/5/2022 1:41:41 PM	R89248
Toluene	ND	0.20	1.0		µg/L	1	7/5/2022 1:41:41 PM	R89248
Ethylbenzene	ND	0.21	1.0		µg/L	1	7/5/2022 1:41:41 PM	R89248
Methyl tert-butyl ether (MTBE)	39	0.39	1.0		µg/L	1	7/5/2022 1:41:41 PM	R89248
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	7/5/2022 1:41:41 PM	R89248
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	7/5/2022 1:41:41 PM	R89248
1,2-Dichloroethane (EDC)	0.78	0.25	1.0	J	µg/L	1	7/5/2022 1:41:41 PM	R89248
Acetone	ND	2.5	10		µg/L	1	7/5/2022 1:41:41 PM	R89248
Bromomethane	ND	0.85	3.0		µg/L	1	7/5/2022 1:41:41 PM	R89248
2-Butanone	ND	2.0	10		µg/L	1	7/5/2022 1:41:41 PM	R89248
Carbon disulfide	ND	0.59	10		µg/L	1	7/5/2022 1:41:41 PM	R89248
Chlorobenzene	ND	0.16	1.0		µg/L	1	7/5/2022 1:41:41 PM	R89248
Chloroform	ND	0.13	1.0		µg/L	1	7/5/2022 1:41:41 PM	R89248
Chloromethane	ND	0.41	3.0		µg/L	1	7/5/2022 1:41:41 PM	R89248
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	7/5/2022 1:41:41 PM	R89248
1,1-Dichloroethane	1.6	0.27	1.0		µg/L	1	7/5/2022 1:41:41 PM	R89248
1,1-Dichloroethene	0.87	0.20	1.0	J	µg/L	1	7/5/2022 1:41:41 PM	R89248
Isopropylbenzene	ND	0.18	1.0		µg/L	1	7/5/2022 1:41:41 PM	R89248
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	7/5/2022 1:41:41 PM	R89248
Methylene Chloride	ND	0.50	3.0		µg/L	1	7/5/2022 1:41:41 PM	R89248
n-Butylbenzene	ND	0.25	3.0		µg/L	1	7/5/2022 1:41:41 PM	R89248
n-Propylbenzene	ND	0.18	1.0		µg/L	1	7/5/2022 1:41:41 PM	R89248
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	7/5/2022 1:41:41 PM	R89248
Styrene	ND	0.14	1.0		µg/L	1	7/5/2022 1:41:41 PM	R89248
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	7/5/2022 1:41:41 PM	R89248
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	7/5/2022 1:41:41 PM	R89248
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	7/5/2022 1:41:41 PM	R89248
Vinyl chloride	ND	0.32	1.0		µg/L	1	7/5/2022 1:41:41 PM	R89248
Xylenes, Total	ND	0.37	1.5		µg/L	1	7/5/2022 1:41:41 PM	R89248
Surr: 1,2-Dichloroethane-d4	112	0	70-130		%Rec	1	7/5/2022 1:41:41 PM	R89248

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2206E09**
Date Reported: **7/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** MKTF-27
Project: 2022 GW Sampling 2nd Quarter **Collection Date:** 6/24/2022 8:30:00 AM
Lab ID: 2206E09-002 **Matrix:** GROUNDWA **Received Date:** 6/24/2022 2:57:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Surr: 4-Bromofluorobenzene	105	0	70-130		%Rec	1	7/5/2022 1:41:41 PM	R89248
Surr: Dibromofluoromethane	111	0	70-130		%Rec	1	7/5/2022 1:41:41 PM	R89248
Surr: Toluene-d8	97.5	0	70-130		%Rec	1	7/5/2022 1:41:41 PM	R89248

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2206E09**
Date Reported: **7/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** MKTF-28
Project: 2022 GW Sampling 2nd Quarter **Collection Date:** 6/24/2022 9:00:00 AM
Lab ID: 2206E09-003 **Matrix:** GROUNDWA **Received Date:** 6/24/2022 2:57:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	7/5/2022 11:40:11 PM	68526
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **ED**	
Diesel Range Organics (DRO)	0.19	0.016	0.064		mg/L	1	7/9/2022 7:16:13 PM	68464
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	7/9/2022 7:16:13 PM	68464
Surr: DNOP	101	0	42.2-138		%Rec	1	7/9/2022 7:16:13 PM	68464
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	6/28/2022 9:03:46 PM	A89090
Surr: BFB	102	0	70-130		%Rec	1	6/28/2022 9:03:46 PM	A89090
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.10	0.0011	0.0020		mg/L	1	6/27/2022 4:18:46 PM	B89068
Beryllium	ND	0.00088	0.0020		mg/L	1	6/27/2022 4:18:46 PM	B89068
Cadmium	ND	0.00098	0.0020		mg/L	1	6/27/2022 4:18:46 PM	B89068
Chromium	ND	0.0020	0.0060		mg/L	1	6/27/2022 4:18:46 PM	B89068
Cobalt	ND	0.0024	0.0060		mg/L	1	6/27/2022 4:18:46 PM	B89068
Nickel	0.0059	0.0033	0.010	J	mg/L	1	6/27/2022 4:18:46 PM	B89068
Silver	0.0022	0.0013	0.0050	J	mg/L	1	6/27/2022 4:18:46 PM	B89068
Vanadium	0.0042	0.0017	0.050	J	mg/L	1	6/27/2022 4:18:46 PM	B89068
Zinc	0.0090	0.0032	0.010	J	mg/L	1	6/27/2022 4:18:46 PM	B89068
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	0.20	0.0016	0.0030		mg/L	1	6/29/2022 9:40:44 PM	68406
Beryllium	ND	0.00088	0.0020		mg/L	1	6/29/2022 9:40:44 PM	68406
Cadmium	ND	0.0018	0.0020		mg/L	1	6/29/2022 9:40:44 PM	68406
Chromium	0.0021	0.0020	0.0060	J	mg/L	1	6/29/2022 9:40:44 PM	68406
Cobalt	ND	0.0035	0.0060		mg/L	1	6/29/2022 9:40:44 PM	68406
Nickel	0.0090	0.0053	0.010	J	mg/L	1	6/29/2022 9:40:44 PM	68406
Silver	ND	0.0018	0.0050		mg/L	1	6/29/2022 9:40:44 PM	68406
Vanadium	0.012	0.0035	0.050	J	mg/L	1	6/29/2022 9:40:44 PM	68406
Zinc	0.018	0.0039	0.010		mg/L	1	6/29/2022 9:40:44 PM	68406
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/27/2022 2:49:32 PM	B89062
Arsenic	0.00084	0.00012	0.0010	J	mg/L	1	6/27/2022 2:49:32 PM	B89062
Lead	ND	0.000057	0.00050		mg/L	1	6/27/2022 2:49:32 PM	B89062
Selenium	ND	0.00034	0.0010		mg/L	1	6/27/2022 2:49:32 PM	B89062
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/30/2022 1:32:05 PM	68406
Arsenic	0.0025	0.00013	0.0010		mg/L	1	6/30/2022 1:32:05 PM	68406

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2206E09**
Date Reported: **7/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** MKTF-28
Project: 2022 GW Sampling 2nd Quarter **Collection Date:** 6/24/2022 9:00:00 AM
Lab ID: 2206E09-003 **Matrix:** GROUNDWA **Received Date:** 6/24/2022 2:57:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **bcv**	
Lead	0.0057	0.00031	0.0025		mg/L	5	6/30/2022 2:41:10 PM	68406
Selenium	0.0013	0.00037	0.0010		mg/L	1	6/30/2022 1:32:05 PM	68406
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/1/2022 1:31:54 PM	68497
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/1/2022 1:38:17 PM	68497
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	7/6/2022 8:24:22 PM	68408
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	7/6/2022 8:24:22 PM	68408
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	7/6/2022 8:24:22 PM	68408
Di-n-octyl phthalate	ND	12	20		µg/L	1	7/6/2022 8:24:22 PM	68408
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	7/6/2022 8:24:22 PM	68408
Diethyl phthalate	ND	6.0	10		µg/L	1	7/6/2022 8:24:22 PM	68408
Dimethyl phthalate	ND	6.0	10		µg/L	1	7/6/2022 8:24:22 PM	68408
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	7/6/2022 8:24:22 PM	68408
2,4-Dinitrophenol	ND	16	20		µg/L	1	7/6/2022 8:24:22 PM	68408
2-Methylphenol	ND	5.0	10		µg/L	1	7/6/2022 8:24:22 PM	68408
3+4-Methylphenol	ND	5.1	10		µg/L	1	7/6/2022 8:24:22 PM	68408
Phenol	ND	18	20		µg/L	1	7/6/2022 8:24:22 PM	68408
Pyridine	ND	14	40		µg/L	1	7/6/2022 8:24:22 PM	68408
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	7/6/2022 8:24:22 PM	68408
Surr: 2-Fluorophenol	62.6	0	29.4-87.7		%Rec	1	7/6/2022 8:24:22 PM	68408
Surr: Phenol-d5	46.8	0	28.5-64.7		%Rec	1	7/6/2022 8:24:22 PM	68408
Surr: 2,4,6-Tribromophenol	75.2	0	18.6-129		%Rec	1	7/6/2022 8:24:22 PM	68408
Surr: Nitrobenzene-d5	77.5	0	36.9-103		%Rec	1	7/6/2022 8:24:22 PM	68408
Surr: 2-Fluorobiphenyl	73.4	0	38.1-99.9		%Rec	1	7/6/2022 8:24:22 PM	68408
Surr: 4-Terphenyl-d14	99.3	0	48-155		%Rec	1	7/6/2022 8:24:22 PM	68408
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	0.78	0.11	1.0	J	µg/L	1	7/5/2022 10:56:00 PM	68408
Naphthalene	ND	0.20	0.30		µg/L	1	7/5/2022 10:56:00 PM	68408
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	7/5/2022 10:56:00 PM	68408
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	7/5/2022 10:56:00 PM	68408
Acenaphthene	ND	0.14	0.30		µg/L	1	7/5/2022 10:56:00 PM	68408
Fluorene	ND	0.095	0.30		µg/L	1	7/5/2022 10:56:00 PM	68408
Phenanthrene	ND	0.16	0.30		µg/L	1	7/5/2022 10:56:00 PM	68408
Anthracene	ND	0.14	0.30		µg/L	1	7/5/2022 10:56:00 PM	68408
Fluoranthene	ND	0.14	0.30		µg/L	1	7/5/2022 10:56:00 PM	68408

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2206E09**
Date Reported: **7/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** MKTF-28
Project: 2022 GW Sampling 2nd Quarter **Collection Date:** 6/24/2022 9:00:00 AM
Lab ID: 2206E09-003 **Matrix:** GROUNDWA **Received Date:** 6/24/2022 2:57:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Pyrene	ND	0.32	1.0		µg/L	1	7/5/2022 10:56:00 PM	68408
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	7/5/2022 10:56:00 PM	68408
Chrysene	ND	0.25	0.30		µg/L	1	7/5/2022 10:56:00 PM	68408
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	7/5/2022 10:56:00 PM	68408
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	7/5/2022 10:56:00 PM	68408
Surr: Nitrobenzene-d5	83.6	0	31.6-100		%Rec	1	7/5/2022 10:56:00 PM	68408
Surr: 2-Fluorobiphenyl	80.5	0	26.7-90.1		%Rec	1	7/5/2022 10:56:00 PM	68408
Surr: 4-Terphenyl-d14	94.0	0	72.3-147		%Rec	1	7/5/2022 10:56:00 PM	68408
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	0.23	1.0		µg/L	1	7/5/2022 2:08:53 PM	R89248
Toluene	ND	0.20	1.0		µg/L	1	7/5/2022 2:08:53 PM	R89248
Ethylbenzene	ND	0.21	1.0		µg/L	1	7/5/2022 2:08:53 PM	R89248
Methyl tert-butyl ether (MTBE)	0.70	0.39	1.0	J	µg/L	1	7/5/2022 2:08:53 PM	R89248
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	7/5/2022 2:08:53 PM	R89248
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	7/5/2022 2:08:53 PM	R89248
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	7/5/2022 2:08:53 PM	R89248
Acetone	2.7	2.5	10	J	µg/L	1	7/5/2022 2:08:53 PM	R89248
Bromomethane	ND	0.85	3.0		µg/L	1	7/5/2022 2:08:53 PM	R89248
2-Butanone	ND	2.0	10		µg/L	1	7/5/2022 2:08:53 PM	R89248
Carbon disulfide	ND	0.59	10		µg/L	1	7/5/2022 2:08:53 PM	R89248
Chlorobenzene	ND	0.16	1.0		µg/L	1	7/5/2022 2:08:53 PM	R89248
Chloroform	ND	0.13	1.0		µg/L	1	7/5/2022 2:08:53 PM	R89248
Chloromethane	ND	0.41	3.0		µg/L	1	7/5/2022 2:08:53 PM	R89248
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	7/5/2022 2:08:53 PM	R89248
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	7/5/2022 2:08:53 PM	R89248
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	7/5/2022 2:08:53 PM	R89248
Isopropylbenzene	ND	0.18	1.0		µg/L	1	7/5/2022 2:08:53 PM	R89248
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	7/5/2022 2:08:53 PM	R89248
Methylene Chloride	ND	0.50	3.0		µg/L	1	7/5/2022 2:08:53 PM	R89248
n-Butylbenzene	ND	0.25	3.0		µg/L	1	7/5/2022 2:08:53 PM	R89248
n-Propylbenzene	ND	0.18	1.0		µg/L	1	7/5/2022 2:08:53 PM	R89248
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	7/5/2022 2:08:53 PM	R89248
Styrene	ND	0.14	1.0		µg/L	1	7/5/2022 2:08:53 PM	R89248
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	7/5/2022 2:08:53 PM	R89248
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	7/5/2022 2:08:53 PM	R89248
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	7/5/2022 2:08:53 PM	R89248
Vinyl chloride	ND	0.32	1.0		µg/L	1	7/5/2022 2:08:53 PM	R89248
Xylenes, Total	ND	0.37	1.5		µg/L	1	7/5/2022 2:08:53 PM	R89248
Surr: 1,2-Dichloroethane-d4	116	0	70-130		%Rec	1	7/5/2022 2:08:53 PM	R89248

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2206E09**
Date Reported: **7/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** MKTF-28
Project: 2022 GW Sampling 2nd Quarter **Collection Date:** 6/24/2022 9:00:00 AM
Lab ID: 2206E09-003 **Matrix:** GROUNDWA **Received Date:** 6/24/2022 2:57:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Surr: 4-Bromofluorobenzene	106	0	70-130		%Rec	1	7/5/2022 2:08:53 PM	R89248
Surr: Dibromofluoromethane	115	0	70-130		%Rec	1	7/5/2022 2:08:53 PM	R89248
Surr: Toluene-d8	100	0	70-130		%Rec	1	7/5/2022 2:08:53 PM	R89248

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2206E09**
Date Reported: **7/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** NAPIS-2
Project: 2022 GW Sampling 2nd Quarter **Collection Date:** 6/24/2022 9:25:00 AM
Lab ID: 2206E09-004 **Matrix:** GROUNDWA **Received Date:** 6/24/2022 2:57:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	7/5/2022 11:55:28 PM	68526
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **ED**	
Diesel Range Organics (DRO)	1.7	0.016	0.064		mg/L	1	7/9/2022 7:40:07 PM	68464
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	7/9/2022 7:40:07 PM	68464
Surr: DNOP	85.5	0	42.2-138		%Rec	1	7/9/2022 7:40:07 PM	68464
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	4.2	0.0090	0.050		mg/L	1	6/28/2022 9:27:18 PM	A89090
Surr: BFB	354	0	70-130	S	%Rec	1	6/28/2022 9:27:18 PM	A89090
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	4.9	0.011	0.020	*	mg/L	10	6/30/2022 10:03:55 AM	A89154
Beryllium	ND	0.00088	0.0020		mg/L	1	6/27/2022 4:23:05 PM	B89068
Cadmium	ND	0.00098	0.0020		mg/L	1	6/27/2022 4:23:05 PM	B89068
Chromium	ND	0.0020	0.0060		mg/L	1	6/27/2022 4:23:05 PM	B89068
Cobalt	ND	0.0024	0.0060		mg/L	1	6/27/2022 4:23:05 PM	B89068
Nickel	0.063	0.0033	0.010		mg/L	1	6/27/2022 4:23:05 PM	B89068
Silver	0.0028	0.0013	0.0050	J	mg/L	1	6/27/2022 4:23:05 PM	B89068
Vanadium	0.0025	0.0017	0.050	J	mg/L	1	6/27/2022 4:23:05 PM	B89068
Zinc	0.014	0.0032	0.010		mg/L	1	6/27/2022 4:23:05 PM	B89068
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	4.4	0.016	0.030	*	mg/L	10	7/7/2022 11:31:28 AM	68406
Beryllium	ND	0.00088	0.0020		mg/L	1	6/29/2022 9:42:43 PM	68406
Cadmium	ND	0.0018	0.0020		mg/L	1	6/29/2022 9:42:43 PM	68406
Chromium	ND	0.0020	0.0060		mg/L	1	6/29/2022 9:42:43 PM	68406
Cobalt	ND	0.0035	0.0060		mg/L	1	6/29/2022 9:42:43 PM	68406
Nickel	0.064	0.0053	0.010		mg/L	1	6/29/2022 9:42:43 PM	68406
Silver	0.0020	0.0018	0.0050	J	mg/L	1	6/29/2022 9:42:43 PM	68406
Vanadium	ND	0.0035	0.050		mg/L	1	6/29/2022 9:42:43 PM	68406
Zinc	0.0048	0.0039	0.010	J	mg/L	1	6/29/2022 9:42:43 PM	68406
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/27/2022 2:57:38 PM	B89062
Arsenic	0.0017	0.00012	0.0010		mg/L	1	6/27/2022 2:57:38 PM	B89062
Lead	0.00025	0.000057	0.00050	J	mg/L	1	6/27/2022 2:57:38 PM	B89062
Selenium	ND	0.00034	0.0010		mg/L	1	6/27/2022 2:57:38 PM	B89062
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/30/2022 1:34:31 PM	68406
Arsenic	0.0027	0.00013	0.0010		mg/L	1	6/30/2022 1:34:31 PM	68406

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2206E09**
Date Reported: **7/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** NAPIS-2
Project: 2022 GW Sampling 2nd Quarter **Collection Date:** 6/24/2022 9:25:00 AM
Lab ID: 2206E09-004 **Matrix:** GROUNDWA **Received Date:** 6/24/2022 2:57:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **bcv**	
Lead	0.0015	0.000061	0.00050		mg/L	1	6/30/2022 1:34:31 PM	68406
Selenium	ND	0.00037	0.0010		mg/L	1	6/30/2022 1:34:31 PM	68406
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/1/2022 1:40:24 PM	68497
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/1/2022 1:42:32 PM	68497
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	7/13/2022 9:34:17 AM	68468
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	7/13/2022 9:34:17 AM	68468
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	7/13/2022 9:34:17 AM	68468
Di-n-octyl phthalate	ND	12	20		µg/L	1	7/13/2022 9:34:17 AM	68468
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	7/13/2022 9:34:17 AM	68468
Diethyl phthalate	ND	6.0	10		µg/L	1	7/13/2022 9:34:17 AM	68468
Dimethyl phthalate	ND	6.0	10		µg/L	1	7/13/2022 9:34:17 AM	68468
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	7/13/2022 9:34:17 AM	68468
2,4-Dinitrophenol	ND	16	20		µg/L	1	7/13/2022 9:34:17 AM	68468
1-Methylnaphthalene	31	4.3	5.0		µg/L	1	7/13/2022 9:34:17 AM	68468
2-Methylphenol	ND	5.0	10		µg/L	1	7/13/2022 9:34:17 AM	68468
3+4-Methylphenol	ND	5.1	10		µg/L	1	7/13/2022 9:34:17 AM	68468
Phenol	52	18	20		µg/L	1	7/13/2022 9:34:17 AM	68468
Pyridine	ND	14	40		µg/L	1	7/13/2022 9:34:17 AM	68468
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	7/13/2022 9:34:17 AM	68468
Surr: 2-Fluorophenol	59.5	0	29.4-87.7		%Rec	1	7/13/2022 9:34:17 AM	68468
Surr: Phenol-d5	44.5	0	28.5-64.7		%Rec	1	7/13/2022 9:34:17 AM	68468
Surr: 2,4,6-Tribromophenol	67.7	0	18.6-129		%Rec	1	7/13/2022 9:34:17 AM	68468
Surr: Nitrobenzene-d5	76.8	0	36.9-103		%Rec	1	7/13/2022 9:34:17 AM	68468
Surr: 2-Fluorobiphenyl	66.1	0	38.1-99.9		%Rec	1	7/13/2022 9:34:17 AM	68468
Surr: 4-Terphenyl-d14	82.9	0	48-155		%Rec	1	7/13/2022 9:34:17 AM	68468
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	3.5	0.11	1.0		µg/L	1	7/7/2022 1:39:00 PM	68468
Naphthalene	16	0.20	0.30		µg/L	1	7/7/2022 1:39:00 PM	68468
2-Methylnaphthalene	6.3	0.14	0.30		µg/L	1	7/7/2022 1:39:00 PM	68468
Acenaphthene	3.0	0.14	0.30		µg/L	1	7/7/2022 1:39:00 PM	68468
Fluorene	2.6	0.095	0.30		µg/L	1	7/7/2022 1:39:00 PM	68468
Phenanthrene	0.18	0.16	0.30	J	µg/L	1	7/7/2022 1:39:00 PM	68468
Anthracene	0.22	0.14	0.30	J	µg/L	1	7/7/2022 1:39:00 PM	68468
Fluoranthene	ND	0.14	0.30		µg/L	1	7/7/2022 1:39:00 PM	68468

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2206E09**
Date Reported: **7/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** NAPIS-2
Project: 2022 GW Sampling 2nd Quarter **Collection Date:** 6/24/2022 9:25:00 AM
Lab ID: 2206E09-004 **Matrix:** GROUNDWA **Received Date:** 6/24/2022 2:57:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Pyrene	ND	0.32	1.0		µg/L	1	7/7/2022 1:39:00 PM	68468
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	7/7/2022 1:39:00 PM	68468
Chrysene	ND	0.25	0.30		µg/L	1	7/7/2022 1:39:00 PM	68468
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	7/7/2022 1:39:00 PM	68468
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	7/7/2022 1:39:00 PM	68468
Surr: Nitrobenzene-d5	66.0	0	31.6-100		%Rec	1	7/7/2022 1:39:00 PM	68468
Surr: 2-Fluorobiphenyl	57.3	0	26.7-90.1		%Rec	1	7/7/2022 1:39:00 PM	68468
Surr: 4-Terphenyl-d14	74.1	0	72.3-147		%Rec	1	7/7/2022 1:39:00 PM	68468
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	1300	4.5	20		µg/L	20	7/5/2022 2:36:08 PM	R89248
Toluene	0.70	0.40	2.0	J	µg/L	2	7/5/2022 3:03:24 PM	R89248
Ethylbenzene	180	0.43	2.0		µg/L	2	7/5/2022 3:03:24 PM	R89248
Methyl tert-butyl ether (MTBE)	130	0.79	2.0		µg/L	2	7/5/2022 3:03:24 PM	R89248
1,2,4-Trimethylbenzene	1.7	0.24	2.0	J	µg/L	2	7/5/2022 3:03:24 PM	R89248
1,3,5-Trimethylbenzene	1.4	0.36	2.0	J	µg/L	2	7/5/2022 3:03:24 PM	R89248
1,2-Dichloroethane (EDC)	ND	0.51	2.0		µg/L	2	7/5/2022 3:03:24 PM	R89248
Acetone	15	5.0	20	J	µg/L	2	7/5/2022 3:03:24 PM	R89248
Bromomethane	ND	1.7	6.0		µg/L	2	7/5/2022 3:03:24 PM	R89248
2-Butanone	ND	4.1	20		µg/L	2	7/5/2022 3:03:24 PM	R89248
Carbon disulfide	ND	1.2	20		µg/L	2	7/5/2022 3:03:24 PM	R89248
Chlorobenzene	ND	0.31	2.0		µg/L	2	7/5/2022 3:03:24 PM	R89248
Chloroform	0.76	0.27	2.0	J	µg/L	2	7/5/2022 3:03:24 PM	R89248
Chloromethane	1.3	0.82	6.0	J	µg/L	2	7/5/2022 3:03:24 PM	R89248
cis-1,2-DCE	ND	0.78	2.0		µg/L	2	7/5/2022 3:03:24 PM	R89248
1,1-Dichloroethane	ND	0.55	2.0		µg/L	2	7/5/2022 3:03:24 PM	R89248
1,1-Dichloroethene	ND	0.40	2.0		µg/L	2	7/5/2022 3:03:24 PM	R89248
Isopropylbenzene	14	0.37	2.0		µg/L	2	7/5/2022 3:03:24 PM	R89248
4-Isopropyltoluene	ND	0.40	2.0		µg/L	2	7/5/2022 3:03:24 PM	R89248
Methylene Chloride	ND	1.0	6.0		µg/L	2	7/5/2022 3:03:24 PM	R89248
n-Butylbenzene	1.5	0.51	6.0	J	µg/L	2	7/5/2022 3:03:24 PM	R89248
n-Propylbenzene	14	0.36	2.0		µg/L	2	7/5/2022 3:03:24 PM	R89248
sec-Butylbenzene	2.3	0.29	2.0		µg/L	2	7/5/2022 3:03:24 PM	R89248
Styrene	ND	0.27	2.0		µg/L	2	7/5/2022 3:03:24 PM	R89248
Tetrachloroethene (PCE)	ND	0.71	2.0		µg/L	2	7/5/2022 3:03:24 PM	R89248
1,1,1-Trichloroethane	ND	0.60	2.0		µg/L	2	7/5/2022 3:03:24 PM	R89248
Trichloroethene (TCE)	ND	0.41	2.0		µg/L	2	7/5/2022 3:03:24 PM	R89248
Vinyl chloride	ND	0.64	2.0		µg/L	2	7/5/2022 3:03:24 PM	R89248
Xylenes, Total	32	0.74	3.0		µg/L	2	7/5/2022 3:03:24 PM	R89248
Surr: 1,2-Dichloroethane-d4	106	0	70-130		%Rec	2	7/5/2022 3:03:24 PM	R89248

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order **2206E09**
Date Reported: **7/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** NAPIS-2
Project: 2022 GW Sampling 2nd Quarter **Collection Date:** 6/24/2022 9:25:00 AM
Lab ID: 2206E09-004 **Matrix:** GROUNDWA **Received Date:** 6/24/2022 2:57:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	2	7/5/2022 3:03:24 PM	R89248
Surr: Dibromofluoromethane	111	0	70-130		%Rec	2	7/5/2022 3:03:24 PM	R89248
Surr: Toluene-d8	98.4	0	70-130		%Rec	2	7/5/2022 3:03:24 PM	R89248

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2206E09**
Date Reported: **7/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** NAPIS-3
Project: 2022 GW Sampling 2nd Quarter **Collection Date:** 6/24/2022 9:45:00 AM
Lab ID: 2206E09-005 **Matrix:** GROUNDWA **Received Date:** 6/24/2022 2:57:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	7/6/2022 12:26:07 AM	68526
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **ED**	
Diesel Range Organics (DRO)	0.54	0.016	0.064		mg/L	1	7/9/2022 8:04:08 PM	68464
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	7/9/2022 8:04:08 PM	68464
Surr: DNOP	95.1	0	42.2-138		%Rec	1	7/9/2022 8:04:08 PM	68464
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	0.90	0.0090	0.050		mg/L	1	6/28/2022 9:50:47 PM	A89090
Surr: BFB	198	0	70-130	S	%Rec	1	6/28/2022 9:50:47 PM	A89090
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	2.9	0.0056	0.010	*	mg/L	5	6/27/2022 4:36:40 PM	B89068
Beryllium	ND	0.00088	0.0020		mg/L	1	6/27/2022 4:34:25 PM	B89068
Cadmium	ND	0.00098	0.0020		mg/L	1	6/27/2022 4:34:25 PM	B89068
Chromium	ND	0.0020	0.0060		mg/L	1	6/27/2022 4:34:25 PM	B89068
Cobalt	ND	0.0024	0.0060		mg/L	1	6/27/2022 4:34:25 PM	B89068
Nickel	0.022	0.0033	0.010		mg/L	1	6/27/2022 4:34:25 PM	B89068
Silver	0.0029	0.0013	0.0050	J	mg/L	1	6/27/2022 4:34:25 PM	B89068
Vanadium	ND	0.0017	0.050		mg/L	1	6/27/2022 4:34:25 PM	B89068
Zinc	0.0084	0.0032	0.010	J	mg/L	1	6/27/2022 4:34:25 PM	B89068
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	2.9	0.0079	0.015	*	mg/L	5	6/30/2022 5:14:31 PM	68406
Beryllium	ND	0.00088	0.0020		mg/L	1	6/29/2022 9:44:43 PM	68406
Cadmium	ND	0.0018	0.0020		mg/L	1	6/29/2022 9:44:43 PM	68406
Chromium	ND	0.0020	0.0060		mg/L	1	6/29/2022 9:44:43 PM	68406
Cobalt	ND	0.0035	0.0060		mg/L	1	6/29/2022 9:44:43 PM	68406
Nickel	0.025	0.0053	0.010		mg/L	1	6/29/2022 9:44:43 PM	68406
Silver	0.0024	0.0018	0.0050	J	mg/L	1	6/29/2022 9:44:43 PM	68406
Vanadium	ND	0.0035	0.050		mg/L	1	6/29/2022 9:44:43 PM	68406
Zinc	0.0041	0.0039	0.010	J	mg/L	1	6/29/2022 9:44:43 PM	68406
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/27/2022 3:00:19 PM	B89062
Arsenic	0.0013	0.00012	0.0010		mg/L	1	6/27/2022 3:00:19 PM	B89062
Lead	ND	0.000057	0.00050		mg/L	1	6/27/2022 3:00:19 PM	B89062
Selenium	ND	0.00034	0.0010		mg/L	1	6/27/2022 3:00:19 PM	B89062
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/30/2022 1:36:58 PM	68406
Arsenic	0.0039	0.00013	0.0010		mg/L	1	6/30/2022 1:36:58 PM	68406

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Estimated value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference

Analytical Report
Lab Order **2206E09**
Date Reported: **7/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** NAPIS-3
Project: 2022 GW Sampling 2nd Quarter **Collection Date:** 6/24/2022 9:45:00 AM
Lab ID: 2206E09-005 **Matrix:** GROUNDWA **Received Date:** 6/24/2022 2:57:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **bcv**	
Lead	0.0013	0.000061	0.00050		mg/L	1	6/30/2022 1:36:58 PM	68406
Selenium	0.00037	0.00037	0.0010	J	mg/L	1	6/30/2022 1:36:58 PM	68406
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/1/2022 1:44:41 PM	68497
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/1/2022 1:46:49 PM	68497
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	7/13/2022 10:15:47 AM	68468
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	7/13/2022 10:15:47 AM	68468
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	7/13/2022 10:15:47 AM	68468
Di-n-octyl phthalate	ND	12	20		µg/L	1	7/13/2022 10:15:47 AM	68468
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	7/13/2022 10:15:47 AM	68468
Diethyl phthalate	ND	6.0	10		µg/L	1	7/13/2022 10:15:47 AM	68468
Dimethyl phthalate	ND	6.0	10		µg/L	1	7/13/2022 10:15:47 AM	68468
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	7/13/2022 10:15:47 AM	68468
2,4-Dinitrophenol	ND	16	20		µg/L	1	7/13/2022 10:15:47 AM	68468
2-Methylphenol	ND	5.0	10		µg/L	1	7/13/2022 10:15:47 AM	68468
3+4-Methylphenol	ND	5.1	10		µg/L	1	7/13/2022 10:15:47 AM	68468
Phenol	ND	18	20		µg/L	1	7/13/2022 10:15:47 AM	68468
Pyridine	ND	14	40		µg/L	1	7/13/2022 10:15:47 AM	68468
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	7/13/2022 10:15:47 AM	68468
Surr: 2-Fluorophenol	60.2	0	29.4-87.7		%Rec	1	7/13/2022 10:15:47 AM	68468
Surr: Phenol-d5	44.5	0	28.5-64.7		%Rec	1	7/13/2022 10:15:47 AM	68468
Surr: 2,4,6-Tribromophenol	65.3	0	18.6-129		%Rec	1	7/13/2022 10:15:47 AM	68468
Surr: Nitrobenzene-d5	75.5	0	36.9-103		%Rec	1	7/13/2022 10:15:47 AM	68468
Surr: 2-Fluorobiphenyl	70.4	0	38.1-99.9		%Rec	1	7/13/2022 10:15:47 AM	68468
Surr: 4-Terphenyl-d14	85.1	0	48-155		%Rec	1	7/13/2022 10:15:47 AM	68468
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	0.68	0.11	1.0	J	µg/L	1	7/7/2022 2:24:00 PM	68468
Naphthalene	2.9	0.20	0.30		µg/L	1	7/7/2022 2:24:00 PM	68468
1-Methylnaphthalene	5.7	0.15	0.30		µg/L	1	7/7/2022 2:24:00 PM	68468
2-Methylnaphthalene	2.8	0.14	0.30		µg/L	1	7/7/2022 2:24:00 PM	68468
Acenaphthene	0.72	0.14	0.30		µg/L	1	7/7/2022 2:24:00 PM	68468
Fluorene	0.52	0.095	0.30		µg/L	1	7/7/2022 2:24:00 PM	68468
Phenanthrene	0.16	0.16	0.30	J	µg/L	1	7/7/2022 2:24:00 PM	68468
Anthracene	ND	0.14	0.30		µg/L	1	7/7/2022 2:24:00 PM	68468
Fluoranthene	ND	0.14	0.30		µg/L	1	7/7/2022 2:24:00 PM	68468

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2206E09**
Date Reported: **7/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** NAPIS-3
Project: 2022 GW Sampling 2nd Quarter **Collection Date:** 6/24/2022 9:45:00 AM
Lab ID: 2206E09-005 **Matrix:** GROUNDWA **Received Date:** 6/24/2022 2:57:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Pyrene	ND	0.32	1.0		µg/L	1	7/7/2022 2:24:00 PM	68468
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	7/7/2022 2:24:00 PM	68468
Chrysene	ND	0.25	0.30		µg/L	1	7/7/2022 2:24:00 PM	68468
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	7/7/2022 2:24:00 PM	68468
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	7/7/2022 2:24:00 PM	68468
Surr: Nitrobenzene-d5	71.4	0	31.6-100		%Rec	1	7/7/2022 2:24:00 PM	68468
Surr: 2-Fluorobiphenyl	61.9	0	26.7-90.1		%Rec	1	7/7/2022 2:24:00 PM	68468
Surr: 4-Terphenyl-d14	75.6	0	72.3-147		%Rec	1	7/7/2022 2:24:00 PM	68468
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	250	1.1	5.0		µg/L	5	7/5/2022 3:30:42 PM	R89248
Toluene	0.23	0.20	1.0	J	µg/L	1	7/5/2022 3:58:00 PM	R89248
Ethylbenzene	49	0.21	1.0		µg/L	1	7/5/2022 3:58:00 PM	R89248
Methyl tert-butyl ether (MTBE)	68	0.39	1.0		µg/L	1	7/5/2022 3:58:00 PM	R89248
1,2,4-Trimethylbenzene	0.19	0.12	1.0	J	µg/L	1	7/5/2022 3:58:00 PM	R89248
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	7/5/2022 3:58:00 PM	R89248
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	7/5/2022 3:58:00 PM	R89248
Acetone	6.5	2.5	10	J	µg/L	1	7/5/2022 3:58:00 PM	R89248
Bromomethane	ND	0.85	3.0		µg/L	1	7/5/2022 3:58:00 PM	R89248
2-Butanone	ND	2.0	10		µg/L	1	7/5/2022 3:58:00 PM	R89248
Carbon disulfide	ND	0.59	10		µg/L	1	7/5/2022 3:58:00 PM	R89248
Chlorobenzene	ND	0.16	1.0		µg/L	1	7/5/2022 3:58:00 PM	R89248
Chloroform	0.22	0.13	1.0	J	µg/L	1	7/5/2022 3:58:00 PM	R89248
Chloromethane	0.64	0.41	3.0	J	µg/L	1	7/5/2022 3:58:00 PM	R89248
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	7/5/2022 3:58:00 PM	R89248
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	7/5/2022 3:58:00 PM	R89248
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	7/5/2022 3:58:00 PM	R89248
Isopropylbenzene	4.7	0.18	1.0		µg/L	1	7/5/2022 3:58:00 PM	R89248
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	7/5/2022 3:58:00 PM	R89248
Methylene Chloride	ND	0.50	3.0		µg/L	1	7/5/2022 3:58:00 PM	R89248
n-Butylbenzene	0.39	0.25	3.0	J	µg/L	1	7/5/2022 3:58:00 PM	R89248
n-Propylbenzene	2.1	0.18	1.0		µg/L	1	7/5/2022 3:58:00 PM	R89248
sec-Butylbenzene	0.77	0.14	1.0	J	µg/L	1	7/5/2022 3:58:00 PM	R89248
Styrene	ND	0.14	1.0		µg/L	1	7/5/2022 3:58:00 PM	R89248
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	7/5/2022 3:58:00 PM	R89248
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	7/5/2022 3:58:00 PM	R89248
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	7/5/2022 3:58:00 PM	R89248
Vinyl chloride	ND	0.32	1.0		µg/L	1	7/5/2022 3:58:00 PM	R89248
Xylenes, Total	3.3	0.37	1.5		µg/L	1	7/5/2022 3:58:00 PM	R89248
Surr: 1,2-Dichloroethane-d4	99.5	0	70-130		%Rec	1	7/5/2022 3:58:00 PM	R89248

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2206E09**
Date Reported: **7/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** NAPIS-3
Project: 2022 GW Sampling 2nd Quarter **Collection Date:** 6/24/2022 9:45:00 AM
Lab ID: 2206E09-005 **Matrix:** GROUNDWA **Received Date:** 6/24/2022 2:57:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Surr: 4-Bromofluorobenzene	105	0	70-130		%Rec	1	7/5/2022 3:58:00 PM	R89248
Surr: Dibromofluoromethane	108	0	70-130		%Rec	1	7/5/2022 3:58:00 PM	R89248
Surr: Toluene-d8	98.4	0	70-130		%Rec	1	7/5/2022 3:58:00 PM	R89248

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2206E09**
Date Reported: **7/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** KA-3
Project: 2022 GW Sampling 2nd Quarter **Collection Date:** 6/24/2022 10:05:00 AM
Lab ID: 2206E09-006 **Matrix:** GROUNDWA **Received Date:** 6/24/2022 2:57:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	7/6/2022 12:41:20 AM	68526
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **ED**	
Diesel Range Organics (DRO)	1.2	0.016	0.064		mg/L	1	7/9/2022 8:28:04 PM	68464
Motor Oil Range Organics (MRO)	0.91	0.052	0.080		mg/L	1	7/9/2022 8:28:04 PM	68464
Surr: DNOP	84.9	0	42.2-138		%Rec	1	7/9/2022 8:28:04 PM	68464
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	0.15	0.0090	0.050		mg/L	1	6/28/2022 10:14:13 PM	A89090
Surr: BFB	161	0	70-130	S	%Rec	1	6/28/2022 10:14:13 PM	A89090
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.20	0.0011	0.0020		mg/L	1	6/27/2022 4:38:48 PM	B89068
Beryllium	ND	0.00088	0.0020		mg/L	1	6/27/2022 4:38:48 PM	B89068
Cadmium	ND	0.00098	0.0020		mg/L	1	6/27/2022 4:38:48 PM	B89068
Chromium	ND	0.0020	0.0060		mg/L	1	6/27/2022 4:38:48 PM	B89068
Cobalt	ND	0.0024	0.0060		mg/L	1	6/27/2022 4:38:48 PM	B89068
Nickel	0.025	0.0033	0.010		mg/L	1	6/27/2022 4:38:48 PM	B89068
Silver	ND	0.0013	0.0050		mg/L	1	6/27/2022 4:38:48 PM	B89068
Vanadium	0.016	0.0017	0.050	J	mg/L	1	6/27/2022 4:38:48 PM	B89068
Zinc	0.013	0.0032	0.010		mg/L	1	6/27/2022 4:38:48 PM	B89068
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	0.20	0.0016	0.0030		mg/L	1	6/29/2022 9:46:44 PM	68406
Beryllium	ND	0.00088	0.0020		mg/L	1	6/29/2022 9:46:44 PM	68406
Cadmium	ND	0.0018	0.0020		mg/L	1	6/29/2022 9:46:44 PM	68406
Chromium	ND	0.0020	0.0060		mg/L	1	6/29/2022 9:46:44 PM	68406
Cobalt	ND	0.0035	0.0060		mg/L	1	6/29/2022 9:46:44 PM	68406
Nickel	0.023	0.0053	0.010		mg/L	1	6/29/2022 9:46:44 PM	68406
Silver	ND	0.0018	0.0050		mg/L	1	6/29/2022 9:46:44 PM	68406
Vanadium	0.014	0.0035	0.050	J	mg/L	1	6/29/2022 9:46:44 PM	68406
Zinc	0.0066	0.0039	0.010	J	mg/L	1	6/29/2022 9:46:44 PM	68406
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/27/2022 3:03:00 PM	B89062
Arsenic	0.00071	0.00012	0.0010	J	mg/L	1	6/27/2022 3:03:00 PM	B89062
Lead	0.00024	0.000057	0.00050	J	mg/L	1	6/27/2022 3:03:00 PM	B89062
Selenium	ND	0.00034	0.0010		mg/L	1	6/27/2022 3:03:00 PM	B89062
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/30/2022 1:44:19 PM	68406
Arsenic	0.00081	0.00013	0.0010	J	mg/L	1	6/30/2022 1:44:19 PM	68406

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2206E09**
Date Reported: **7/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** KA-3
Project: 2022 GW Sampling 2nd Quarter **Collection Date:** 6/24/2022 10:05:00 AM
Lab ID: 2206E09-006 **Matrix:** GROUNDWA **Received Date:** 6/24/2022 2:57:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **bcv**	
Lead	0.00040	0.000061	0.00050	J	mg/L	1	6/30/2022 1:44:19 PM	68406
Selenium	ND	0.00037	0.0010		mg/L	1	6/30/2022 1:44:19 PM	68406
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00045	0.0010		mg/L	5	7/1/2022 2:18:59 PM	68497
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/1/2022 1:55:27 PM	68497
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	7/13/2022 10:57:24 AM	68468
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	7/13/2022 10:57:24 AM	68468
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	7/13/2022 10:57:24 AM	68468
Di-n-octyl phthalate	ND	12	20		µg/L	1	7/13/2022 10:57:24 AM	68468
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	7/13/2022 10:57:24 AM	68468
Diethyl phthalate	ND	6.0	10		µg/L	1	7/13/2022 10:57:24 AM	68468
Dimethyl phthalate	ND	6.0	10		µg/L	1	7/13/2022 10:57:24 AM	68468
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	7/13/2022 10:57:24 AM	68468
2,4-Dinitrophenol	ND	16	20		µg/L	1	7/13/2022 10:57:24 AM	68468
2-Methylphenol	ND	5.0	10		µg/L	1	7/13/2022 10:57:24 AM	68468
3+4-Methylphenol	ND	5.1	10		µg/L	1	7/13/2022 10:57:24 AM	68468
Phenol	ND	18	20		µg/L	1	7/13/2022 10:57:24 AM	68468
Pyridine	ND	14	40		µg/L	1	7/13/2022 10:57:24 AM	68468
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	7/13/2022 10:57:24 AM	68468
Surr: 2-Fluorophenol	58.2	0	29.4-87.7		%Rec	1	7/13/2022 10:57:24 AM	68468
Surr: Phenol-d5	44.5	0	28.5-64.7		%Rec	1	7/13/2022 10:57:24 AM	68468
Surr: 2,4,6-Tribromophenol	65.5	0	18.6-129		%Rec	1	7/13/2022 10:57:24 AM	68468
Surr: Nitrobenzene-d5	75.9	0	36.9-103		%Rec	1	7/13/2022 10:57:24 AM	68468
Surr: 2-Fluorobiphenyl	65.9	0	38.1-99.9		%Rec	1	7/13/2022 10:57:24 AM	68468
Surr: 4-Terphenyl-d14	93.5	0	48-155		%Rec	1	7/13/2022 10:57:24 AM	68468
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	0.58	0.11	1.0	J	µg/L	1	7/7/2022 3:09:00 PM	68468
Naphthalene	ND	0.20	0.30		µg/L	1	7/7/2022 3:09:00 PM	68468
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	7/7/2022 3:09:00 PM	68468
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	7/7/2022 3:09:00 PM	68468
Acenaphthene	ND	0.14	0.30		µg/L	1	7/7/2022 3:09:00 PM	68468
Fluorene	ND	0.095	0.30		µg/L	1	7/7/2022 3:09:00 PM	68468
Phenanthrene	ND	0.16	0.30		µg/L	1	7/7/2022 3:09:00 PM	68468
Anthracene	ND	0.14	0.30		µg/L	1	7/7/2022 3:09:00 PM	68468
Fluoranthene	ND	0.14	0.30		µg/L	1	7/7/2022 3:09:00 PM	68468

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order **2206E09**
Date Reported: **7/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** KA-3
Project: 2022 GW Sampling 2nd Quarter **Collection Date:** 6/24/2022 10:05:00 AM
Lab ID: 2206E09-006 **Matrix:** GROUNDWA **Received Date:** 6/24/2022 2:57:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Pyrene	ND	0.32	1.0		µg/L	1	7/7/2022 3:09:00 PM	68468
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	7/7/2022 3:09:00 PM	68468
Chrysene	ND	0.25	0.30		µg/L	1	7/7/2022 3:09:00 PM	68468
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	7/7/2022 3:09:00 PM	68468
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	7/7/2022 3:09:00 PM	68468
Surr: Nitrobenzene-d5	72.6	0	31.6-100		%Rec	1	7/7/2022 3:09:00 PM	68468
Surr: 2-Fluorobiphenyl	64.0	0	26.7-90.1		%Rec	1	7/7/2022 3:09:00 PM	68468
Surr: 4-Terphenyl-d14	78.6	0	72.3-147		%Rec	1	7/7/2022 3:09:00 PM	68468
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	3.9	0.23	1.0		µg/L	1	7/5/2022 4:25:17 PM	R89248
Toluene	ND	0.20	1.0		µg/L	1	7/5/2022 4:25:17 PM	R89248
Ethylbenzene	8.6	0.21	1.0		µg/L	1	7/5/2022 4:25:17 PM	R89248
Methyl tert-butyl ether (MTBE)	78	0.39	1.0		µg/L	1	7/5/2022 4:25:17 PM	R89248
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	7/5/2022 4:25:17 PM	R89248
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	7/5/2022 4:25:17 PM	R89248
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	7/5/2022 4:25:17 PM	R89248
Acetone	2.7	2.5	10	J	µg/L	1	7/5/2022 4:25:17 PM	R89248
Bromomethane	ND	0.85	3.0		µg/L	1	7/5/2022 4:25:17 PM	R89248
2-Butanone	ND	2.0	10		µg/L	1	7/5/2022 4:25:17 PM	R89248
Carbon disulfide	ND	0.59	10		µg/L	1	7/5/2022 4:25:17 PM	R89248
Chlorobenzene	ND	0.16	1.0		µg/L	1	7/5/2022 4:25:17 PM	R89248
Chloroform	0.25	0.13	1.0	J	µg/L	1	7/5/2022 4:25:17 PM	R89248
Chloromethane	ND	0.41	3.0		µg/L	1	7/5/2022 4:25:17 PM	R89248
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	7/5/2022 4:25:17 PM	R89248
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	7/5/2022 4:25:17 PM	R89248
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	7/5/2022 4:25:17 PM	R89248
Isopropylbenzene	1.7	0.18	1.0		µg/L	1	7/5/2022 4:25:17 PM	R89248
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	7/5/2022 4:25:17 PM	R89248
Methylene Chloride	ND	0.50	3.0		µg/L	1	7/5/2022 4:25:17 PM	R89248
n-Butylbenzene	ND	0.25	3.0		µg/L	1	7/5/2022 4:25:17 PM	R89248
n-Propylbenzene	0.59	0.18	1.0	J	µg/L	1	7/5/2022 4:25:17 PM	R89248
sec-Butylbenzene	0.26	0.14	1.0	J	µg/L	1	7/5/2022 4:25:17 PM	R89248
Styrene	ND	0.14	1.0		µg/L	1	7/5/2022 4:25:17 PM	R89248
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	7/5/2022 4:25:17 PM	R89248
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	7/5/2022 4:25:17 PM	R89248
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	7/5/2022 4:25:17 PM	R89248
Vinyl chloride	ND	0.32	1.0		µg/L	1	7/5/2022 4:25:17 PM	R89248
Xylenes, Total	0.72	0.37	1.5	J	µg/L	1	7/5/2022 4:25:17 PM	R89248
Surr: 1,2-Dichloroethane-d4	107	0	70-130		%Rec	1	7/5/2022 4:25:17 PM	R89248

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2206E09**
Date Reported: **7/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** KA-3
Project: 2022 GW Sampling 2nd Quarter **Collection Date:** 6/24/2022 10:05:00 AM
Lab ID: 2206E09-006 **Matrix:** GROUNDWA **Received Date:** 6/24/2022 2:57:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	1	7/5/2022 4:25:17 PM	R89248
Surr: Dibromofluoromethane	116	0	70-130		%Rec	1	7/5/2022 4:25:17 PM	R89248
Surr: Toluene-d8	98.2	0	70-130		%Rec	1	7/5/2022 4:25:17 PM	R89248

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2206E09**
Date Reported: **7/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** STP-1 to EP-2
Project: 2022 GW Sampling 2nd Quarter **Collection Date:** 6/24/2022 10:30:00 AM
Lab ID: 2206E09-007 **Matrix:** GROUNDWA **Received Date:** 6/24/2022 2:57:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	7/6/2022 12:56:36 AM	68526
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.040	0.016	0.064	J	mg/L	1	7/12/2022 12:03:01 PM	68464
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	7/12/2022 12:03:01 PM	68464
Surr: DNOP	25.5	0	42.2-138	S	%Rec	1	7/12/2022 12:03:01 PM	68464
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	6/28/2022 10:37:39 PM	A89090
Surr: BFB	98.7	0	70-130		%Rec	1	6/28/2022 10:37:39 PM	A89090
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.040	0.0011	0.0020		mg/L	1	6/27/2022 4:43:10 PM	B89068
Beryllium	ND	0.00088	0.0020		mg/L	1	6/27/2022 4:43:10 PM	B89068
Cadmium	ND	0.00098	0.0020		mg/L	1	6/27/2022 4:43:10 PM	B89068
Chromium	ND	0.0020	0.0060		mg/L	1	6/27/2022 4:43:10 PM	B89068
Cobalt	ND	0.0024	0.0060		mg/L	1	6/27/2022 4:43:10 PM	B89068
Nickel	ND	0.0033	0.010		mg/L	1	6/27/2022 4:43:10 PM	B89068
Silver	0.0048	0.0013	0.0050	J	mg/L	1	6/27/2022 4:43:10 PM	B89068
Vanadium	0.0022	0.0017	0.050	J	mg/L	1	6/27/2022 4:43:10 PM	B89068
Zinc	0.025	0.0032	0.010		mg/L	1	6/27/2022 4:43:10 PM	B89068
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	0.048	0.0016	0.0030		mg/L	1	6/29/2022 9:48:53 PM	68406
Beryllium	ND	0.00088	0.0020		mg/L	1	6/29/2022 9:48:53 PM	68406
Cadmium	ND	0.0018	0.0020		mg/L	1	6/29/2022 9:48:53 PM	68406
Chromium	ND	0.0020	0.0060		mg/L	1	6/29/2022 9:48:53 PM	68406
Cobalt	ND	0.0035	0.0060		mg/L	1	6/29/2022 9:48:53 PM	68406
Nickel	ND	0.0053	0.010		mg/L	1	6/29/2022 9:48:53 PM	68406
Silver	0.0044	0.0018	0.0050	J	mg/L	1	6/29/2022 9:48:53 PM	68406
Vanadium	ND	0.0035	0.050		mg/L	1	6/29/2022 9:48:53 PM	68406
Zinc	0.046	0.0039	0.010		mg/L	1	6/29/2022 9:48:53 PM	68406
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	0.0012	0.00044	0.0010		mg/L	1	6/27/2022 3:05:42 PM	B89062
Arsenic	0.0038	0.00012	0.0010		mg/L	1	6/27/2022 3:05:42 PM	B89062
Lead	ND	0.000057	0.00050		mg/L	1	6/27/2022 3:05:42 PM	B89062
Selenium	0.00045	0.00034	0.0010	J	mg/L	1	6/27/2022 3:05:42 PM	B89062
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	0.00056	0.00044	0.0010	J	mg/L	1	6/30/2022 1:46:46 PM	68406
Arsenic	0.0044	0.00013	0.0010		mg/L	1	6/30/2022 1:46:46 PM	68406

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2206E09**
Date Reported: **7/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** STP-1 to EP-2
Project: 2022 GW Sampling 2nd Quarter **Collection Date:** 6/24/2022 10:30:00 AM
Lab ID: 2206E09-007 **Matrix:** GROUNDWA **Received Date:** 6/24/2022 2:57:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **bcv**	
Lead	0.00021	0.000061	0.00050	J	mg/L	1	6/30/2022 1:46:46 PM	68406
Selenium	0.00043	0.00037	0.0010	J	mg/L	1	6/30/2022 1:46:46 PM	68406
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/1/2022 1:57:36 PM	68497
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/1/2022 2:04:00 PM	68497
SM5210B: BOD							Analyst: **dms**	
Biochemical Oxygen Demand	38	2.0	2.0		mg/L	1	6/29/2022 1:38:00 PM	68337
SM 9223B FECAL INDICATOR: E. COLI MPN							Analyst: **dms**	
E. Coli	>24196	10.00	10.00		MPN/100	10	6/25/2022 5:08:00 PM	68346
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	180	200	D	µg/L	10	7/13/2022 11:38:53 AM	68468
Bis(2-ethylhexyl)phthalate	ND	84	100	D	µg/L	10	7/13/2022 11:38:53 AM	68468
Di-n-butyl phthalate	ND	77	100	D	µg/L	10	7/13/2022 11:38:53 AM	68468
Di-n-octyl phthalate	ND	120	200	D	µg/L	10	7/13/2022 11:38:53 AM	68468
1,4-Dichlorobenzene	ND	24	50	D	µg/L	10	7/13/2022 11:38:53 AM	68468
Diethyl phthalate	ND	60	100	D	µg/L	10	7/13/2022 11:38:53 AM	68468
Dimethyl phthalate	ND	60	100	D	µg/L	10	7/13/2022 11:38:53 AM	68468
2,4-Dimethylphenol	ND	58	100	D	µg/L	10	7/13/2022 11:38:53 AM	68468
2,4-Dinitrophenol	ND	160	200	D	µg/L	10	7/13/2022 11:38:53 AM	68468
2-Methylphenol	ND	50	100	D	µg/L	10	7/13/2022 11:38:53 AM	68468
3+4-Methylphenol	ND	51	100	D	µg/L	10	7/13/2022 11:38:53 AM	68468
Phenol	ND	180	200	D	µg/L	10	7/13/2022 11:38:53 AM	68468
Pyridine	ND	140	400	D	µg/L	10	7/13/2022 11:38:53 AM	68468
2,4,6-Trichlorophenol	ND	59	100	D	µg/L	10	7/13/2022 11:38:53 AM	68468
Surr: 2-Fluorophenol	0	0	29.4-87.7	SD	%Rec	10	7/13/2022 11:38:53 AM	68468
Surr: Phenol-d5	0	0	28.5-64.7	SD	%Rec	10	7/13/2022 11:38:53 AM	68468
Surr: 2,4,6-Tribromophenol	0	0	18.6-129	SD	%Rec	10	7/13/2022 11:38:53 AM	68468
Surr: Nitrobenzene-d5	0	0	36.9-103	SD	%Rec	10	7/13/2022 11:38:53 AM	68468
Surr: 2-Fluorobiphenyl	0	0	38.1-99.9	SD	%Rec	10	7/13/2022 11:38:53 AM	68468
Surr: 4-Terphenyl-d14	0	0	48-155	SD	%Rec	10	7/13/2022 11:38:53 AM	68468
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	ND	1.1	10	D	µg/L	10	7/7/2022 3:53:00 PM	68468
Naphthalene	ND	2.0	3.0	D	µg/L	10	7/7/2022 3:53:00 PM	68468
1-Methylnaphthalene	ND	1.5	3.0	D	µg/L	10	7/7/2022 3:53:00 PM	68468
2-Methylnaphthalene	ND	1.4	3.0	D	µg/L	10	7/7/2022 3:53:00 PM	68468

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2206E09**
Date Reported: **7/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** STP-1 to EP-2
Project: 2022 GW Sampling 2nd Quarter **Collection Date:** 6/24/2022 10:30:00 AM
Lab ID: 2206E09-007 **Matrix:** GROUNDWA **Received Date:** 6/24/2022 2:57:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Acenaphthene	ND	1.4	3.0	D	µg/L	10	7/7/2022 3:53:00 PM	68468
Fluorene	ND	0.95	3.0	D	µg/L	10	7/7/2022 3:53:00 PM	68468
Phenanthrene	ND	1.6	3.0	D	µg/L	10	7/7/2022 3:53:00 PM	68468
Anthracene	ND	1.4	3.0	D	µg/L	10	7/7/2022 3:53:00 PM	68468
Fluoranthene	ND	1.4	3.0	D	µg/L	10	7/7/2022 3:53:00 PM	68468
Pyrene	ND	3.2	10	D	µg/L	10	7/7/2022 3:53:00 PM	68468
Benz(a)anthracene	ND	1.5	3.0	D	µg/L	10	7/7/2022 3:53:00 PM	68468
Chrysene	ND	2.5	3.0	D	µg/L	10	7/7/2022 3:53:00 PM	68468
Benzo(b)fluoranthene	ND	1.4	3.0	D	µg/L	10	7/7/2022 3:53:00 PM	68468
Indeno(1,2,3-cd)pyrene	ND	2.3	3.0	D	µg/L	10	7/7/2022 3:53:00 PM	68468
Surr: Nitrobenzene-d5	0	0	31.6-100	SD	%Rec	10	7/7/2022 3:53:00 PM	68468
Surr: 2-Fluorobiphenyl	0	0	26.7-90.1	SD	%Rec	10	7/7/2022 3:53:00 PM	68468
Surr: 4-Terphenyl-d14	0	0	72.3-147	SD	%Rec	10	7/7/2022 3:53:00 PM	68468
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	0.23	1.0		µg/L	1	7/5/2022 4:52:32 PM	R89248
Toluene	ND	0.20	1.0		µg/L	1	7/5/2022 4:52:32 PM	R89248
Ethylbenzene	ND	0.21	1.0		µg/L	1	7/5/2022 4:52:32 PM	R89248
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	7/5/2022 4:52:32 PM	R89248
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	7/5/2022 4:52:32 PM	R89248
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	7/5/2022 4:52:32 PM	R89248
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	7/5/2022 4:52:32 PM	R89248
Acetone	4.2	2.5	10	J	µg/L	1	7/5/2022 4:52:32 PM	R89248
Bromomethane	ND	0.85	3.0		µg/L	1	7/5/2022 4:52:32 PM	R89248
2-Butanone	ND	2.0	10		µg/L	1	7/5/2022 4:52:32 PM	R89248
Carbon disulfide	ND	0.59	10		µg/L	1	7/5/2022 4:52:32 PM	R89248
Chlorobenzene	ND	0.16	1.0		µg/L	1	7/5/2022 4:52:32 PM	R89248
Chloroform	ND	0.13	1.0		µg/L	1	7/5/2022 4:52:32 PM	R89248
Chloromethane	0.61	0.41	3.0	J	µg/L	1	7/5/2022 4:52:32 PM	R89248
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	7/5/2022 4:52:32 PM	R89248
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	7/5/2022 4:52:32 PM	R89248
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	7/5/2022 4:52:32 PM	R89248
Isopropylbenzene	ND	0.18	1.0		µg/L	1	7/5/2022 4:52:32 PM	R89248
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	7/5/2022 4:52:32 PM	R89248
Methylene Chloride	ND	0.50	3.0		µg/L	1	7/5/2022 4:52:32 PM	R89248
n-Butylbenzene	ND	0.25	3.0		µg/L	1	7/5/2022 4:52:32 PM	R89248
n-Propylbenzene	ND	0.18	1.0		µg/L	1	7/5/2022 4:52:32 PM	R89248
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	7/5/2022 4:52:32 PM	R89248
Styrene	ND	0.14	1.0		µg/L	1	7/5/2022 4:52:32 PM	R89248
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	7/5/2022 4:52:32 PM	R89248

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2206E09**
Date Reported: **7/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** STP-1 to EP-2
Project: 2022 GW Sampling 2nd Quarter **Collection Date:** 6/24/2022 10:30:00 AM
Lab ID: 2206E09-007 **Matrix:** GROUNDWA **Received Date:** 6/24/2022 2:57:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	7/5/2022 4:52:32 PM	R89248
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	7/5/2022 4:52:32 PM	R89248
Vinyl chloride	ND	0.32	1.0		µg/L	1	7/5/2022 4:52:32 PM	R89248
Xylenes, Total	ND	0.37	1.5		µg/L	1	7/5/2022 4:52:32 PM	R89248
Surr: 1,2-Dichloroethane-d4	111	0	70-130		%Rec	1	7/5/2022 4:52:32 PM	R89248
Surr: 4-Bromofluorobenzene	107	0	70-130		%Rec	1	7/5/2022 4:52:32 PM	R89248
Surr: Dibromofluoromethane	120	0	70-130		%Rec	1	7/5/2022 4:52:32 PM	R89248
Surr: Toluene-d8	98.9	0	70-130		%Rec	1	7/5/2022 4:52:32 PM	R89248

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order **2206E09**
Date Reported: **7/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** EP-2
Project: 2022 GW Sampling 2nd Quarter **Collection Date:** 6/24/2022 10:50:00 AM
Lab ID: 2206E09-008 **Matrix:** GROUNDWA **Received Date:** 6/24/2022 2:57:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	7/6/2022 1:11:59 AM	68526
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.045	0.016	0.064	J	mg/L	1	7/12/2022 12:27:35 PM	68464
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	7/12/2022 12:27:35 PM	68464
Surr: DNOP	6.11	0	42.2-138	S	%Rec	1	7/12/2022 12:27:35 PM	68464
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	0.0096	0.0090	0.050	J	mg/L	1	6/28/2022 11:01:02 PM	A89090
Surr: BFB	113	0	70-130		%Rec	1	6/28/2022 11:01:02 PM	A89090
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.17	0.0011	0.0020		mg/L	1	6/27/2022 4:47:50 PM	B89068
Beryllium	ND	0.00088	0.0020		mg/L	1	6/27/2022 4:47:50 PM	B89068
Cadmium	ND	0.00098	0.0020		mg/L	1	6/27/2022 4:47:50 PM	B89068
Chromium	ND	0.0020	0.0060		mg/L	1	6/27/2022 4:47:50 PM	B89068
Cobalt	ND	0.0024	0.0060		mg/L	1	6/27/2022 4:47:50 PM	B89068
Nickel	0.052	0.0033	0.010		mg/L	1	6/27/2022 4:47:50 PM	B89068
Silver	0.010	0.0013	0.0050		mg/L	1	6/27/2022 4:47:50 PM	B89068
Vanadium	0.0050	0.0017	0.050	J	mg/L	1	6/27/2022 4:47:50 PM	B89068
Zinc	0.011	0.0032	0.010		mg/L	1	6/27/2022 4:47:50 PM	B89068
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	0.17	0.0016	0.0030		mg/L	1	6/29/2022 9:51:07 PM	68406
Beryllium	ND	0.00088	0.0020		mg/L	1	6/29/2022 9:51:07 PM	68406
Cadmium	ND	0.0018	0.0020		mg/L	1	6/29/2022 9:51:07 PM	68406
Chromium	ND	0.0020	0.0060		mg/L	1	6/29/2022 9:51:07 PM	68406
Cobalt	ND	0.0035	0.0060		mg/L	1	6/29/2022 9:51:07 PM	68406
Nickel	0.050	0.0053	0.010		mg/L	1	6/29/2022 9:51:07 PM	68406
Silver	ND	0.0018	0.0050		mg/L	1	6/30/2022 5:15:54 PM	68406
Vanadium	ND	0.0035	0.050		mg/L	1	6/29/2022 9:51:07 PM	68406
Zinc	0.0044	0.0039	0.010	J	mg/L	1	6/29/2022 9:51:07 PM	68406
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0044	0.010		mg/L	10	6/29/2022 3:00:42 PM	C89140
Arsenic	0.010	0.0012	0.010	*	mg/L	10	6/29/2022 3:00:42 PM	C89140
Lead	ND	0.00057	0.0050		mg/L	10	6/29/2022 3:00:42 PM	C89140
Selenium	ND	0.0034	0.010		mg/L	10	6/29/2022 3:00:42 PM	C89140
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	6/30/2022 2:43:37 PM	68406
Arsenic	0.011	0.00063	0.0050	*	mg/L	5	6/30/2022 2:43:37 PM	68406

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Estimated value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference

Analytical Report
Lab Order **2206E09**
Date Reported: **7/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** EP-2
Project: 2022 GW Sampling 2nd Quarter **Collection Date:** 6/24/2022 10:50:00 AM
Lab ID: 2206E09-008 **Matrix:** GROUNDWA **Received Date:** 6/24/2022 2:57:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **bcv**	
Lead	ND	0.00031	0.0025		mg/L	5	6/30/2022 2:43:37 PM	68406
Selenium	ND	0.0019	0.0050		mg/L	5	6/30/2022 2:43:37 PM	68406
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/1/2022 2:06:08 PM	68497
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/1/2022 2:08:16 PM	68497
SM5210B: BOD							Analyst: **dms**	
Biochemical Oxygen Demand	63	2.0	2.0		mg/L	1	6/29/2022 1:38:00 PM	68337
SM 9223B FECAL INDICATOR: E. COLI MPN							Analyst: **dms**	
E. Coli	10	10.00	10.00		MPN/100	10	6/25/2022 5:08:00 PM	68346
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	1800	2000	D	µg/L	10	7/13/2022 12:20:43 PM	68468
Bis(2-ethylhexyl)phthalate	ND	840	1000	D	µg/L	10	7/13/2022 12:20:43 PM	68468
Di-n-butyl phthalate	ND	770	1000	D	µg/L	10	7/13/2022 12:20:43 PM	68468
Di-n-octyl phthalate	ND	1200	2000	D	µg/L	10	7/13/2022 12:20:43 PM	68468
1,4-Dichlorobenzene	ND	240	500	D	µg/L	10	7/13/2022 12:20:43 PM	68468
Diethyl phthalate	ND	600	1000	D	µg/L	10	7/13/2022 12:20:43 PM	68468
Dimethyl phthalate	ND	600	1000	D	µg/L	10	7/13/2022 12:20:43 PM	68468
2,4-Dimethylphenol	ND	580	1000	D	µg/L	10	7/13/2022 12:20:43 PM	68468
2,4-Dinitrophenol	ND	1600	2000	D	µg/L	10	7/13/2022 12:20:43 PM	68468
2-Methylphenol	ND	500	1000	D	µg/L	10	7/13/2022 12:20:43 PM	68468
3+4-Methylphenol	ND	510	1000	D	µg/L	10	7/13/2022 12:20:43 PM	68468
Phenol	ND	1800	2000	D	µg/L	10	7/13/2022 12:20:43 PM	68468
Pyridine	ND	1400	4000	D	µg/L	10	7/13/2022 12:20:43 PM	68468
2,4,6-Trichlorophenol	ND	590	1000	D	µg/L	10	7/13/2022 12:20:43 PM	68468
Surr: 2-Fluorophenol	0	0	29.4-87.7	SD	%Rec	10	7/13/2022 12:20:43 PM	68468
Surr: Phenol-d5	0	0	28.5-64.7	SD	%Rec	10	7/13/2022 12:20:43 PM	68468
Surr: 2,4,6-Tribromophenol	0	0	18.6-129	SD	%Rec	10	7/13/2022 12:20:43 PM	68468
Surr: Nitrobenzene-d5	0	0	36.9-103	SD	%Rec	10	7/13/2022 12:20:43 PM	68468
Surr: 2-Fluorobiphenyl	0	0	38.1-99.9	SD	%Rec	10	7/13/2022 12:20:43 PM	68468
Surr: 4-Terphenyl-d14	0	0	48-155	SD	%Rec	10	7/13/2022 12:20:43 PM	68468
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	ND	11	100	D	µg/L	10	7/7/2022 4:38:00 PM	68468
Naphthalene	ND	20	30	D	µg/L	10	7/7/2022 4:38:00 PM	68468
1-Methylnaphthalene	ND	15	30	D	µg/L	10	7/7/2022 4:38:00 PM	68468
2-Methylnaphthalene	ND	14	30	D	µg/L	10	7/7/2022 4:38:00 PM	68468

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2206E09**
Date Reported: **7/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** EP-2
Project: 2022 GW Sampling 2nd Quarter **Collection Date:** 6/24/2022 10:50:00 AM
Lab ID: 2206E09-008 **Matrix:** GROUNDWA **Received Date:** 6/24/2022 2:57:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Acenaphthene	ND	14	30	D	µg/L	10	7/7/2022 4:38:00 PM	68468
Fluorene	ND	9.5	30	D	µg/L	10	7/7/2022 4:38:00 PM	68468
Phenanthrene	ND	16	30	D	µg/L	10	7/7/2022 4:38:00 PM	68468
Anthracene	ND	14	30	D	µg/L	10	7/7/2022 4:38:00 PM	68468
Fluoranthene	ND	14	30	D	µg/L	10	7/7/2022 4:38:00 PM	68468
Pyrene	ND	32	100	D	µg/L	10	7/7/2022 4:38:00 PM	68468
Benz(a)anthracene	ND	15	30	D	µg/L	10	7/7/2022 4:38:00 PM	68468
Chrysene	ND	25	30	D	µg/L	10	7/7/2022 4:38:00 PM	68468
Benzo(b)fluoranthene	ND	14	30	D	µg/L	10	7/7/2022 4:38:00 PM	68468
Indeno(1,2,3-cd)pyrene	ND	23	30	D	µg/L	10	7/7/2022 4:38:00 PM	68468
Surr: Nitrobenzene-d5	0	0	31.6-100	SD	%Rec	10	7/7/2022 4:38:00 PM	68468
Surr: 2-Fluorobiphenyl	0	0	26.7-90.1	SD	%Rec	10	7/7/2022 4:38:00 PM	68468
Surr: 4-Terphenyl-d14	0	0	72.3-147	SD	%Rec	10	7/7/2022 4:38:00 PM	68468
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	0.23	1.0		µg/L	1	7/5/2022 5:19:49 PM	R89248
Toluene	ND	0.20	1.0		µg/L	1	7/5/2022 5:19:49 PM	R89248
Ethylbenzene	ND	0.21	1.0		µg/L	1	7/5/2022 5:19:49 PM	R89248
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	7/5/2022 5:19:49 PM	R89248
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	7/5/2022 5:19:49 PM	R89248
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	7/5/2022 5:19:49 PM	R89248
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	7/5/2022 5:19:49 PM	R89248
Acetone	10	2.5	10		µg/L	1	7/5/2022 5:19:49 PM	R89248
Bromomethane	ND	0.85	3.0		µg/L	1	7/5/2022 5:19:49 PM	R89248
2-Butanone	ND	2.0	10		µg/L	1	7/5/2022 5:19:49 PM	R89248
Carbon disulfide	1.3	0.59	10	J	µg/L	1	7/5/2022 5:19:49 PM	R89248
Chlorobenzene	ND	0.16	1.0		µg/L	1	7/5/2022 5:19:49 PM	R89248
Chloroform	ND	0.13	1.0		µg/L	1	7/5/2022 5:19:49 PM	R89248
Chloromethane	0.76	0.41	3.0	J	µg/L	1	7/5/2022 5:19:49 PM	R89248
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	7/5/2022 5:19:49 PM	R89248
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	7/5/2022 5:19:49 PM	R89248
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	7/5/2022 5:19:49 PM	R89248
Isopropylbenzene	ND	0.18	1.0		µg/L	1	7/5/2022 5:19:49 PM	R89248
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	7/5/2022 5:19:49 PM	R89248
Methylene Chloride	ND	0.50	3.0		µg/L	1	7/5/2022 5:19:49 PM	R89248
n-Butylbenzene	ND	0.25	3.0		µg/L	1	7/5/2022 5:19:49 PM	R89248
n-Propylbenzene	ND	0.18	1.0		µg/L	1	7/5/2022 5:19:49 PM	R89248
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	7/5/2022 5:19:49 PM	R89248
Styrene	ND	0.14	1.0		µg/L	1	7/5/2022 5:19:49 PM	R89248
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	7/5/2022 5:19:49 PM	R89248

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order **2206E09**
Date Reported: **7/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** EP-2
Project: 2022 GW Sampling 2nd Quarter **Collection Date:** 6/24/2022 10:50:00 AM
Lab ID: 2206E09-008 **Matrix:** GROUNDWA **Received Date:** 6/24/2022 2:57:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	7/5/2022 5:19:49 PM	R89248
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	7/5/2022 5:19:49 PM	R89248
Vinyl chloride	ND	0.32	1.0		µg/L	1	7/5/2022 5:19:49 PM	R89248
Xylenes, Total	0.66	0.37	1.5	J	µg/L	1	7/5/2022 5:19:49 PM	R89248
Surr: 1,2-Dichloroethane-d4	118	0	70-130		%Rec	1	7/5/2022 5:19:49 PM	R89248
Surr: 4-Bromofluorobenzene	108	0	70-130		%Rec	1	7/5/2022 5:19:49 PM	R89248
Surr: Dibromofluoromethane	116	0	70-130		%Rec	1	7/5/2022 5:19:49 PM	R89248
Surr: Toluene-d8	102	0	70-130		%Rec	1	7/5/2022 5:19:49 PM	R89248

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2206E09**
Date Reported: **7/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** EP-6
Project: 2022 GW Sampling 2nd Quarter **Collection Date:** 6/24/2022 11:20:00 AM
Lab ID: 2206E09-009 **Matrix:** GROUNDWA **Received Date:** 6/24/2022 2:57:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0025	0.0088		µg/L	1	7/6/2022 1:27:16 AM	68526
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **ED**	
Diesel Range Organics (DRO)	0.90	0.016	0.064		mg/L	1	7/9/2022 9:39:44 PM	68464
Motor Oil Range Organics (MRO)	0.058	0.052	0.080	J	mg/L	1	7/9/2022 9:39:44 PM	68464
Surr: DNOP	49.8	0	42.2-138		%Rec	1	7/9/2022 9:39:44 PM	68464
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	6/28/2022 11:24:31 PM	A89090
Surr: BFB	97.0	0	70-130		%Rec	1	6/28/2022 11:24:31 PM	A89090
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.32	0.0056	0.010		mg/L	5	6/27/2022 4:54:46 PM	B89068
Beryllium	ND	0.0044	0.010		mg/L	5	6/27/2022 4:54:46 PM	B89068
Cadmium	ND	0.0049	0.010		mg/L	5	6/27/2022 4:54:46 PM	B89068
Chromium	0.021	0.0098	0.030	J	mg/L	5	6/27/2022 4:54:46 PM	B89068
Cobalt	ND	0.012	0.030		mg/L	5	6/27/2022 4:54:46 PM	B89068
Nickel	0.20	0.016	0.050	*	mg/L	5	6/27/2022 4:54:46 PM	B89068
Silver	0.026	0.0063	0.025		mg/L	5	6/27/2022 4:54:46 PM	B89068
Vanadium	0.016	0.0086	0.25	J	mg/L	5	6/27/2022 4:54:46 PM	B89068
Zinc	ND	0.016	0.050		mg/L	5	6/27/2022 4:54:46 PM	B89068
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.31	0.016	0.030		mg/L	10	7/7/2022 11:33:07 AM	68406
Beryllium	ND	0.0088	0.020		mg/L	10	7/7/2022 11:33:07 AM	68406
Cadmium	ND	0.018	0.020		mg/L	10	7/7/2022 11:33:07 AM	68406
Chromium	ND	0.020	0.060		mg/L	10	7/7/2022 11:33:07 AM	68406
Cobalt	ND	0.035	0.060		mg/L	10	7/7/2022 11:33:07 AM	68406
Nickel	0.24	0.053	0.10	*	mg/L	10	6/30/2022 5:31:57 PM	68406
Silver	ND	0.018	0.050		mg/L	10	6/30/2022 5:31:57 PM	68406
Vanadium	ND	0.035	0.50		mg/L	10	7/7/2022 11:33:07 AM	68406
Zinc	ND	0.039	0.10		mg/L	10	6/30/2022 5:31:57 PM	68406
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.022	0.050		mg/L	50	6/29/2022 3:03:24 PM	C89140
Arsenic	0.13	0.0061	0.050	*	mg/L	50	6/29/2022 3:03:24 PM	C89140
Lead	ND	0.0028	0.025		mg/L	50	6/29/2022 3:03:24 PM	C89140
Selenium	ND	0.017	0.050		mg/L	50	6/29/2022 3:03:24 PM	C89140
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0089	0.020		mg/L	20	6/30/2022 2:46:04 PM	68406
Arsenic	0.13	0.0025	0.020	*	mg/L	20	6/30/2022 2:46:04 PM	68406

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Estimated value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference

Analytical Report
Lab Order **2206E09**
Date Reported: **7/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** EP-6
Project: 2022 GW Sampling 2nd Quarter **Collection Date:** 6/24/2022 11:20:00 AM
Lab ID: 2206E09-009 **Matrix:** GROUNDWA **Received Date:** 6/24/2022 2:57:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **bcv**	
Lead	ND	0.0061	0.050		mg/L	100	7/5/2022 2:41:41 PM	68406
Selenium	0.011	0.0074	0.020	J	mg/L	20	6/30/2022 2:46:04 PM	68406
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/1/2022 2:10:25 PM	68497
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/1/2022 2:12:33 PM	68497
SM5210B: BOD							Analyst: **dms**	
Biochemical Oxygen Demand	50	2.0	2.0		mg/L	1	6/29/2022 1:38:00 PM	68337
SM 9223B FECAL INDICATOR: E. COLI MPN							Analyst: **dms**	
E. Coli	<10	10.00	10.00		MPN/100	10	6/25/2022 5:08:00 PM	68346
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	700	800	D	µg/L	10	7/13/2022 1:06:42 PM	68468
Bis(2-ethylhexyl)phthalate	ND	340	400	D	µg/L	10	7/13/2022 1:06:42 PM	68468
Di-n-butyl phthalate	ND	310	400	D	µg/L	10	7/13/2022 1:06:42 PM	68468
Di-n-octyl phthalate	ND	470	800	D	µg/L	10	7/13/2022 1:06:42 PM	68468
1,4-Dichlorobenzene	ND	98	200	D	µg/L	10	7/13/2022 1:06:42 PM	68468
Diethyl phthalate	ND	240	400	D	µg/L	10	7/13/2022 1:06:42 PM	68468
Dimethyl phthalate	ND	240	400	D	µg/L	10	7/13/2022 1:06:42 PM	68468
2,4-Dimethylphenol	ND	230	400	D	µg/L	10	7/13/2022 1:06:42 PM	68468
2,4-Dinitrophenol	ND	650	800	D	µg/L	10	7/13/2022 1:06:42 PM	68468
2-Methylphenol	ND	200	400	D	µg/L	10	7/13/2022 1:06:42 PM	68468
3+4-Methylphenol	ND	200	400	D	µg/L	10	7/13/2022 1:06:42 PM	68468
Phenol	ND	730	800	D	µg/L	10	7/13/2022 1:06:42 PM	68468
Pyridine	ND	580	1600	D	µg/L	10	7/13/2022 1:06:42 PM	68468
2,4,6-Trichlorophenol	ND	240	400	D	µg/L	10	7/13/2022 1:06:42 PM	68468
Surr: 2-Fluorophenol	0	0	29.4-87.7	SD	%Rec	10	7/13/2022 1:06:42 PM	68468
Surr: Phenol-d5	0	0	28.5-64.7	SD	%Rec	10	7/13/2022 1:06:42 PM	68468
Surr: 2,4,6-Tribromophenol	0	0	18.6-129	SD	%Rec	10	7/13/2022 1:06:42 PM	68468
Surr: Nitrobenzene-d5	0	0	36.9-103	SD	%Rec	10	7/13/2022 1:06:42 PM	68468
Surr: 2-Fluorobiphenyl	0	0	38.1-99.9	SD	%Rec	10	7/13/2022 1:06:42 PM	68468
Surr: 4-Terphenyl-d14	0	0	48-155	SD	%Rec	10	7/13/2022 1:06:42 PM	68468
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	ND	4.2	40	D	µg/L	10	7/7/2022 5:23:00 PM	68468
Naphthalene	ND	8.0	12	D	µg/L	10	7/7/2022 5:23:00 PM	68468
1-Methylnaphthalene	ND	6.1	12	D	µg/L	10	7/7/2022 5:23:00 PM	68468
2-Methylnaphthalene	ND	5.8	12	D	µg/L	10	7/7/2022 5:23:00 PM	68468

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2206E09**
Date Reported: **7/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** EP-6
Project: 2022 GW Sampling 2nd Quarter **Collection Date:** 6/24/2022 11:20:00 AM
Lab ID: 2206E09-009 **Matrix:** GROUNDWA **Received Date:** 6/24/2022 2:57:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Acenaphthene	ND	5.4	12	D	µg/L	10	7/7/2022 5:23:00 PM	68468
Fluorene	ND	3.8	12	D	µg/L	10	7/7/2022 5:23:00 PM	68468
Phenanthrene	ND	6.2	12	D	µg/L	10	7/7/2022 5:23:00 PM	68468
Anthracene	ND	5.8	12	D	µg/L	10	7/7/2022 5:23:00 PM	68468
Fluoranthene	ND	5.6	12	D	µg/L	10	7/7/2022 5:23:00 PM	68468
Pyrene	ND	13	40	D	µg/L	10	7/7/2022 5:23:00 PM	68468
Benz(a)anthracene	ND	6.0	12	D	µg/L	10	7/7/2022 5:23:00 PM	68468
Chrysene	ND	10	12	D	µg/L	10	7/7/2022 5:23:00 PM	68468
Benzo(b)fluoranthene	ND	5.6	12	D	µg/L	10	7/7/2022 5:23:00 PM	68468
Indeno(1,2,3-cd)pyrene	ND	9.3	12	D	µg/L	10	7/7/2022 5:23:00 PM	68468
Surr: Nitrobenzene-d5	0	0	31.6-100	SD	%Rec	10	7/7/2022 5:23:00 PM	68468
Surr: 2-Fluorobiphenyl	0	0	26.7-90.1	SD	%Rec	10	7/7/2022 5:23:00 PM	68468
Surr: 4-Terphenyl-d14	0	0	72.3-147	SD	%Rec	10	7/7/2022 5:23:00 PM	68468
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	0.23	1.0		µg/L	1	7/5/2022 5:47:02 PM	R89248
Toluene	ND	0.20	1.0		µg/L	1	7/5/2022 5:47:02 PM	R89248
Ethylbenzene	ND	0.21	1.0		µg/L	1	7/5/2022 5:47:02 PM	R89248
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	7/5/2022 5:47:02 PM	R89248
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	7/5/2022 5:47:02 PM	R89248
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	7/5/2022 5:47:02 PM	R89248
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	7/5/2022 5:47:02 PM	R89248
Acetone	23	2.5	10		µg/L	1	7/5/2022 5:47:02 PM	R89248
Bromomethane	ND	0.85	3.0		µg/L	1	7/5/2022 5:47:02 PM	R89248
2-Butanone	ND	2.0	10		µg/L	1	7/5/2022 5:47:02 PM	R89248
Carbon disulfide	ND	0.59	10		µg/L	1	7/5/2022 5:47:02 PM	R89248
Chlorobenzene	ND	0.16	1.0		µg/L	1	7/5/2022 5:47:02 PM	R89248
Chloroform	ND	0.13	1.0		µg/L	1	7/5/2022 5:47:02 PM	R89248
Chloromethane	1.4	0.41	3.0	J	µg/L	1	7/5/2022 5:47:02 PM	R89248
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	7/5/2022 5:47:02 PM	R89248
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	7/5/2022 5:47:02 PM	R89248
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	7/5/2022 5:47:02 PM	R89248
Isopropylbenzene	ND	0.18	1.0		µg/L	1	7/5/2022 5:47:02 PM	R89248
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	7/5/2022 5:47:02 PM	R89248
Methylene Chloride	ND	0.50	3.0		µg/L	1	7/5/2022 5:47:02 PM	R89248
n-Butylbenzene	ND	0.25	3.0		µg/L	1	7/5/2022 5:47:02 PM	R89248
n-Propylbenzene	ND	0.18	1.0		µg/L	1	7/5/2022 5:47:02 PM	R89248
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	7/5/2022 5:47:02 PM	R89248
Styrene	ND	0.14	1.0		µg/L	1	7/5/2022 5:47:02 PM	R89248
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	7/5/2022 5:47:02 PM	R89248

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order **2206E09**
Date Reported: **7/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** EP-6
Project: 2022 GW Sampling 2nd Quarter **Collection Date:** 6/24/2022 11:20:00 AM
Lab ID: 2206E09-009 **Matrix:** GROUNDWA **Received Date:** 6/24/2022 2:57:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	7/5/2022 5:47:02 PM	R89248
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	7/5/2022 5:47:02 PM	R89248
Vinyl chloride	ND	0.32	1.0		µg/L	1	7/5/2022 5:47:02 PM	R89248
Xylenes, Total	0.65	0.37	1.5	J	µg/L	1	7/5/2022 5:47:02 PM	R89248
Surr: 1,2-Dichloroethane-d4	114	0	70-130		%Rec	1	7/5/2022 5:47:02 PM	R89248
Surr: 4-Bromofluorobenzene	107	0	70-130		%Rec	1	7/5/2022 5:47:02 PM	R89248
Surr: Dibromofluoromethane	121	0	70-130		%Rec	1	7/5/2022 5:47:02 PM	R89248
Surr: Toluene-d8	100	0	70-130		%Rec	1	7/5/2022 5:47:02 PM	R89248

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2206E09**
Date Reported: **7/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FB-6-24-22
Project: 2022 GW Sampling 2nd Quarter **Collection Date:** 6/24/2022 11:20:00 AM
Lab ID: 2206E09-010 **Matrix:** GROUNDWA **Received Date:** 6/24/2022 2:57:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	0.23	1.0		µg/L	1	7/5/2022 6:14:14 PM	R89248
Toluene	0.22	0.20	1.0	J	µg/L	1	7/5/2022 6:14:14 PM	R89248
Ethylbenzene	ND	0.21	1.0		µg/L	1	7/5/2022 6:14:14 PM	R89248
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	7/5/2022 6:14:14 PM	R89248
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	7/5/2022 6:14:14 PM	R89248
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	7/5/2022 6:14:14 PM	R89248
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	7/5/2022 6:14:14 PM	R89248
Acetone	7.4	2.5	10	J	µg/L	1	7/5/2022 6:14:14 PM	R89248
Bromomethane	ND	0.85	3.0		µg/L	1	7/5/2022 6:14:14 PM	R89248
2-Butanone	ND	2.0	10		µg/L	1	7/5/2022 6:14:14 PM	R89248
Carbon disulfide	ND	0.59	10		µg/L	1	7/5/2022 6:14:14 PM	R89248
Chlorobenzene	ND	0.16	1.0		µg/L	1	7/5/2022 6:14:14 PM	R89248
Chloroform	ND	0.13	1.0		µg/L	1	7/5/2022 6:14:14 PM	R89248
Chloromethane	ND	0.41	3.0		µg/L	1	7/5/2022 6:14:14 PM	R89248
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	7/5/2022 6:14:14 PM	R89248
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	7/5/2022 6:14:14 PM	R89248
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	7/5/2022 6:14:14 PM	R89248
Isopropylbenzene	ND	0.18	1.0		µg/L	1	7/5/2022 6:14:14 PM	R89248
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	7/5/2022 6:14:14 PM	R89248
Methylene Chloride	ND	0.50	3.0		µg/L	1	7/5/2022 6:14:14 PM	R89248
n-Butylbenzene	ND	0.25	3.0		µg/L	1	7/5/2022 6:14:14 PM	R89248
n-Propylbenzene	ND	0.18	1.0		µg/L	1	7/5/2022 6:14:14 PM	R89248
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	7/5/2022 6:14:14 PM	R89248
Styrene	ND	0.14	1.0		µg/L	1	7/5/2022 6:14:14 PM	R89248
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	7/5/2022 6:14:14 PM	R89248
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	7/5/2022 6:14:14 PM	R89248
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	7/5/2022 6:14:14 PM	R89248
Vinyl chloride	ND	0.32	1.0		µg/L	1	7/5/2022 6:14:14 PM	R89248
Xylenes, Total	0.64	0.37	1.5	J	µg/L	1	7/5/2022 6:14:14 PM	R89248
Surr: 1,2-Dichloroethane-d4	108	0	70-130		%Rec	1	7/5/2022 6:14:14 PM	R89248
Surr: 4-Bromofluorobenzene	105	0	70-130		%Rec	1	7/5/2022 6:14:14 PM	R89248
Surr: Dibromofluoromethane	117	0	70-130		%Rec	1	7/5/2022 6:14:14 PM	R89248
Surr: Toluene-d8	97.3	0	70-130		%Rec	1	7/5/2022 6:14:14 PM	R89248

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2206E09**
Date Reported: **7/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** DUP-6-24-22
Project: 2022 GW Sampling 2nd Quarter **Collection Date:** 6/24/2022
Lab ID: 2206E09-011 **Matrix:** GROUNDWA **Received Date:** 6/24/2022 2:57:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	7/6/2022 1:42:30 AM	68526
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **ED**	
Diesel Range Organics (DRO)	0.20	0.016	0.064		mg/L	1	7/9/2022 10:03:36 PM	68464
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	7/9/2022 10:03:36 PM	68464
Surr: DNOP	112	0	42.2-138		%Rec	1	7/9/2022 10:03:36 PM	68464
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	0.028	0.0090	0.050	J	mg/L	1	6/28/2022 11:47:55 PM	A89090
Surr: BFB	103	0	70-130		%Rec	1	6/28/2022 11:47:55 PM	A89090
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.054	0.0011	0.0020		mg/L	1	6/27/2022 5:04:09 PM	B89068
Beryllium	ND	0.00088	0.0020		mg/L	1	6/27/2022 5:04:09 PM	B89068
Cadmium	ND	0.00098	0.0020		mg/L	1	6/27/2022 5:04:09 PM	B89068
Chromium	ND	0.0020	0.0060		mg/L	1	6/27/2022 5:04:09 PM	B89068
Cobalt	ND	0.0024	0.0060		mg/L	1	6/27/2022 5:04:09 PM	B89068
Nickel	0.030	0.0033	0.010		mg/L	1	6/27/2022 5:04:09 PM	B89068
Silver	0.0058	0.0013	0.0050		mg/L	1	6/27/2022 5:04:09 PM	B89068
Vanadium	0.0023	0.0017	0.050	J	mg/L	1	6/27/2022 5:04:09 PM	B89068
Zinc	0.0072	0.0032	0.010	J	mg/L	1	6/27/2022 5:04:09 PM	B89068
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	0.10	0.0016	0.0030		mg/L	1	6/29/2022 10:03:32 PM	68406
Beryllium	ND	0.00088	0.0020		mg/L	1	6/29/2022 10:03:32 PM	68406
Cadmium	ND	0.0018	0.0020		mg/L	1	6/29/2022 10:03:32 PM	68406
Chromium	ND	0.0020	0.0060		mg/L	1	6/29/2022 10:03:32 PM	68406
Cobalt	ND	0.0035	0.0060		mg/L	1	6/29/2022 10:03:32 PM	68406
Nickel	0.032	0.0053	0.010		mg/L	1	6/29/2022 10:03:32 PM	68406
Silver	ND	0.0018	0.0050		mg/L	1	6/30/2022 5:24:53 PM	68406
Vanadium	0.0063	0.0035	0.050	J	mg/L	1	6/29/2022 10:03:32 PM	68406
Zinc	0.0090	0.0039	0.010	J	mg/L	1	6/29/2022 10:03:32 PM	68406
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	6/29/2022 3:14:10 PM	C89140
Arsenic	0.00092	0.00061	0.0050	J	mg/L	5	6/29/2022 3:14:10 PM	C89140
Lead	ND	0.00028	0.0025		mg/L	5	6/29/2022 3:14:10 PM	C89140
Selenium	ND	0.0017	0.0050		mg/L	5	6/29/2022 3:14:10 PM	C89140
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	6/30/2022 3:03:18 PM	68406
Arsenic	0.0013	0.00063	0.0050	J	mg/L	5	6/30/2022 3:03:18 PM	68406

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2206E09**
Date Reported: **7/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** DUP-6-24-22
Project: 2022 GW Sampling 2nd Quarter **Collection Date:** 6/24/2022
Lab ID: 2206E09-011 **Matrix:** GROUNDWA **Received Date:** 6/24/2022 2:57:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **bcv**	
Lead	0.0019	0.00031	0.0025	J	mg/L	5	6/30/2022 3:03:18 PM	68406
Selenium	0.0020	0.0019	0.0050	J	mg/L	5	6/30/2022 3:03:18 PM	68406
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/1/2022 2:14:41 PM	68497
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/1/2022 2:16:50 PM	68497
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	7/18/2022 12:18:51 PM	68468
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	7/18/2022 12:18:51 PM	68468
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	7/18/2022 12:18:51 PM	68468
Di-n-octyl phthalate	ND	12	20		µg/L	1	7/18/2022 12:18:51 PM	68468
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	7/18/2022 12:18:51 PM	68468
Diethyl phthalate	ND	6.0	10		µg/L	1	7/18/2022 12:18:51 PM	68468
Dimethyl phthalate	ND	6.0	10		µg/L	1	7/18/2022 12:18:51 PM	68468
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	7/18/2022 12:18:51 PM	68468
2,4-Dinitrophenol	ND	16	20		µg/L	1	7/18/2022 12:18:51 PM	68468
2-Methylphenol	ND	5.0	10		µg/L	1	7/18/2022 12:18:51 PM	68468
3+4-Methylphenol	ND	5.1	10		µg/L	1	7/18/2022 12:18:51 PM	68468
Phenol	ND	18	20		µg/L	1	7/18/2022 12:18:51 PM	68468
Pyridine	ND	14	40		µg/L	1	7/18/2022 12:18:51 PM	68468
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	7/18/2022 12:18:51 PM	68468
Surr: 2-Fluorophenol	51.7	0	29.4-87.7		%Rec	1	7/18/2022 12:18:51 PM	68468
Surr: Phenol-d5	41.1	0	28.5-64.7		%Rec	1	7/18/2022 12:18:51 PM	68468
Surr: 2,4,6-Tribromophenol	56.4	0	18.6-129		%Rec	1	7/18/2022 12:18:51 PM	68468
Surr: Nitrobenzene-d5	69.3	0	36.9-103		%Rec	1	7/18/2022 12:18:51 PM	68468
Surr: 2-Fluorobiphenyl	62.6	0	38.1-99.9		%Rec	1	7/18/2022 12:18:51 PM	68468
Surr: 4-Terphenyl-d14	80.4	0	48-155		%Rec	1	7/18/2022 12:18:51 PM	68468
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	7.1	0.11	1.0		µg/L	1	7/18/2022 10:53:00 AM	68468
Naphthalene	ND	0.20	0.30		µg/L	1	7/18/2022 10:53:00 AM	68468
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	7/18/2022 10:53:00 AM	68468
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	7/18/2022 10:53:00 AM	68468
Acenaphthene	ND	0.14	0.30		µg/L	1	7/18/2022 10:53:00 AM	68468
Fluorene	ND	0.095	0.30		µg/L	1	7/18/2022 10:53:00 AM	68468
Phenanthrene	ND	0.16	0.30		µg/L	1	7/18/2022 10:53:00 AM	68468
Anthracene	ND	0.14	0.30		µg/L	1	7/18/2022 10:53:00 AM	68468
Fluoranthene	ND	0.14	0.30		µg/L	1	7/18/2022 10:53:00 AM	68468

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2206E09**
Date Reported: **7/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** DUP-6-24-22
Project: 2022 GW Sampling 2nd Quarter **Collection Date:** 6/24/2022
Lab ID: 2206E09-011 **Matrix:** GROUNDWA **Received Date:** 6/24/2022 2:57:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Pyrene	ND	0.32	1.0		µg/L	1	7/18/2022 10:53:00 AM	68468
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	7/18/2022 10:53:00 AM	68468
Chrysene	ND	0.25	0.30		µg/L	1	7/18/2022 10:53:00 AM	68468
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	7/18/2022 10:53:00 AM	68468
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	7/18/2022 10:53:00 AM	68468
Surr: Nitrobenzene-d5	66.9	0	31.6-100		%Rec	1	7/18/2022 10:53:00 AM	68468
Surr: 2-Fluorobiphenyl	64.8	0	26.7-90.1		%Rec	1	7/18/2022 10:53:00 AM	68468
Surr: 4-Terphenyl-d14	87.5	0	72.3-147		%Rec	1	7/18/2022 10:53:00 AM	68468
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	0.63	0.23	1.0	J	µg/L	1	7/5/2022 6:41:28 PM	R89248
Toluene	ND	0.20	1.0		µg/L	1	7/5/2022 6:41:28 PM	R89248
Ethylbenzene	ND	0.21	1.0		µg/L	1	7/5/2022 6:41:28 PM	R89248
Methyl tert-butyl ether (MTBE)	41	0.39	1.0		µg/L	1	7/5/2022 6:41:28 PM	R89248
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	7/5/2022 6:41:28 PM	R89248
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	7/5/2022 6:41:28 PM	R89248
1,2-Dichloroethane (EDC)	0.78	0.25	1.0	J	µg/L	1	7/5/2022 6:41:28 PM	R89248
Acetone	2.9	2.5	10	J	µg/L	1	7/5/2022 6:41:28 PM	R89248
Bromomethane	ND	0.85	3.0		µg/L	1	7/5/2022 6:41:28 PM	R89248
2-Butanone	ND	2.0	10		µg/L	1	7/5/2022 6:41:28 PM	R89248
Carbon disulfide	ND	0.59	10		µg/L	1	7/5/2022 6:41:28 PM	R89248
Chlorobenzene	ND	0.16	1.0		µg/L	1	7/5/2022 6:41:28 PM	R89248
Chloroform	ND	0.13	1.0		µg/L	1	7/5/2022 6:41:28 PM	R89248
Chloromethane	ND	0.41	3.0		µg/L	1	7/5/2022 6:41:28 PM	R89248
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	7/5/2022 6:41:28 PM	R89248
1,1-Dichloroethane	1.7	0.27	1.0		µg/L	1	7/5/2022 6:41:28 PM	R89248
1,1-Dichloroethene	0.85	0.20	1.0	J	µg/L	1	7/5/2022 6:41:28 PM	R89248
Isopropylbenzene	ND	0.18	1.0		µg/L	1	7/5/2022 6:41:28 PM	R89248
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	7/5/2022 6:41:28 PM	R89248
Methylene Chloride	ND	0.50	3.0		µg/L	1	7/5/2022 6:41:28 PM	R89248
n-Butylbenzene	ND	0.25	3.0		µg/L	1	7/5/2022 6:41:28 PM	R89248
n-Propylbenzene	ND	0.18	1.0		µg/L	1	7/5/2022 6:41:28 PM	R89248
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	7/5/2022 6:41:28 PM	R89248
Styrene	ND	0.14	1.0		µg/L	1	7/5/2022 6:41:28 PM	R89248
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	7/5/2022 6:41:28 PM	R89248
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	7/5/2022 6:41:28 PM	R89248
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	7/5/2022 6:41:28 PM	R89248
Vinyl chloride	ND	0.32	1.0		µg/L	1	7/5/2022 6:41:28 PM	R89248
Xylenes, Total	ND	0.37	1.5		µg/L	1	7/5/2022 6:41:28 PM	R89248
Surr: 1,2-Dichloroethane-d4	117	0	70-130		%Rec	1	7/5/2022 6:41:28 PM	R89248

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2206E09**
Date Reported: **7/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** DUP-6-24-22
Project: 2022 GW Sampling 2nd Quarter **Collection Date:** 6/24/2022
Lab ID: 2206E09-011 **Matrix:** GROUNDWA **Received Date:** 6/24/2022 2:57:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	7/5/2022 6:41:28 PM	R89248
Surr: Dibromofluoromethane	121	0	70-130		%Rec	1	7/5/2022 6:41:28 PM	R89248
Surr: Toluene-d8	99.7	0	70-130		%Rec	1	7/5/2022 6:41:28 PM	R89248

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2206E09**
Date Reported: **7/21/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** Trip Blank
Project: 2022 GW Sampling 2nd Quarter **Collection Date:**
Lab ID: 2206E09-012 **Matrix:** GROUNDWA **Received Date:** 6/24/2022 2:57:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0027	0.0093		µg/L	1	7/6/2022 1:57:49 AM	68526
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	0.23	1.0		µg/L	1	7/5/2022 7:08:38 PM	R89248
Toluene	ND	0.20	1.0		µg/L	1	7/5/2022 7:08:38 PM	R89248
Ethylbenzene	ND	0.21	1.0		µg/L	1	7/5/2022 7:08:38 PM	R89248
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	7/5/2022 7:08:38 PM	R89248
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	7/5/2022 7:08:38 PM	R89248
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	7/5/2022 7:08:38 PM	R89248
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	7/5/2022 7:08:38 PM	R89248
Acetone	ND	2.5	10		µg/L	1	7/5/2022 7:08:38 PM	R89248
Bromomethane	ND	0.85	3.0		µg/L	1	7/5/2022 7:08:38 PM	R89248
2-Butanone	ND	2.0	10		µg/L	1	7/5/2022 7:08:38 PM	R89248
Carbon disulfide	ND	0.59	10		µg/L	1	7/5/2022 7:08:38 PM	R89248
Chlorobenzene	ND	0.16	1.0		µg/L	1	7/5/2022 7:08:38 PM	R89248
Chloroform	ND	0.13	1.0		µg/L	1	7/5/2022 7:08:38 PM	R89248
Chloromethane	ND	0.41	3.0		µg/L	1	7/5/2022 7:08:38 PM	R89248
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	7/5/2022 7:08:38 PM	R89248
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	7/5/2022 7:08:38 PM	R89248
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	7/5/2022 7:08:38 PM	R89248
Isopropylbenzene	ND	0.18	1.0		µg/L	1	7/5/2022 7:08:38 PM	R89248
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	7/5/2022 7:08:38 PM	R89248
Methylene Chloride	ND	0.50	3.0		µg/L	1	7/5/2022 7:08:38 PM	R89248
n-Butylbenzene	ND	0.25	3.0		µg/L	1	7/5/2022 7:08:38 PM	R89248
n-Propylbenzene	ND	0.18	1.0		µg/L	1	7/5/2022 7:08:38 PM	R89248
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	7/5/2022 7:08:38 PM	R89248
Styrene	ND	0.14	1.0		µg/L	1	7/5/2022 7:08:38 PM	R89248
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	7/5/2022 7:08:38 PM	R89248
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	7/5/2022 7:08:38 PM	R89248
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	7/5/2022 7:08:38 PM	R89248
Vinyl chloride	ND	0.32	1.0		µg/L	1	7/5/2022 7:08:38 PM	R89248
Xylenes, Total	ND	0.37	1.5		µg/L	1	7/5/2022 7:08:38 PM	R89248
Surr: 1,2-Dichloroethane-d4	120	0	70-130		%Rec	1	7/5/2022 7:08:38 PM	R89248
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	7/5/2022 7:08:38 PM	R89248
Surr: Dibromofluoromethane	125	0	70-130		%Rec	1	7/5/2022 7:08:38 PM	R89248
Surr: Toluene-d8	95.4	0	70-130		%Rec	1	7/5/2022 7:08:38 PM	R89248

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

ANALYTICAL REPORT

July 12, 2022

Hall Environmental Analysis Laboratory

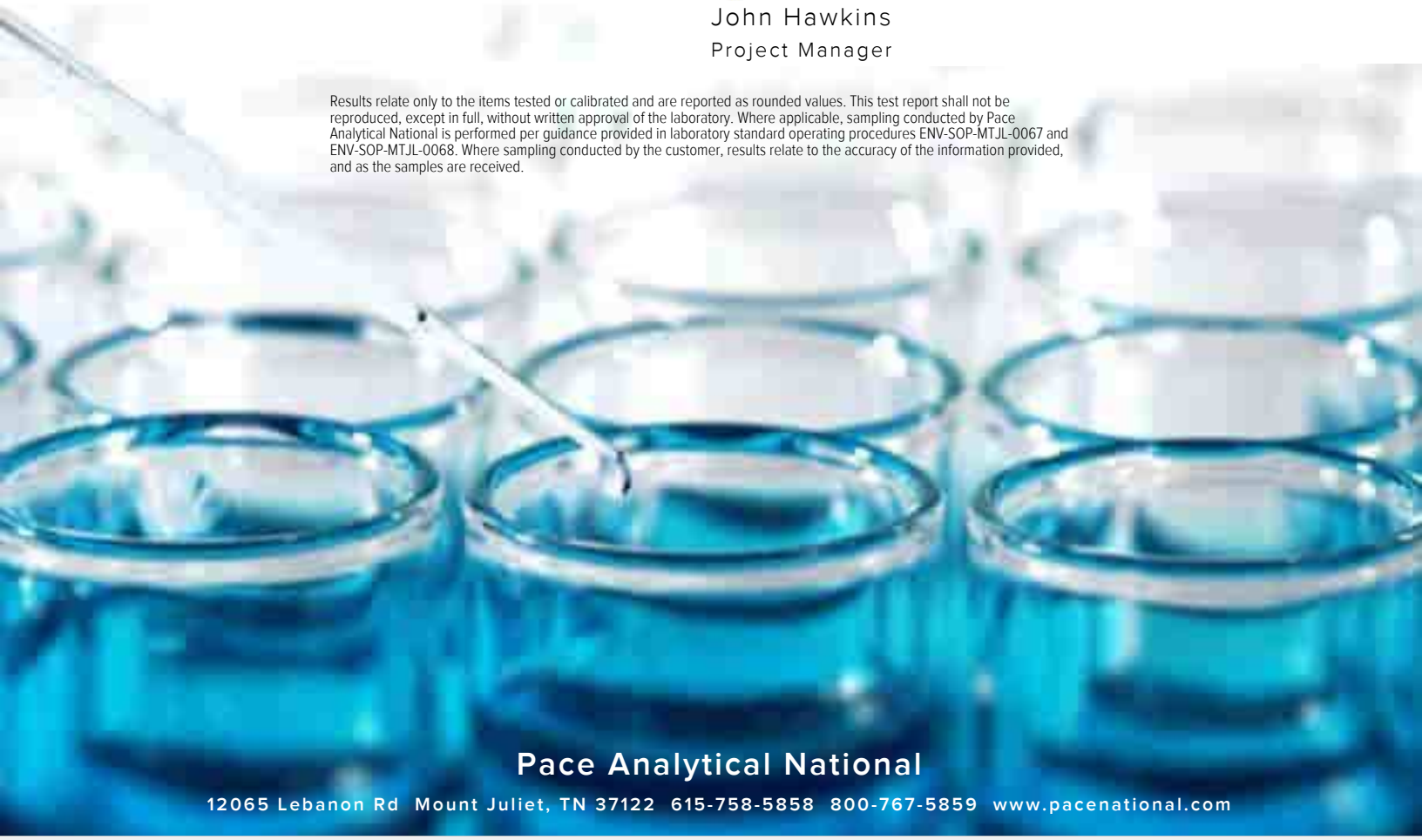
Sample Delivery Group:	L1509495
Samples Received:	06/28/2022
Project Number:	
Description:	

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By: John V Hawkins

John Hawkins
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 5

Sr: Sample Results 6

2206E09-001F EB-6-24-22 L1509495-01 6

2206E09-002F MKTF-27 L1509495-02 7

2206E09-003F MKTF-28 L1509495-03 8

2206E09-004F NAPIS-2 L1509495-04 9

2206E09-005F NAPIS-3 L1509495-05 10

2206E09-006F KA-3 L1509495-06 11

2206E09-007F STP-1 TO EP-2 L1509495-07 12

2206E09-007I STP-1 TO EP-2 L1509495-08 13

2206E09-008F EP-2 L1509495-09 14

2206E09-008I EP-2 L1509495-10 15

2206E09-009F EP-6 L1509495-11 16

2206E09-009I EP-6 L1509495-12 17

2206E09-011F DUP-24-2 L1509495-13 18

Qc: Quality Control Summary 19

Wet Chemistry by Method 410.4 19

Wet Chemistry by Method 4500CN E-2016 20

Gl: Glossary of Terms 22

Al: Accreditations & Locations 23

Sc: Sample Chain of Custody 24

2206E09-001F EB-6-24-22 L1509495-01 WW

Collected by | Collected date/time 06/24/22 08:00 | Received date/time 06/28/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1888930	1	07/03/22 19:45	07/04/22 23:19	CAT	Mt. Juliet, TN

2206E09-002F MKTF-27 L1509495-02 WW

Collected by | Collected date/time 06/24/22 08:30 | Received date/time 06/28/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1888930	1	07/03/22 19:45	07/04/22 23:23	CAT	Mt. Juliet, TN

2206E09-003F MKTF-28 L1509495-03 WW

Collected by | Collected date/time 06/24/22 09:00 | Received date/time 06/28/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1889365	1	07/05/22 07:54	07/07/22 19:29	CAT	Mt. Juliet, TN

2206E09-004F NAPIS-2 L1509495-04 WW

Collected by | Collected date/time 06/24/22 09:25 | Received date/time 06/28/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1889365	1	07/05/22 07:54	07/07/22 19:32	CAT	Mt. Juliet, TN

2206E09-005F NAPIS-3 L1509495-05 WW

Collected by | Collected date/time 06/24/22 09:45 | Received date/time 06/28/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1889365	1	07/05/22 07:54	07/07/22 19:35	CAT	Mt. Juliet, TN

2206E09-006F KA-3 L1509495-06 WW

Collected by | Collected date/time 06/24/22 10:05 | Received date/time 06/28/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1889365	1	07/05/22 07:54	07/07/22 19:36	CAT	Mt. Juliet, TN

2206E09-007F STP-1 TO EP-2 L1509495-07 WW

Collected by | Collected date/time 06/24/22 10:30 | Received date/time 06/28/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1889365	1	07/05/22 07:54	07/07/22 19:37	CAT	Mt. Juliet, TN

2206E09-007I STP-1 TO EP-2 L1509495-08 WW

Collected by | Collected date/time 06/24/22 10:30 | Received date/time 06/28/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 410.4	WG1891521	1	07/10/22 20:00	07/11/22 00:08	CRB	Mt. Juliet, TN

SAMPLE SUMMARY

2206E09-008F EP-2 L1509495-09 WW

			Collected by	Collected date/time	Received date/time	
				06/24/22 10:50	06/28/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1889365	1	07/05/22 07:54	07/07/22 19:38	CAT	Mt. Juliet, TN

2206E09-008I EP-2 L1509495-10 WW

			Collected by	Collected date/time	Received date/time	
				06/24/22 10:50	06/28/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 410.4	WG1891521	1	07/10/22 20:00	07/11/22 00:13	CRB	Mt. Juliet, TN

2206E09-009F EP-6 L1509495-11 WW

			Collected by	Collected date/time	Received date/time	
				06/24/22 11:20	06/28/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1889365	1	07/05/22 07:54	07/07/22 19:39	CAT	Mt. Juliet, TN

2206E09-009I EP-6 L1509495-12 WW

			Collected by	Collected date/time	Received date/time	
				06/24/22 11:20	06/28/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 410.4	WG1891521	5	07/10/22 20:00	07/11/22 00:15	CRB	Mt. Juliet, TN

2206E09-011F DUP-24-2 L1509495-13 WW

			Collected by	Collected date/time	Received date/time	
				06/24/22 00:00	06/28/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1889365	1	07/05/22 07:54	07/07/22 19:40	CAT	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Sample Delivery Group (SDG) Narrative

The following analysis were performed from an unpreserved, insufficiently or inadequately preserved sample.

Lab Sample ID	Project Sample ID	Method
L1509495-11	2206E09-009F EP-6	4500CN E-2016

Received by OCD: 4/21/2023 9:21:57 AM

2206E09-001F EB-6-24-22

SAMPLE RESULTS - 01

Collected date/time: 06/24/22 08:00

L1509495

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	U		1.80	5.00	1	07/04/2022 23:19	WG1888930

Released to Imaging: 4/21/2023 9:40:26 AM

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	16.3		1.80	5.00	1	07/04/2022 23:23	WG1888930

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	7.86		1.80	5.00	1	07/07/2022 19:29	WG1889365

Received by OCD: 4/21/2023 9:21:57 AM

Collected date/time: 06/24/22 09:25
L1509495

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	14.0		1.80	5.00	1	07/07/2022 19:32	WG1889365

Released to Imaging: 4/21/2023 9:40:26 AM

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	12.6		1.80	5.00	1	07/07/2022 19:35	WG1889365

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	12.9		1.80	5.00	1	07/07/2022 19:36	WG1889365

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	U		1.80	5.00	1	07/07/2022 19:37	WG1889365

Received by OCD: 4/21/2023 9:21:57 AM

SAMPLE RESULTS - 08

Collected date/time: 06/24/22 10:30

L1509495

Wet Chemistry by Method 410.4

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
COD	234000		11700	20000	1	07/11/2022 00:08	WG1891521

Released to Imaging: 4/21/2023 9:40:26 AM

Received by OCD: 4/21/2023 9:21:57 AM

2206E09-0081 LT-2
Collected date/time: 06/24/22 10:50
L1509495

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	U		1.80	5.00	1	07/07/2022 19:38	WG1889365

Released to Imaging: 4/21/2023 9:40:26 AM

Wet Chemistry by Method 410.4

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
COD	810000		11700	20000	1	07/11/2022 00:13	WG1891521

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	4.40	J	1.80	5.00	1	07/07/2022 19:39	WG1889365

Wet Chemistry by Method 410.4

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
COD	4520000		58500	100000	5	07/11/2022 00:15	WG1891521

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	14.7		1.80	5.00	1	07/07/2022 19:40	WG1889365

Method Blank (MB)

(MB) R3812988-1 07/11/22 00:06

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
COD	U		11700	20000

L1509495-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1509495-08 07/11/22 00:08 • (DUP) R3812988-5 07/11/22 00:08

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
COD	234000	231000	1	1.16		20

L1509508-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1509508-01 07/11/22 00:17 • (DUP) R3812988-6 07/11/22 00:18

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
COD	147000	143000	1	2.89		20

Laboratory Control Sample (LCS)

(LCS) R3812988-2 07/11/22 00:06

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
COD	500000	496000	99.1	90.0-110	

L1508227-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1508227-01 07/11/22 00:06 • (MS) R3812988-3 07/11/22 00:06 • (MSD) R3812988-4 07/11/22 00:06

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
COD	500000	184000	601000	595000	83.3	82.2	1	80.0-120			0.933	20

Method Blank (MB)

(MB) R3810635-1 07/04/22 22:58

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Cyanide	U		1.80	5.00

L1507944-17 Original Sample (OS) • Duplicate (DUP)

(OS) L1507944-17 07/04/22 23:03 • (DUP) R3810635-3 07/04/22 23:04

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Cyanide	U	U	1	0.000		20

L1509495-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1509495-01 07/04/22 23:19 • (DUP) R3810635-8 07/04/22 23:20

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Cyanide	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3810635-2 07/04/22 22:59

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Cyanide	100	97.7	97.7	87.1-120	

L1508969-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1508969-02 07/04/22 23:13 • (MS) R3810635-4 07/04/22 23:14 • (MSD) R3810635-5 07/04/22 23:15

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Cyanide	100	U	100	95.6	100	95.6	1	90.0-110			4.50	20

L1509137-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1509137-01 07/04/22 23:42 • (MS) R3810635-9 07/04/22 23:43 • (MSD) R3810635-10 07/04/22 23:44

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Cyanide	100	U	77.1	93.2	77.1	93.2	1	90.0-110	J6		18.9	20

Method Blank (MB)

(MB) R3812224-1 07/07/22 19:10

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Cyanide	U		1.80	5.00

L1509260-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1509260-05 07/07/22 19:26 • (DUP) R3812224-5 07/07/22 19:27

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	U	U	1	0.000		20

L1509640-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1509640-01 07/07/22 19:54 • (DUP) R3812224-10 07/07/22 19:55

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	2.63	10.4	1	119	P1	20

Laboratory Control Sample (LCS)

(LCS) R3812224-2 07/07/22 19:11

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	100	98.1	98.1	87.1-120	

L1509260-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1509260-01 07/07/22 19:17 • (MS) R3812224-3 07/07/22 19:18 • (MSD) R3812224-4 07/07/22 19:19

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	100	2.82	95.7	95.6	92.9	92.8	1	90.0-110			0.105	20

L1509495-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1509495-03 07/07/22 19:29 • (MS) R3812224-6 07/07/22 19:30 • (MSD) R3812224-7 07/07/22 19:31

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	100	7.86	103	99.7	95.1	91.8	1	90.0-110			3.26	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

A093

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

SUB CONTRATOR: Pace TN	COMPANY: PACE TN	PHONE: (800) 767-5859	FAX: (615) 758-5859
ADDRESS: 12065 Lebanon Rd		ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: Mt. Juliet, TN 37122			

Sample Receipt Checklist
COC Seal Present/Intact: Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
RAD Screen <0.5 mR/hr: Y N
If Applicable
VOA Zero Headspace: Y N
Pres.Correct/Check: Y N

L1509495

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS		
1	2206E09-001F	EB-6-24-22	500AMBHDP E-NAOH	Groundwater	6/24/2022 8:00:00 AM	1	Total Cyanide J and MDL	-01
2	2206E09-002F	MKTF-27	500AMBHDP E-NAOH	Groundwater	6/24/2022 8:30:00 AM	1	Total Cyanide J and MDL	-02
3	2206E09-003F	MKTF-28	500AMBHDP E-NAOH	Groundwater	6/24/2022 9:00:00 AM	1	Total Cyanide J and MDL	-03
4	2206E09-004F	NAPIS-2	500AMBHDP E-NAOH	Groundwater	6/24/2022 9:25:00 AM	1	Total Cyanide J and MDL	-04
5	2206E09-005F	NAPIS-3	500AMBHDP E-NAOH	Groundwater	6/24/2022 9:45:00 AM	1	Total Cyanide J and MDL	-05
6	2206E09-006F	KA-3	500AMBHDP E-NAOH	Groundwater	6/24/2022 10:05:00 AM	1	Total Cyanide J and MDL	-06
7	2206E09-007F	STP-1 to EP-2	500AMBHDP E-NAOH	Groundwater	6/24/2022 10:30:00 AM	1	Total Cyanide J and MDL	-07
8	2206E09-007I	STP-1 to EP-2	500HDPEH2 SO4	Groundwater	6/24/2022 10:30:00 AM	1	COD- J and MDL	-08
9	2206E09-008F	EP-2	500AMBHDP E-NAOH	Groundwater	6/24/2022 10:50:00 AM	1	Total Cyanide J and MDL	-09
10	2206E09-008I	EP-2	500HDPEH2 SO4	Groundwater	6/24/2022 10:50:00 AM	1	COD- J and MDL	-10
11	2206E09-009F	EP-6	500AMBHDP E-NAOH	Groundwater	6/24/2022 11:20:00 AM	1	Total Cyanide J and MDL	-11
12	2206E09-009I	EP-6	500HDPEH2 SO4	Groundwater	6/24/2022 11:20:00 AM	1	COD- J and MDL	-12
13	2206E09-011F	DUP-6-24-22	500AMBHDP E-NAOH	Groundwater	6/24/2022	1	Total Cyanide J and MDL	-13

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

DR47
0.2+0.2=92

5755 8084 4318

Relinquished By:	Date: 6/27/2022	Time: 9:53 AM	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date: 6/28/22	Time: 900
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☑ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY
Temp of samples ____ °C Attempt to Cool ? ____
Comments: ____

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206E09**

21-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB-68406**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **68406**	RunNo: **89144**
Prep Date: **6/28/2022**	Analysis Date: **6/29/2022**	SeqNo: **3167860** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LCSLL-68406**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **68406**	RunNo: **89144**
Prep Date: **6/28/2022**	Analysis Date: **6/29/2022**	SeqNo: **3167861** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0017	0.0030	0.002000	0	83.6	50	150			J
Beryllium	0.0018	0.0020	0.002000	0	92.4	50	150			J
Cadmium	0.0022	0.0020	0.002000	0	109	50	150			
Chromium	0.0074	0.0060	0.006000	0	123	50	150			
Cobalt	0.0061	0.0060	0.006000	0	101	50	150			
Nickel	0.0068	0.010	0.005000	0	136	50	150			J
Silver	0.0049	0.0050	0.005000	0	98.7	50	150			J
Vanadium	0.0090	0.050	0.01000	0	90.1	50	150			J
Zinc	0.012	0.010	0.01000	0	122	50	150			

Sample ID: **LCS-68406**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **68406**	RunNo: **89144**
Prep Date: **6/28/2022**	Analysis Date: **6/29/2022**	SeqNo: **3167862** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0030	0.5000	0	98.2	85	115			
Beryllium	0.50	0.0020	0.5000	0	101	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.6	85	115			
Chromium	0.49	0.0060	0.5000	0	98.5	85	115			
Cobalt	0.48	0.0060	0.5000	0	96.1	85	115			
Nickel	0.48	0.010	0.5000	0	96.8	85	115			
Silver	0.10	0.0050	0.1000	0	104	85	115			
Vanadium	0.50	0.050	0.5000	0	99.3	85	115			
Zinc	0.47	0.010	0.5000	0	93.7	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206E09**

21-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB-B**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B89068**	RunNo: **89068**
Prep Date:	Analysis Date: **6/27/2022**	SeqNo: **3164612** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS-B**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B89068**	RunNo: **89068**
Prep Date:	Analysis Date: **6/27/2022**	SeqNo: **3164613** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0021	0.0020	0.002000	0	107	50	150			
Beryllium	0.0021	0.0020	0.002000	0	106	50	150			
Cadmium	0.0021	0.0020	0.002000	0	105	50	150			
Chromium	0.0066	0.0060	0.006000	0	110	50	150			
Cobalt	0.0062	0.0060	0.006000	0	104	50	150			
Nickel	0.0036	0.010	0.005000	0	72.2	50	150			J
Silver	0.0047	0.0050	0.005000	0	94.8	50	150			J
Vanadium	0.011	0.050	0.01000	0	110	50	150			J
Zinc	0.012	0.010	0.01000	0	116	50	150			

Sample ID: **LCS-B**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B89068**	RunNo: **89068**
Prep Date:	Analysis Date: **6/27/2022**	SeqNo: **3164614** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0020	0.5000	0	100	85	115			
Beryllium	0.52	0.0020	0.5000	0	104	85	115			
Cadmium	0.52	0.0020	0.5000	0	104	85	115			
Chromium	0.50	0.0060	0.5000	0	101	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.3	85	115			
Nickel	0.49	0.010	0.5000	0	98.9	85	115			
Silver	0.10	0.0050	0.1000	0	102	85	115			
Vanadium	0.51	0.050	0.5000	0	102	85	115			
Zinc	0.50	0.010	0.5000	0	99.8	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206E09**

21-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB-A**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A89154**	RunNo: **89154**
Prep Date:	Analysis Date: **6/30/2022**	SeqNo: **3168573** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								

Sample ID: **LLLCS-A**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A89154**	RunNo: **89154**
Prep Date:	Analysis Date: **6/30/2022**	SeqNo: **3168574** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0021	0.0020	0.002000	0	107	50	150			

Sample ID: **LCS-A**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A89154**	RunNo: **89154**
Prep Date:	Analysis Date: **6/30/2022**	SeqNo: **3168575** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	98.3	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206E09**

21-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB-68406**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **68406**	RunNo: **89161**
Prep Date: **6/28/2022**	Analysis Date: **6/30/2022**	SeqNo: **3168846** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **MSLCSLL-68406**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **68406**	RunNo: **89161**
Prep Date: **6/28/2022**	Analysis Date: **6/30/2022**	SeqNo: **3168847** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00099	0.0010	0.001000	0	98.7	50	150			J
Arsenic	0.0010	0.0010	0.001000	0	104	50	150			
Lead	0.00048	0.00050	0.0005000	0	95.3	50	150			J
Selenium	0.00077	0.0010	0.001000	0	77.4	50	150			J

Sample ID: **MSLCS-68406**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **68406**	RunNo: **89161**
Prep Date: **6/28/2022**	Analysis Date: **6/30/2022**	SeqNo: **3168848** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.0	85	115			
Arsenic	0.024	0.0010	0.02500	0	95.6	85	115			
Lead	0.012	0.00050	0.01250	0	97.2	85	115			
Selenium	0.023	0.0010	0.02500	0	91.0	85	115			

Sample ID: **2206E09-011DMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Metals**
Client ID: **DUP-6-24-22**	Batch ID: **68406**	RunNo: **89161**
Prep Date: **6/28/2022**	Analysis Date: **6/30/2022**	SeqNo: **3168927** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0050	0.02500	0	101	70	130			
Arsenic	0.026	0.0050	0.02500	0.001320	98.7	70	130			
Lead	0.013	0.0025	0.01250	0.001931	92.1	70	130			
Selenium	0.024	0.0050	0.02500	0.002016	89.7	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206E09**

21-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B89062**	RunNo: **89062**
Prep Date:	Analysis Date: **6/27/2022**	SeqNo: **3163459** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B89062**	RunNo: **89062**
Prep Date:	Analysis Date: **6/27/2022**	SeqNo: **3163460** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00098	0.0010	0.001000	0	97.5	50	150			J
Arsenic	0.0010	0.0010	0.001000	0	104	50	150			
Lead	0.00054	0.00050	0.0005000	0	107	50	150			
Selenium	0.0013	0.0010	0.001000	0	127	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B89062**	RunNo: **89062**
Prep Date:	Analysis Date: **6/27/2022**	SeqNo: **3163461** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.5	85	115			
Arsenic	0.025	0.0010	0.02500	0	101	85	115			
Lead	0.013	0.00050	0.01250	0	102	85	115			
Selenium	0.026	0.0010	0.02500	0	103	85	115			

Sample ID: **2206E09-001EMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **EB-6-24-22**	Batch ID: **B89062**	RunNo: **89062**
Prep Date:	Analysis Date: **6/27/2022**	SeqNo: **3163491** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.0	70	130			
Arsenic	0.024	0.0010	0.02500	0	95.4	70	130			
Lead	0.012	0.00050	0.01250	0	93.7	70	130			
Selenium	0.023	0.0010	0.02500	0	92.2	70	130			

Sample ID: **2206E09-001EMSDL**	SampType: **MSD**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **EB-6-24-22**	Batch ID: **B89062**	RunNo: **89062**
Prep Date:	Analysis Date: **6/27/2022**	SeqNo: **3163492** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206E09**

21-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **2206E09-001EMSDL**	SampType: **MSD**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **EB-6-24-22**	Batch ID: **B89062**	RunNo: **89062**
Prep Date:	Analysis Date: **6/27/2022**	SeqNo: **3163492** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.4	70	130	0.399	20	
Arsenic	0.024	0.0010	0.02500	0	97.7	70	130	2.36	20	
Lead	0.012	0.00050	0.01250	0	95.0	70	130	1.36	20	
Selenium	0.025	0.0010	0.02500	0	99.1	70	130	7.21	20	

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **C89140**	RunNo: **89140**
Prep Date:	Analysis Date: **6/29/2022**	SeqNo: **3167568** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **C89140**	RunNo: **89140**
Prep Date:	Analysis Date: **6/29/2022**	SeqNo: **3167569** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0010	0.0010	0.001000	0	105	50	150			
Arsenic	0.0012	0.0010	0.001000	0	116	50	150			
Lead	0.00055	0.00050	0.0005000	0	110	50	150			
Selenium	0.00074	0.0010	0.001000	0	74.2	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **C89140**	RunNo: **89140**
Prep Date:	Analysis Date: **6/29/2022**	SeqNo: **3167570** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	98.6	85	115			
Arsenic	0.025	0.0010	0.02500	0	100	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.025	0.0010	0.02500	0	101	85	115			

Sample ID: **2206E09-002EMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **MKTF-27**	Batch ID: **C89140**	RunNo: **89140**
Prep Date:	Analysis Date: **6/29/2022**	SeqNo: **3167587** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206E09**

21-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **2206E09-002EMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **MKTF-27**	Batch ID: **C89140**	RunNo: **89140**
Prep Date:	Analysis Date: **6/29/2022**	SeqNo: **3167587** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.13	0.0050	0.1250	0	104	70	130			
Arsenic	0.14	0.0050	0.1250	0.0005712	110	70	130			
Lead	0.060	0.0025	0.06250	0.00006309	95.6	70	130			
Selenium	0.14	0.0050	0.1250	0.0009616	113	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206E09**

21-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB-68497**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **PBW**	Batch ID: **68497**	RunNo: **89187**							
Prep Date: **7/1/2022**	Analysis Date: **7/1/2022**	SeqNo: **3170344**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-68497**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **BatchQC**	Batch ID: **68497**	RunNo: **89187**							
Prep Date: **7/1/2022**	Analysis Date: **7/1/2022**	SeqNo: **3170345**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00015	0.00020	0.0001500	0	101	50	150			J

Sample ID: **LCS-68497**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **LCSW**	Batch ID: **68497**	RunNo: **89187**							
Prep Date: **7/1/2022**	Analysis Date: **7/1/2022**	SeqNo: **3170346**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0049	0.00020	0.005000	0	98.0	85	115			

Sample ID: **2206E09-006DMS**	SampType: **MS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **KA-3**	Batch ID: **68497**	RunNo: **89187**							
Prep Date: **7/1/2022**	Analysis Date: **7/1/2022**	SeqNo: **3170385**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.0010	0.005000	0	100	75	125			

Sample ID: **2206E09-006DMSD**	SampType: **MSD**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **KA-3**	Batch ID: **68497**	RunNo: **89187**							
Prep Date: **7/1/2022**	Analysis Date: **7/1/2022**	SeqNo: **3170386**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.0010	0.005000	0	103	75	125	2.65	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206E09**

21-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB-68526**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **68526**	RunNo: **89255**
Prep Date: **7/5/2022**	Analysis Date: **7/5/2022**	SeqNo: **3173577** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **MB-68526**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **68526**	RunNo: **89255**
Prep Date: **7/5/2022**	Analysis Date: **7/5/2022**	SeqNo: **3173578** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-68526**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW**	Batch ID: **68526**	RunNo: **89255**
Prep Date: **7/5/2022**	Analysis Date: **7/5/2022**	SeqNo: **3173579** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.10	0.010	0.1000	0	103	70	130			

Sample ID: **LCSD-68526**	SampType: **LCSD**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSS02**	Batch ID: **68526**	RunNo: **89255**
Prep Date: **7/5/2022**	Analysis Date: **7/5/2022**	SeqNo: **3173580** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.097	0.010	0.1000	0	96.7	70	130	6.49	20	

Sample ID: **2206E09-001BMS**	SampType: **MS**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **EB-6-24-22**	Batch ID: **68526**	RunNo: **89255**
Prep Date: **7/5/2022**	Analysis Date: **7/5/2022**	SeqNo: **3173596** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.073	0.0094	0.09358	0	77.5	65	135			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206E09**

21-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB-68464**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **PBW**	Batch ID: **68464**	RunNo: **89260**
Prep Date: **6/30/2022**	Analysis Date: **7/9/2022**	SeqNo: **3179323** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.037	0.064								J
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.038		0.03750		101	42.2	138			

Sample ID: **LCS-68464**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSW**	Batch ID: **68464**	RunNo: **89260**
Prep Date: **6/30/2022**	Analysis Date: **7/9/2022**	SeqNo: **3179324** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.16	0.064	0.1875	0	83.6	31.7	75.4			S
Surr: DNOP	0.021		0.01875		111	42.2	138			

Sample ID: **LCSD-68464**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02**	Batch ID: **68464**	RunNo: **89260**
Prep Date: **6/30/2022**	Analysis Date: **7/9/2022**	SeqNo: **3179325** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.13	0.064	0.1875	0	69.2	31.7	75.4	18.9	20	
Surr: DNOP	0.021		0.01875		111	42.2	138	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206E09**

21-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **PBW**	Batch ID: **A89090**	RunNo: **89090**							
Prep Date:	Analysis Date: **6/28/2022**	SeqNo: **3164961**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	20		20.00		101	70	130			

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **LCSW**	Batch ID: **A89090**	RunNo: **89090**							
Prep Date:	Analysis Date: **6/28/2022**	SeqNo: **3164962**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.55	0.050	0.5000	0	110	80	120			
Surr: BFB	42		20.00		210	70	130			S

Sample ID: **2206e09-002ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **MKTF-27**	Batch ID: **A89090**	RunNo: **89090**							
Prep Date:	Analysis Date: **6/28/2022**	SeqNo: **3164967**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.56	0.050	0.5000	0.04620	104	70	130			
Surr: BFB	44		20.00		221	70	130			S

Sample ID: **2206e09-002amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **MKTF-27**	Batch ID: **A89090**	RunNo: **89090**							
Prep Date:	Analysis Date: **6/28/2022**	SeqNo: **3164968**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.55	0.050	0.5000	0.04620	101	70	130	2.22	20	
Surr: BFB	45		20.00		224	70	130	0	0	S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206E09**

21-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R89248**	RunNo: **89248**
Prep Date:	Analysis Date: **7/5/2022**	SeqNo: **3172851** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	23	1.0	20.00	0	113	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Chlorobenzene	20	1.0	20.00	0	99.3	70	130			
1,1-Dichloroethene	21	1.0	20.00	0	103	70	130			
Trichloroethene (TCE)	22	1.0	20.00	0	109	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		105	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		105	70	130			
Surr: Dibromofluoromethane	11		10.00		108	70	130			
Surr: Toluene-d8	9.7		10.00		97.3	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R89248**	RunNo: **89248**
Prep Date:	Analysis Date: **7/5/2022**	SeqNo: **3172867** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206E09**

21-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R89248**	RunNo: **89248**
Prep Date:	Analysis Date: **7/5/2022**	SeqNo: **3172867** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		104	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		110	70	130			
Surr: Dibromofluoromethane	11		10.00		105	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206E09**

21-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **lcs-68408**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **68408**	RunNo: **89212**
Prep Date: **6/28/2022**	Analysis Date: **7/3/2022**	SeqNo: **3171206** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	87	10	100.0	0	87.3	21.3	104			
1,4-Dichlorobenzene	72	5.0	100.0	0	72.1	15	89.8			
Phenol	110	20	200.0	0	53.4	17	61.1			
Pyrene	100	10	100.0	0	99.6	61	123			
Surr: 2-Fluorophenol	130		200.0		64.5	29.4	87.7			
Surr: Phenol-d5	97		200.0		48.5	28.5	64.7			
Surr: 2,4,6-Tribromophenol	160		200.0		81.9	18.6	129			
Surr: Nitrobenzene-d5	84		100.0		83.8	36.9	103			
Surr: 2-Fluorobiphenyl	78		100.0		78.3	38.1	99.9			
Surr: 4-Terphenyl-d14	110		100.0		111	48	155			

Sample ID: **lcsd-68408**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **68408**	RunNo: **89212**
Prep Date: **6/28/2022**	Analysis Date: **7/3/2022**	SeqNo: **3171207** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	79	10	100.0	0	79.0	21.3	104	10.0	45.3	
1,4-Dichlorobenzene	63	5.0	100.0	0	63.4	15	89.8	12.8	39.6	
Phenol	94	20	200.0	0	47.1	17	61.1	12.6	42.5	
Pyrene	88	10	100.0	0	88.0	61	123	12.3	11.8	R
Surr: 2-Fluorophenol	120		200.0		59.4	29.4	87.7	0	0	
Surr: Phenol-d5	88		200.0		44.2	28.5	64.7	0	0	
Surr: 2,4,6-Tribromophenol	140		200.0		72.3	18.6	129	0	0	
Surr: Nitrobenzene-d5	78		100.0		77.6	36.9	103	0	0	
Surr: 2-Fluorobiphenyl	76		100.0		76.4	38.1	99.9	0	0	
Surr: 4-Terphenyl-d14	99		100.0		99.4	48	155	0	0	

Sample ID: **mb-68408**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **68408**	RunNo: **89274**
Prep Date: **6/28/2022**	Analysis Date: **7/6/2022**	SeqNo: **3174728** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Anthracene	ND	10								
Benz(a)anthracene	ND	5.0								
Benzo(b)fluoranthene	ND	10								
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206E09**

21-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **mb-68408**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **68408**	RunNo: **89274**
Prep Date: **6/28/2022**	Analysis Date: **7/6/2022**	SeqNo: **3174728** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	10								
2,4-Dinitrophenol	ND	20								
Fluoranthene	ND	10								
Fluorene	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
1-Methylnaphthalene	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
Naphthalene	ND	5.0								
Phenanthrene	ND	10								
Phenol	ND	20								
Pyrene	ND	10								
Pyridine	ND	40								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	130		200.0		65.9	29.4	87.7			
Surr: Phenol-d5	98		200.0		49.2	28.5	64.7			
Surr: 2,4,6-Tribromophenol	120		200.0		61.6	18.6	129			
Surr: Nitrobenzene-d5	77		100.0		77.2	36.9	103			
Surr: 2-Fluorobiphenyl	70		100.0		69.8	38.1	99.9			
Surr: 4-Terphenyl-d14	93		100.0		92.8	48	155			

Sample ID: **MB-68468**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **68468**	RunNo: **89411**
Prep Date: **6/30/2022**	Analysis Date: **7/13/2022**	SeqNo: **3183125** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Anthracene	ND	10								
Benz(a)anthracene	ND	5.0								
Benzo(b)fluoranthene	ND	10								
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206E09**

21-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB-68468**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **68468**	RunNo: **89411**
Prep Date: **6/30/2022**	Analysis Date: **7/13/2022**	SeqNo: **3183125** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	10								
2,4-Dinitrophenol	ND	20								
Fluoranthene	ND	10								
Fluorene	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
1-Methylnaphthalene	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
Naphthalene	ND	5.0								
Phenanthrene	ND	10								
Phenol	ND	20								
Pyrene	ND	10								
Pyridine	ND	40								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	120		200.0		62.3	29.4	87.7			
Surr: Phenol-d5	95		200.0		47.3	28.5	64.7			
Surr: 2,4,6-Tribromophenol	110		200.0		56.0	18.6	129			
Surr: Nitrobenzene-d5	77		100.0		77.4	36.9	103			
Surr: 2-Fluorobiphenyl	69		100.0		68.6	38.1	99.9			
Surr: 4-Terphenyl-d14	96		100.0		96.4	48	155			

Sample ID: **LCS-68468**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **68468**	RunNo: **89411**
Prep Date: **6/30/2022**	Analysis Date: **7/13/2022**	SeqNo: **3183126** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	76	10	100.0	0	75.6	21.3	104			
1,4-Dichlorobenzene	64	5.0	100.0	0	63.5	15	89.8			
Phenol	99	20	200.0	0	49.6	17	61.1			
Pyrene	97	10	100.0	0	96.7	61	123			
Surr: 2-Fluorophenol	130		200.0		62.7	29.4	87.7			
Surr: Phenol-d5	95		200.0		47.3	28.5	64.7			
Surr: 2,4,6-Tribromophenol	120		200.0		62.0	18.6	129			
Surr: Nitrobenzene-d5	82		100.0		81.8	36.9	103			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206E09**

21-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **LCS-68468**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **68468**	RunNo: **89411**
Prep Date: **6/30/2022**	Analysis Date: **7/13/2022**	SeqNo: **3183126** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorobiphenyl	72		100.0		72.5	38.1	99.9			
Surr: 4-Terphenyl-d14	100		100.0		102	48	155			

Sample ID: **LCSD-68468**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **68468**	RunNo: **89411**
Prep Date: **6/30/2022**	Analysis Date: **7/13/2022**	SeqNo: **3183127** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	41	10	100.0	0	41.3	21.3	104	58.7	45.3	R
1,4-Dichlorobenzene	36	5.0	100.0	0	36.0	15	89.8	55.4	39.6	R
Phenol	54	20	200.0	0	26.9	17	61.1	59.2	42.5	R
Pyrene	80	10	100.0	0	79.8	61	123	19.2	11.8	R
Surr: 2-Fluorophenol	69		200.0		34.3	29.4	87.7	0	0	
Surr: Phenol-d5	51		200.0		25.4	28.5	64.7	0	0	S
Surr: 2,4,6-Tribromophenol	110		200.0		54.5	18.6	129	0	0	
Surr: Nitrobenzene-d5	45		100.0		44.9	36.9	103	0	0	
Surr: 2-Fluorobiphenyl	42		100.0		41.8	38.1	99.9	0	0	
Surr: 4-Terphenyl-d14	77		100.0		77.4	48	155	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206E09**

21-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **mb-68408**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **68408**	RunNo: **89252**
Prep Date: **6/28/2022**	Analysis Date: **7/5/2022**	SeqNo: **3173307** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.30								
1-Methylnaphthalene	ND	0.30								
2-Methylnaphthalene	ND	0.30								
Acenaphthene	ND	0.30								
Fluorene	ND	0.30								
Phenanthrene	ND	0.30								
Anthracene	ND	0.30								
Fluoranthene	ND	0.30								
Pyrene	ND	1.0								
Benz(a)anthracene	ND	0.30								
Chrysene	ND	0.30								
Benzo(b)fluoranthene	ND	0.30								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	86		100.0		86.2	31.6	100			
Surr: 2,4,6-Tribromophenol	96		200.0		47.9	22	101			
Surr: 2-Fluorobiphenyl	82		100.0		81.9	26.7	90.1			
Surr: 4-Terphenyl-d14	120		100.0		118	72.3	147			

Sample ID: **lcs-68408**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **68408**	RunNo: **89252**
Prep Date: **6/28/2022**	Analysis Date: **7/5/2022**	SeqNo: **3173308** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	1.1	0.10	2.000	0	53.0	20.2	48.4			S
Naphthalene	1.6	0.30	2.000	0	80.0	21.3	79.9			S
1-Methylnaphthalene	1.5	0.30	2.000	0	77.0	22.2	80.3			
2-Methylnaphthalene	1.5	0.30	2.000	0	75.0	20.6	80.1			
Acenaphthene	1.7	0.30	2.000	0	84.0	29.8	82.7			S
Fluorene	1.7	0.30	2.000	0	85.0	33.3	86			
Phenanthrene	1.8	0.30	2.000	0	90.0	38.2	93.9			
Anthracene	1.7	0.30	2.000	0	87.0	41.1	95.6			
Fluoranthene	1.8	0.30	2.000	0	92.0	52.9	123			
Pyrene	1.8	1.0	2.000	0	88.0	51	113			
Benz(a)anthracene	1.9	0.30	2.000	0	96.0	51	147			
Chrysene	1.9	0.30	2.000	0	93.0	55.3	115			
Benzo(b)fluoranthene	1.8	0.30	2.000	0	92.0	44.4	136			
Indeno(1,2,3-cd)pyrene	2.0	0.30	2.000	0	101	31.4	165			
Surr: Nitrobenzene-d5	83		100.0		83.1	31.6	100			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206E09**

21-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **lcs-68408**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **68408**	RunNo: **89252**
Prep Date: **6/28/2022**	Analysis Date: **7/5/2022**	SeqNo: **3173308** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	95		200.0		47.3	22	101			
Surr: 2-Fluorobiphenyl	78		100.0		77.9	26.7	90.1			
Surr: 4-Terphenyl-d14	89		100.0		88.7	72.3	147			

Sample ID: **lcsd-68408**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02**	Batch ID: **68408**	RunNo: **89252**
Prep Date: **6/28/2022**	Analysis Date: **7/5/2022**	SeqNo: **3173309** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.92	0.10	2.000	0	46.0	20.2	48.4	14.1	30.1	
Naphthalene	1.3	0.30	2.000	0	67.0	21.3	79.9	17.7	25.6	
1-Methylnaphthalene	1.3	0.30	2.000	0	65.0	22.2	80.3	16.9	25	
2-Methylnaphthalene	1.3	0.30	2.000	0	64.0	20.6	80.1	15.8	25	
Acenaphthene	1.4	0.30	2.000	0	72.0	29.8	82.7	15.4	27.8	
Fluorene	1.5	0.30	2.000	0	75.0	33.3	86	12.5	26.4	
Phenanthrene	1.6	0.30	2.000	0	80.0	38.2	93.9	11.8	27.9	
Anthracene	1.5	0.30	2.000	0	76.0	41.1	95.6	13.5	25.6	
Fluoranthene	1.6	0.30	2.000	0	80.0	52.9	123	14.0	22.8	
Pyrene	1.5	1.0	2.000	0	77.0	51	113	13.3	20	
Benz(a)anthracene	1.7	0.30	2.000	0	84.0	51	147	13.3	24.1	
Chrysene	1.7	0.30	2.000	0	84.0	55.3	115	10.2	20	
Benzo(b)fluoranthene	1.6	0.30	2.000	0	81.0	44.4	136	12.7	24.5	
Indeno(1,2,3-cd)pyrene	1.8	0.30	2.000	0	88.0	31.4	165	13.8	21.1	
Surr: Nitrobenzene-d5	74		100.0		74.4	31.6	100	0	0	
Surr: 2,4,6-Tribromophenol	89		200.0		44.5	22	101	0	0	
Surr: 2-Fluorobiphenyl	70		100.0		70.4	26.7	90.1	0	0	
Surr: 4-Terphenyl-d14	78		100.0		77.9	72.3	147	0	0	

Sample ID: **mb-68468**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **68468**	RunNo: **89400**
Prep Date: **6/30/2022**	Analysis Date: **7/7/2022**	SeqNo: **3180358** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.30								
1-Methylnaphthalene	ND	0.30								
2-Methylnaphthalene	ND	0.30								
Acenaphthene	ND	0.30								
Fluorene	ND	0.30								
Phenanthrene	ND	0.30								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206E09**

21-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **mb-68468**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **68468**	RunNo: **89400**
Prep Date: **6/30/2022**	Analysis Date: **7/7/2022**	SeqNo: **3180358** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Anthracene	ND	0.30								
Fluoranthene	ND	0.30								
Pyrene	ND	1.0								
Benz(a)anthracene	ND	0.30								
Chrysene	ND	0.30								
Benzo(b)fluoranthene	ND	0.30								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	75		100.0		74.8	31.6	100			
Surr: 2,4,6-Tribromophenol	98		200.0		49.2	22	101			
Surr: 2-Fluorobiphenyl	69		100.0		69.3	26.7	90.1			
Surr: 4-Terphenyl-d14	96		100.0		96.1	72.3	147			

Sample ID: **LCS-68468 LF**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **68468**	RunNo: **89400**
Prep Date: **6/30/2022**	Analysis Date: **7/7/2022**	SeqNo: **3180359** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.94	0.10	2.000	0	47.0	20.2	48.4			
Naphthalene	1.3	0.30	2.000	0	64.0	21.3	79.9			
1-Methylnaphthalene	1.3	0.30	2.000	0	64.0	22.2	80.3			
2-Methylnaphthalene	1.2	0.30	2.000	0	62.0	20.6	80.1			
Acenaphthene	1.5	0.30	2.000	0	73.0	29.8	82.7			
Fluorene	1.6	0.30	2.000	0	79.0	33.3	86			
Phenanthrene	1.7	0.30	2.000	0	86.0	38.2	93.9			
Anthracene	1.8	0.30	2.000	0	90.0	41.1	95.6			
Fluoranthene	2.0	0.30	2.000	0	101	52.9	123			
Pyrene	1.7	1.0	2.000	0	87.0	51	113			
Benz(a)anthracene	2.1	0.30	2.000	0	105	51	147			
Chrysene	1.8	0.30	2.000	0	89.0	55.3	115			
Benzo(b)fluoranthene	2.0	0.30	2.000	0	98.0	44.4	136			
Indeno(1,2,3-cd)pyrene	2.3	0.30	2.000	0	115	31.4	165			
Surr: Nitrobenzene-d5	76		100.0		75.7	31.6	100			
Surr: 2,4,6-Tribromophenol	100		200.0		50.2	22	101			
Surr: 2-Fluorobiphenyl	70		100.0		70.3	26.7	90.1			
Surr: 4-Terphenyl-d14	88		100.0		87.9	72.3	147			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206E09**

21-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **lcsd-68468 lf**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02**	Batch ID: **68468**	RunNo: **89400**
Prep Date: **6/30/2022**	Analysis Date: **7/7/2022**	SeqNo: **3180360** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.94	0.10	2.000	0	47.0	20.2	48.4	0	30.1	
Naphthalene	1.3	0.30	2.000	0	65.0	21.3	79.9	1.55	25.6	
1-Methylnaphthalene	1.3	0.30	2.000	0	64.0	22.2	80.3	0	25	
2-Methylnaphthalene	1.3	0.30	2.000	0	63.0	20.6	80.1	1.60	25	
Acenaphthene	1.4	0.30	2.000	0	72.0	29.8	82.7	1.38	27.8	
Fluorene	1.5	0.30	2.000	0	77.0	33.3	86	2.56	26.4	
Phenanthrene	1.6	0.30	2.000	0	82.0	38.2	93.9	4.76	27.9	
Anthracene	1.7	0.30	2.000	0	86.0	41.1	95.6	4.55	25.6	
Fluoranthene	1.9	0.30	2.000	0	96.0	52.9	123	5.08	22.8	
Pyrene	1.6	1.0	2.000	0	82.0	51	113	5.92	20	
Benz(a)anthracene	1.9	0.30	2.000	0	95.0	51	147	10.0	24.1	
Chrysene	1.6	0.30	2.000	0	79.0	55.3	115	11.9	20	
Benzo(b)fluoranthene	1.8	0.30	2.000	0	88.0	44.4	136	10.8	24.5	
Indeno(1,2,3-cd)pyrene	2.0	0.30	2.000	0	99.0	31.4	165	15.0	21.1	
Surr: Nitrobenzene-d5	76		100.0		75.9	31.6	100	0	0	
Surr: 2,4,6-Tribromophenol	98		200.0		48.9	22	101	0	0	
Surr: 2-Fluorobiphenyl	70		100.0		70.4	26.7	90.1	0	0	
Surr: 4-Terphenyl-d14	78		100.0		77.9	72.3	147	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206E09**

21-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB-68337**	SampType: **MBLK**	TestCode: **SM5210B: BOD**							
Client ID: **PBW**	Batch ID: **68337**	RunNo: **89149**							
Prep Date: **6/24/2022**	Analysis Date: **6/29/2022**	SeqNo: **3168371**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	ND	2.0								

Sample ID: **LCS-68337**	SampType: **LCS**	TestCode: **SM5210B: BOD**							
Client ID: **LCSW**	Batch ID: **68337**	RunNo: **89149**							
Prep Date: **6/24/2022**	Analysis Date: **6/29/2022**	SeqNo: **3168372**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	206	2.0	198.0	0	104	84.6	115.4			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206E09**

21-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB-68346**	SampType: **MBLK**	TestCode: **SM 9223B Fecal Indicator: E. coli MPN**
Client ID: **PBW**	Batch ID: **68346**	RunNo: **89022**
Prep Date: **6/24/2022**	Analysis Date: **6/25/2022**	SeqNo: **3161480** Units: **MPN/100mL**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
E. Coli	<1	1.000								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **Marathon** Work Order Number: **2206E09** RcptNo: **1**

Received By: **Joseph Alderette** **6/24/2022 2:57:00 PM**

Completed By: **Desiree Dominguez** **6/24/2022 3:09:21 PM**

Reviewed By: DNC

BOD + E.coli : JN 6/24/22

(2) 6/24/22 (corrected) 27/22 15:45

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☑ JN 6/27/22
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☑ No ☑ JN 6/27/22 NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☑ No ☐ NA ☐
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: 2 3 9 (<2 or >12 unless noted)

Adjusted? yes

Checked by: JN 6/27/22

BOD + E.coli : SCL 6/24/22

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: ____ Date: ____

By Whom: ____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: ____

Client Instructions: ____

16. Additional remarks: 0.5ml of HNO3 was added to sample 006D for pH<2. JN 6/27/22.

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.3	Good	Yes			
2	1.4	Good	Yes			
3	0.8	Good	Yes			
4	1.3	Good	Yes			

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **Marathon** Work Order Number: **2206E09** RcptNo: 1

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
5	5.1	Good	Yes			
6	2.5	Good	Yes			

Released to Imaging: 4/21/2023 8:40:26 AM
Received by OCD: 4/21/2023 9:21:57 AM

Chain of Custody Record

Client: Marathon Gallup Refinery

Mailing Address: 92 Giant Crossing Road
Jamestown, NM,87347

Phone #: 808-640-1823

email or Fax#:

QA/QC Package:
X Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

X EDD (Type)

X Standard Rush

Project Name:
2022 GW Sampling 2nd Quarter

Project #: **697-080-001**

Project Manager:
Lesli Alexander/Mackensie Swift

Sampler:

On Ice: X Yes ☐ No

# of Coolers: 6

Cooler Temp(including CF): See Checklist

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2206E09
6/24	8:00		EB-6-24-22	14		-001
6/24	8:30		MKTF-27	14		-002
6/24	9:00		MKTF-28	14		-003
6/24	9:25		NAPIS-2	14		-004
6/24	9:45		NAPIS-3	14		-005
6/24	10:05		KA-3	14		-006
6/24	10:30		STP-1 to EP-2	16		-007
6/24	10:50		EP-2	16		-008
6/24	11:20		EP-6	16		-009
6/24	11:20		FB-6-24-22	3		-010
6/24	—		DUP-6-24-22	14		-011

Analysis Request

See Analyte List	8260B: VOC	8270C: SVOC	8270C SIM: PAH, 1,4 Dioxane	8015: TPH GRO/DRO/MRO	E200.7: Metals	E200.7: Dissolved Metals	E245.1 Mercury	E504.1: EDB	E335.4: Cyanide Subbed		537.1: PFAS	SM 5201B: BOD	410.4: COD	SM9223B E. Coli
X	X	X	X	X	X	X	X	X	X					
X	X	X	X	X	X	X	X	X	X					
X	X	X	X	X	X	X	X	X	X					
X	X	X	X	X	X	X	X	X	X					
X	X	X	X	X	X	X	X	X	X					
X	X	X	X	X	X	X	X	X	X					
X	X	X	X	X	X	X	X	X	X					
X	X	X	X	X	X	X	X	X	X			X	X	X
X	X	X	X	X	X	X	X	X	X			X	X	X
X	X	X	X	X	X	X	X	X	X			X	X	X
	X	X												
X	X	X	X	X	X	X	X	X	X					

Date	Time:	Relinquished by:	Received by:	Via:	Date	Time
6/24	12:30	Hilario Tiago		courier	6-24-22	14:57
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

See Checklist

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

July 18, 2022

Lesli Alexander

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX (505) 632-3911

RE: 2022 GW Sampling 2nd Quarter OrderNo.: 2206F41

Dear Lesli Alexander:

Hall Environmental Analysis Laboratory received 10 sample(s) on 6/29/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **2206F41**
Date: **7/18/2022**

CLIENT: Marathon
Project: 2022 GW Sampling 2nd Quarter

Analytical Notes Regarding EPA Method 8270:
The recovery for Pyrene in the LCSD was slightly low.

"S" flags denote that the surrogate or spike was outside of the standard limits.

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-28-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022 8:10:00 AM
Lab ID: 2206F41-001A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.010	0.0090	0.050	J	mg/L	1	7/2/2022 8:47:00 PM	R89210
Surr: BFB	97.8	0	70-130		%Rec	1	7/2/2022 8:47:00 PM	R89210
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	0.23	1.0		µg/L	1	7/6/2022 7:06:42 AM	B89226
Toluene	ND	0.20	1.0		µg/L	1	7/6/2022 7:06:42 AM	B89226
Ethylbenzene	ND	0.21	1.0		µg/L	1	7/6/2022 7:06:42 AM	B89226
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	7/6/2022 7:06:42 AM	B89226
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	7/6/2022 7:06:42 AM	B89226
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	7/6/2022 7:06:42 AM	B89226
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	7/6/2022 7:06:42 AM	B89226
Acetone	5.9	2.5	10	J	µg/L	1	7/6/2022 7:06:42 AM	B89226
Bromomethane	ND	0.85	3.0		µg/L	1	7/6/2022 7:06:42 AM	B89226
2-Butanone	ND	2.0	10		µg/L	1	7/6/2022 7:06:42 AM	B89226
Carbon disulfide	ND	0.59	10		µg/L	1	7/6/2022 7:06:42 AM	B89226
Chlorobenzene	ND	0.16	1.0		µg/L	1	7/6/2022 7:06:42 AM	B89226
Chloroform	ND	0.13	1.0		µg/L	1	7/6/2022 7:06:42 AM	B89226
Chloromethane	0.41	0.41	3.0	J	µg/L	1	7/6/2022 7:06:42 AM	B89226
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	7/6/2022 7:06:42 AM	B89226
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	7/6/2022 7:06:42 AM	B89226
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	7/6/2022 7:06:42 AM	B89226
Isopropylbenzene	ND	0.18	1.0		µg/L	1	7/6/2022 7:06:42 AM	B89226
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	7/6/2022 7:06:42 AM	B89226
Methylene Chloride	ND	0.50	3.0		µg/L	1	7/6/2022 7:06:42 AM	B89226
n-Butylbenzene	ND	0.25	3.0		µg/L	1	7/6/2022 7:06:42 AM	B89226
n-Propylbenzene	ND	0.18	1.0		µg/L	1	7/6/2022 7:06:42 AM	B89226
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	7/6/2022 7:06:42 AM	B89226
Styrene	ND	0.14	1.0		µg/L	1	7/6/2022 7:06:42 AM	B89226
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	7/6/2022 7:06:42 AM	B89226
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	7/6/2022 7:06:42 AM	B89226
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	7/6/2022 7:06:42 AM	B89226
Vinyl chloride	ND	0.32	1.0		µg/L	1	7/6/2022 7:06:42 AM	B89226
Xylenes, Total	ND	0.37	1.5		µg/L	1	7/6/2022 7:06:42 AM	B89226
Surr: 1,2-Dichloroethane-d4	106	0	70-130		%Rec	1	7/6/2022 7:06:42 AM	B89226
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	7/6/2022 7:06:42 AM	B89226
Surr: Dibromofluoromethane	110	0	70-130		%Rec	1	7/6/2022 7:06:42 AM	B89226
Surr: Toluene-d8	101	0	70-130		%Rec	1	7/6/2022 7:06:42 AM	B89226

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-28-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022 8:10:00 AM
Lab ID: 2206F41-001B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **BRM**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	7/6/2022 8:54:19 PM	68566

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-28-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022 8:10:00 AM
Lab ID: 2206F41-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **ED**	
Diesel Range Organics (DRO)	0.022	0.016	0.064	J	mg/L	1	7/9/2022 10:27:25 PM	68464
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	7/9/2022 10:27:25 PM	68464
Surr: DNOP	116	0	42.2-138		%Rec	1	7/9/2022 10:27:25 PM	68464
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	7/13/2022 1:48:33 PM	68468
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	7/13/2022 1:48:33 PM	68468
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	7/13/2022 1:48:33 PM	68468
Di-n-octyl phthalate	ND	12	20		µg/L	1	7/13/2022 1:48:33 PM	68468
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	7/13/2022 1:48:33 PM	68468
Diethyl phthalate	ND	6.0	10		µg/L	1	7/13/2022 1:48:33 PM	68468
Dimethyl phthalate	ND	6.0	10		µg/L	1	7/13/2022 1:48:33 PM	68468
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	7/13/2022 1:48:33 PM	68468
2,4-Dinitrophenol	ND	16	20		µg/L	1	7/13/2022 1:48:33 PM	68468
2-Methylphenol	ND	5.0	10		µg/L	1	7/13/2022 1:48:33 PM	68468
3+4-Methylphenol	ND	5.1	10		µg/L	1	7/13/2022 1:48:33 PM	68468
Phenol	ND	18	20		µg/L	1	7/13/2022 1:48:33 PM	68468
Pyridine	ND	14	40		µg/L	1	7/13/2022 1:48:33 PM	68468
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	7/13/2022 1:48:33 PM	68468
Surr: 2-Fluorophenol	64.5	0	29.4-87.7		%Rec	1	7/13/2022 1:48:33 PM	68468
Surr: Phenol-d5	47.2	0	28.5-64.7		%Rec	1	7/13/2022 1:48:33 PM	68468
Surr: 2,4,6-Tribromophenol	61.6	0	18.6-129		%Rec	1	7/13/2022 1:48:33 PM	68468
Surr: Nitrobenzene-d5	77.5	0	36.9-103		%Rec	1	7/13/2022 1:48:33 PM	68468
Surr: 2-Fluorobiphenyl	67.1	0	38.1-99.9		%Rec	1	7/13/2022 1:48:33 PM	68468
Surr: 4-Terphenyl-d14	90.4	0	48-155		%Rec	1	7/13/2022 1:48:33 PM	68468
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	7/7/2022 6:13:00 PM	68468
Naphthalene	ND	0.20	0.30		µg/L	1	7/7/2022 6:13:00 PM	68468
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	7/7/2022 6:13:00 PM	68468
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	7/7/2022 6:13:00 PM	68468
Acenaphthene	ND	0.14	0.30		µg/L	1	7/7/2022 6:13:00 PM	68468
Fluorene	ND	0.095	0.30		µg/L	1	7/7/2022 6:13:00 PM	68468
Phenanthrene	ND	0.16	0.30		µg/L	1	7/7/2022 6:13:00 PM	68468
Anthracene	ND	0.14	0.30		µg/L	1	7/7/2022 6:13:00 PM	68468
Fluoranthene	ND	0.14	0.30		µg/L	1	7/7/2022 6:13:00 PM	68468
Pyrene	ND	0.32	1.0		µg/L	1	7/7/2022 6:13:00 PM	68468
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	7/7/2022 6:13:00 PM	68468
Chrysene	ND	0.25	0.30		µg/L	1	7/7/2022 6:13:00 PM	68468
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	7/7/2022 6:13:00 PM	68468
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	7/7/2022 6:13:00 PM	68468

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-28-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022 8:10:00 AM
Lab ID: 2206F41-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	78.3	0	31.6-100		%Rec	1	7/7/2022 6:13:00 PM	68468
Surr: 2-Fluorobiphenyl	74.1	0	26.7-90.1		%Rec	1	7/7/2022 6:13:00 PM	68468
Surr: 4-Terphenyl-d14	104	0	72.3-147		%Rec	1	7/7/2022 6:13:00 PM	68468

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-28-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022 8:10:00 AM
Lab ID: 2206F41-001D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	ND	0.0016	0.0030		mg/L	1	7/11/2022 11:07:37 AM	68545
Beryllium	ND	0.00088	0.0020		mg/L	1	7/11/2022 11:07:37 AM	68545
Cadmium	ND	0.0018	0.0020		mg/L	1	7/11/2022 11:07:37 AM	68545
Chromium	ND	0.0020	0.0060		mg/L	1	7/11/2022 11:07:37 AM	68545
Cobalt	ND	0.0035	0.0060		mg/L	1	7/11/2022 11:07:37 AM	68545
Nickel	ND	0.0053	0.010		mg/L	1	7/11/2022 11:07:37 AM	68545
Silver	ND	0.0018	0.0050		mg/L	1	7/11/2022 11:07:37 AM	68545
Vanadium	ND	0.0035	0.050		mg/L	1	7/11/2022 11:07:37 AM	68545
Zinc	ND	0.0039	0.010		mg/L	1	7/11/2022 11:07:37 AM	68545
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/7/2022 1:03:04 PM	68545
Arsenic	ND	0.00013	0.0010		mg/L	1	7/7/2022 1:03:04 PM	68545
Lead	ND	0.000061	0.00050		mg/L	1	7/7/2022 1:03:04 PM	68545
Selenium	ND	0.00037	0.0010		mg/L	1	7/7/2022 1:03:04 PM	68545
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/8/2022 11:12:12 AM	68621

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-28-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022 8:10:00 AM
Lab ID: 2206F41-001E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	ND	0.0011	0.0020		mg/L	1	6/30/2022 11:24:26 AM	B89154
Beryllium	ND	0.00088	0.0020		mg/L	1	6/30/2022 11:24:26 AM	B89154
Cadmium	ND	0.00098	0.0020		mg/L	1	6/30/2022 11:24:26 AM	B89154
Chromium	ND	0.0020	0.0060		mg/L	1	6/30/2022 11:24:26 AM	B89154
Cobalt	ND	0.0024	0.0060		mg/L	1	6/30/2022 11:24:26 AM	B89154
Nickel	ND	0.0033	0.010		mg/L	1	6/30/2022 11:24:26 AM	B89154
Silver	ND	0.0013	0.0050		mg/L	1	6/30/2022 11:24:26 AM	B89154
Vanadium	ND	0.0017	0.050		mg/L	1	6/30/2022 11:24:26 AM	B89154
Zinc	0.0038	0.0032	0.010	J	mg/L	1	6/30/2022 11:24:26 AM	B89154
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/1/2022 4:15:16 PM	A89215
Arsenic	ND	0.00012	0.0010		mg/L	1	7/1/2022 4:15:16 PM	A89215
Lead	ND	0.000057	0.00050		mg/L	1	7/1/2022 4:15:16 PM	A89215
Selenium	ND	0.00034	0.0010		mg/L	1	7/1/2022 4:15:16 PM	A89215
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/8/2022 11:14:19 AM	68621

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-30
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022 8:15:00 AM
Lab ID: 2206F41-002A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.022	0.0090	0.050	J	mg/L	1	7/2/2022 9:06:00 PM	R89210
Surr: BFB	93.0	0	70-130		%Rec	1	7/2/2022 9:06:00 PM	R89210
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	0.23	1.0		µg/L	1	7/6/2022 7:35:10 AM	B89226
Toluene	ND	0.20	1.0		µg/L	1	7/6/2022 7:35:10 AM	B89226
Ethylbenzene	ND	0.21	1.0		µg/L	1	7/6/2022 7:35:10 AM	B89226
Methyl tert-butyl ether (MTBE)	3.1	0.39	1.0		µg/L	1	7/6/2022 7:35:10 AM	B89226
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	7/6/2022 7:35:10 AM	B89226
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	7/6/2022 7:35:10 AM	B89226
1,2-Dichloroethane (EDC)	1.1	0.25	1.0		µg/L	1	7/6/2022 7:35:10 AM	B89226
Acetone	ND	2.5	10		µg/L	1	7/6/2022 7:35:10 AM	B89226
Bromomethane	ND	0.85	3.0		µg/L	1	7/6/2022 7:35:10 AM	B89226
2-Butanone	ND	2.0	10		µg/L	1	7/6/2022 7:35:10 AM	B89226
Carbon disulfide	ND	0.59	10		µg/L	1	7/6/2022 7:35:10 AM	B89226
Chlorobenzene	ND	0.16	1.0		µg/L	1	7/6/2022 7:35:10 AM	B89226
Chloroform	ND	0.13	1.0		µg/L	1	7/6/2022 7:35:10 AM	B89226
Chloromethane	ND	0.41	3.0		µg/L	1	7/6/2022 7:35:10 AM	B89226
cis-1,2-DCE	1.3	0.39	1.0		µg/L	1	7/6/2022 7:35:10 AM	B89226
1,1-Dichloroethane	18	0.27	1.0		µg/L	1	7/6/2022 7:35:10 AM	B89226
1,1-Dichloroethene	1.0	0.20	1.0		µg/L	1	7/6/2022 7:35:10 AM	B89226
Isopropylbenzene	ND	0.18	1.0		µg/L	1	7/6/2022 7:35:10 AM	B89226
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	7/6/2022 7:35:10 AM	B89226
Methylene Chloride	ND	0.50	3.0		µg/L	1	7/6/2022 7:35:10 AM	B89226
n-Butylbenzene	ND	0.25	3.0		µg/L	1	7/6/2022 7:35:10 AM	B89226
n-Propylbenzene	ND	0.18	1.0		µg/L	1	7/6/2022 7:35:10 AM	B89226
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	7/6/2022 7:35:10 AM	B89226
Styrene	ND	0.14	1.0		µg/L	1	7/6/2022 7:35:10 AM	B89226
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	7/6/2022 7:35:10 AM	B89226
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	7/6/2022 7:35:10 AM	B89226
Trichloroethene (TCE)	0.93	0.20	1.0	J	µg/L	1	7/6/2022 7:35:10 AM	B89226
Vinyl chloride	ND	0.32	1.0		µg/L	1	7/6/2022 7:35:10 AM	B89226
Xylenes, Total	ND	0.37	1.5		µg/L	1	7/6/2022 7:35:10 AM	B89226
Surr: 1,2-Dichloroethane-d4	109	0	70-130		%Rec	1	7/6/2022 7:35:10 AM	B89226
Surr: 4-Bromofluorobenzene	105	0	70-130		%Rec	1	7/6/2022 7:35:10 AM	B89226
Surr: Dibromofluoromethane	109	0	70-130		%Rec	1	7/6/2022 7:35:10 AM	B89226
Surr: Toluene-d8	101	0	70-130		%Rec	1	7/6/2022 7:35:10 AM	B89226

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-30
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022 8:15:00 AM
Lab ID: 2206F41-002B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **BRM**	
1,2-Dibromoethane	ND	0.0027	0.0093		µg/L	1	7/6/2022 9:09:34 PM	68566

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-30
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022 8:15:00 AM
Lab ID: 2206F41-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **ED**	
Diesel Range Organics (DRO)	0.11	0.016	0.064		mg/L	1	7/9/2022 10:51:11 PM	68464
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	7/9/2022 10:51:11 PM	68464
Surr: DNOP	109	0	42.2-138		%Rec	1	7/9/2022 10:51:11 PM	68464
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	7/13/2022 2:30:27 PM	68468
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	7/13/2022 2:30:27 PM	68468
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	7/13/2022 2:30:27 PM	68468
Di-n-octyl phthalate	ND	12	20		µg/L	1	7/13/2022 2:30:27 PM	68468
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	7/13/2022 2:30:27 PM	68468
Diethyl phthalate	ND	6.0	10		µg/L	1	7/13/2022 2:30:27 PM	68468
Dimethyl phthalate	ND	6.0	10		µg/L	1	7/13/2022 2:30:27 PM	68468
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	7/13/2022 2:30:27 PM	68468
2,4-Dinitrophenol	ND	16	20		µg/L	1	7/13/2022 2:30:27 PM	68468
2-Methylphenol	ND	5.0	10		µg/L	1	7/13/2022 2:30:27 PM	68468
3+4-Methylphenol	ND	5.1	10		µg/L	1	7/13/2022 2:30:27 PM	68468
Phenol	ND	18	20		µg/L	1	7/13/2022 2:30:27 PM	68468
Pyridine	ND	14	40		µg/L	1	7/13/2022 2:30:27 PM	68468
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	7/13/2022 2:30:27 PM	68468
Surr: 2-Fluorophenol	57.8	0	29.4-87.7		%Rec	1	7/13/2022 2:30:27 PM	68468
Surr: Phenol-d5	46.2	0	28.5-64.7		%Rec	1	7/13/2022 2:30:27 PM	68468
Surr: 2,4,6-Tribromophenol	65.3	0	18.6-129		%Rec	1	7/13/2022 2:30:27 PM	68468
Surr: Nitrobenzene-d5	74.3	0	36.9-103		%Rec	1	7/13/2022 2:30:27 PM	68468
Surr: 2-Fluorobiphenyl	67.2	0	38.1-99.9		%Rec	1	7/13/2022 2:30:27 PM	68468
Surr: 4-Terphenyl-d14	91.5	0	48-155		%Rec	1	7/13/2022 2:30:27 PM	68468
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	19	0.11	1.0		µg/L	1	7/7/2022 7:05:00 PM	68468
Naphthalene	ND	0.20	0.30		µg/L	1	7/7/2022 7:05:00 PM	68468
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	7/7/2022 7:05:00 PM	68468
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	7/7/2022 7:05:00 PM	68468
Acenaphthene	ND	0.14	0.30		µg/L	1	7/7/2022 7:05:00 PM	68468
Fluorene	ND	0.095	0.30		µg/L	1	7/7/2022 7:05:00 PM	68468
Phenanthrene	ND	0.16	0.30		µg/L	1	7/7/2022 7:05:00 PM	68468
Anthracene	ND	0.14	0.30		µg/L	1	7/7/2022 7:05:00 PM	68468
Fluoranthene	ND	0.14	0.30		µg/L	1	7/7/2022 7:05:00 PM	68468
Pyrene	ND	0.32	1.0		µg/L	1	7/7/2022 7:05:00 PM	68468
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	7/7/2022 7:05:00 PM	68468
Chrysene	ND	0.25	0.30		µg/L	1	7/7/2022 7:05:00 PM	68468
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	7/7/2022 7:05:00 PM	68468
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	7/7/2022 7:05:00 PM	68468

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-30
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022 8:15:00 AM
Lab ID: 2206F41-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	72.3	0	31.6-100		%Rec	1	7/7/2022 7:05:00 PM	68468
Surr: 2-Fluorobiphenyl	67.8	0	26.7-90.1		%Rec	1	7/7/2022 7:05:00 PM	68468
Surr: 4-Terphenyl-d14	90.6	0	72.3-147		%Rec	1	7/7/2022 7:05:00 PM	68468

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-30
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022 8:15:00 AM
Lab ID: 2206F41-002D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.42	0.0016	0.0030		mg/L	1	7/11/2022 11:09:15 AM	68545
Beryllium	0.00090	0.00088	0.0020	J	mg/L	1	7/11/2022 11:09:15 AM	68545
Cadmium	ND	0.0018	0.0020		mg/L	1	7/11/2022 11:09:15 AM	68545
Chromium	0.018	0.0020	0.0060		mg/L	1	7/11/2022 11:09:15 AM	68545
Cobalt	0.012	0.0035	0.0060		mg/L	1	7/11/2022 11:09:15 AM	68545
Nickel	0.030	0.0053	0.010		mg/L	1	7/11/2022 11:09:15 AM	68545
Silver	ND	0.0018	0.0050		mg/L	1	7/11/2022 11:09:15 AM	68545
Vanadium	0.044	0.0035	0.050	J	mg/L	1	7/11/2022 11:09:15 AM	68545
Zinc	0.046	0.0039	0.010		mg/L	1	7/11/2022 11:09:15 AM	68545
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/7/2022 1:05:30 PM	68545
Arsenic	0.0028	0.00013	0.0010		mg/L	1	7/7/2022 1:05:30 PM	68545
Lead	0.014	0.000061	0.00050		mg/L	1	7/7/2022 1:05:30 PM	68545
Selenium	0.0027	0.00037	0.0010		mg/L	1	7/7/2022 1:05:30 PM	68545
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/8/2022 11:16:27 AM	68621

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-30
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022 8:15:00 AM
Lab ID: 2206F41-002E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.035	0.0011	0.0020		mg/L	1	6/30/2022 11:29:15 AM	B89154
Beryllium	ND	0.00088	0.0020		mg/L	1	6/30/2022 11:29:15 AM	B89154
Cadmium	ND	0.00098	0.0020		mg/L	1	6/30/2022 11:29:15 AM	B89154
Chromium	ND	0.0020	0.0060		mg/L	1	6/30/2022 11:29:15 AM	B89154
Cobalt	ND	0.0024	0.0060		mg/L	1	6/30/2022 11:29:15 AM	B89154
Nickel	0.015	0.0033	0.010		mg/L	1	6/30/2022 11:29:15 AM	B89154
Silver	0.0025	0.0013	0.0050	J	mg/L	1	6/30/2022 11:29:15 AM	B89154
Vanadium	0.0041	0.0017	0.050	J	mg/L	1	6/30/2022 11:29:15 AM	B89154
Zinc	0.0063	0.0032	0.010	J	mg/L	1	6/30/2022 11:29:15 AM	B89154
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/1/2022 4:20:39 PM	A89215
Arsenic	0.00063	0.00012	0.0010	J	mg/L	1	7/1/2022 4:20:39 PM	A89215
Lead	ND	0.000057	0.00050		mg/L	1	7/1/2022 4:20:39 PM	A89215
Selenium	0.00037	0.00034	0.0010	J	mg/L	1	7/1/2022 4:20:39 PM	A89215
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/8/2022 11:18:36 AM	68621

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-29
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022 8:40:00 AM
Lab ID: 2206F41-003A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.025	0.0090	0.050	J	mg/L	1	7/2/2022 9:26:00 PM	R89210
Surr: BFB	100	0	70-130		%Rec	1	7/2/2022 9:26:00 PM	R89210
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	0.23	1.0		µg/L	1	7/6/2022 8:03:39 AM	B89226
Toluene	ND	0.20	1.0		µg/L	1	7/6/2022 8:03:39 AM	B89226
Ethylbenzene	ND	0.21	1.0		µg/L	1	7/6/2022 8:03:39 AM	B89226
Methyl tert-butyl ether (MTBE)	22	0.39	1.0		µg/L	1	7/6/2022 8:03:39 AM	B89226
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	7/6/2022 8:03:39 AM	B89226
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	7/6/2022 8:03:39 AM	B89226
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	7/6/2022 8:03:39 AM	B89226
Acetone	ND	2.5	10		µg/L	1	7/6/2022 8:03:39 AM	B89226
Bromomethane	ND	0.85	3.0		µg/L	1	7/6/2022 8:03:39 AM	B89226
2-Butanone	ND	2.0	10		µg/L	1	7/6/2022 8:03:39 AM	B89226
Carbon disulfide	ND	0.59	10		µg/L	1	7/6/2022 8:03:39 AM	B89226
Chlorobenzene	ND	0.16	1.0		µg/L	1	7/6/2022 8:03:39 AM	B89226
Chloroform	ND	0.13	1.0		µg/L	1	7/6/2022 8:03:39 AM	B89226
Chloromethane	0.52	0.41	3.0	J	µg/L	1	7/6/2022 8:03:39 AM	B89226
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	7/6/2022 8:03:39 AM	B89226
1,1-Dichloroethane	0.94	0.27	1.0	J	µg/L	1	7/6/2022 8:03:39 AM	B89226
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	7/6/2022 8:03:39 AM	B89226
Isopropylbenzene	ND	0.18	1.0		µg/L	1	7/6/2022 8:03:39 AM	B89226
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	7/6/2022 8:03:39 AM	B89226
Methylene Chloride	ND	0.50	3.0		µg/L	1	7/6/2022 8:03:39 AM	B89226
n-Butylbenzene	ND	0.25	3.0		µg/L	1	7/6/2022 8:03:39 AM	B89226
n-Propylbenzene	ND	0.18	1.0		µg/L	1	7/6/2022 8:03:39 AM	B89226
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	7/6/2022 8:03:39 AM	B89226
Styrene	ND	0.14	1.0		µg/L	1	7/6/2022 8:03:39 AM	B89226
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	7/6/2022 8:03:39 AM	B89226
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	7/6/2022 8:03:39 AM	B89226
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	7/6/2022 8:03:39 AM	B89226
Vinyl chloride	ND	0.32	1.0		µg/L	1	7/6/2022 8:03:39 AM	B89226
Xylenes, Total	ND	0.37	1.5		µg/L	1	7/6/2022 8:03:39 AM	B89226
Surr: 1,2-Dichloroethane-d4	106	0	70-130		%Rec	1	7/6/2022 8:03:39 AM	B89226
Surr: 4-Bromofluorobenzene	106	0	70-130		%Rec	1	7/6/2022 8:03:39 AM	B89226
Surr: Dibromofluoromethane	109	0	70-130		%Rec	1	7/6/2022 8:03:39 AM	B89226
Surr: Toluene-d8	103	0	70-130		%Rec	1	7/6/2022 8:03:39 AM	B89226

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-29
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022 8:40:00 AM
Lab ID: 2206F41-003B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **BRM**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	7/6/2022 9:24:49 PM	68566

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-29
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022 8:40:00 AM
Lab ID: 2206F41-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.57	0.016	0.064		mg/L	1	7/11/2022 12:44:26 PM	68495
Motor Oil Range Organics (MRO)	0.57	0.052	0.080		mg/L	1	7/11/2022 12:44:26 PM	68495
Surr: DNOP	125	0	42.2-138		%Rec	1	7/11/2022 12:44:26 PM	68495
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	7/13/2022 3:12:58 PM	68468
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	7/13/2022 3:12:58 PM	68468
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	7/13/2022 3:12:58 PM	68468
Di-n-octyl phthalate	ND	12	20		µg/L	1	7/13/2022 3:12:58 PM	68468
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	7/13/2022 3:12:58 PM	68468
Diethyl phthalate	ND	6.0	10		µg/L	1	7/13/2022 3:12:58 PM	68468
Dimethyl phthalate	ND	6.0	10		µg/L	1	7/13/2022 3:12:58 PM	68468
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	7/13/2022 3:12:58 PM	68468
2,4-Dinitrophenol	ND	16	20		µg/L	1	7/13/2022 3:12:58 PM	68468
2-Methylphenol	ND	5.0	10		µg/L	1	7/13/2022 3:12:58 PM	68468
3+4-Methylphenol	ND	5.1	10		µg/L	1	7/13/2022 3:12:58 PM	68468
Phenol	ND	18	20		µg/L	1	7/13/2022 3:12:58 PM	68468
Pyridine	ND	14	40		µg/L	1	7/13/2022 3:12:58 PM	68468
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	7/13/2022 3:12:58 PM	68468
Surr: 2-Fluorophenol	47.3	0	29.4-87.7		%Rec	1	7/13/2022 3:12:58 PM	68468
Surr: Phenol-d5	41.0	0	28.5-64.7		%Rec	1	7/13/2022 3:12:58 PM	68468
Surr: 2,4,6-Tribromophenol	55.6	0	18.6-129		%Rec	1	7/13/2022 3:12:58 PM	68468
Surr: Nitrobenzene-d5	69.4	0	36.9-103		%Rec	1	7/13/2022 3:12:58 PM	68468
Surr: 2-Fluorobiphenyl	61.0	0	38.1-99.9		%Rec	1	7/13/2022 3:12:58 PM	68468
Surr: 4-Terphenyl-d14	80.1	0	48-155		%Rec	1	7/13/2022 3:12:58 PM	68468
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	4.5	0.11	1.0		µg/L	1	7/7/2022 7:53:00 PM	68468
Naphthalene	ND	0.20	0.30		µg/L	1	7/7/2022 7:53:00 PM	68468
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	7/7/2022 7:53:00 PM	68468
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	7/7/2022 7:53:00 PM	68468
Acenaphthene	ND	0.14	0.30		µg/L	1	7/7/2022 7:53:00 PM	68468
Fluorene	ND	0.095	0.30		µg/L	1	7/7/2022 7:53:00 PM	68468
Phenanthrene	ND	0.16	0.30		µg/L	1	7/7/2022 7:53:00 PM	68468
Anthracene	ND	0.14	0.30		µg/L	1	7/7/2022 7:53:00 PM	68468
Fluoranthene	ND	0.14	0.30		µg/L	1	7/7/2022 7:53:00 PM	68468
Pyrene	ND	0.32	1.0		µg/L	1	7/7/2022 7:53:00 PM	68468
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	7/7/2022 7:53:00 PM	68468
Chrysene	ND	0.25	0.30		µg/L	1	7/7/2022 7:53:00 PM	68468
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	7/7/2022 7:53:00 PM	68468
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	7/7/2022 7:53:00 PM	68468

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-29
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022 8:40:00 AM
Lab ID: 2206F41-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	72.2	0	31.6-100		%Rec	1	7/7/2022 7:53:00 PM	68468
Surr: 2-Fluorobiphenyl	66.9	0	26.7-90.1		%Rec	1	7/7/2022 7:53:00 PM	68468
Surr: 4-Terphenyl-d14	84.1	0	72.3-147		%Rec	1	7/7/2022 7:53:00 PM	68468

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-29
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022 8:40:00 AM
Lab ID: 2206F41-003D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.26	0.0016	0.0030		mg/L	1	7/11/2022 11:15:33 AM	68545
Beryllium	ND	0.00088	0.0020		mg/L	1	7/11/2022 11:15:33 AM	68545
Cadmium	ND	0.0018	0.0020		mg/L	1	7/11/2022 11:15:33 AM	68545
Chromium	ND	0.0020	0.0060		mg/L	1	7/11/2022 11:15:33 AM	68545
Cobalt	0.0070	0.0035	0.0060		mg/L	1	7/11/2022 11:15:33 AM	68545
Nickel	0.024	0.0053	0.010		mg/L	1	7/11/2022 11:15:33 AM	68545
Silver	ND	0.0018	0.0050		mg/L	1	7/11/2022 11:15:33 AM	68545
Vanadium	0.0073	0.0035	0.050	J	mg/L	1	7/11/2022 11:15:33 AM	68545
Zinc	0.013	0.0039	0.010		mg/L	1	7/11/2022 11:15:33 AM	68545
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/7/2022 1:07:57 PM	68545
Arsenic	0.00096	0.00013	0.0010	J	mg/L	1	7/7/2022 1:07:57 PM	68545
Lead	0.00053	0.000061	0.00050		mg/L	1	7/7/2022 1:07:57 PM	68545
Selenium	0.00075	0.00037	0.0010	J	mg/L	1	7/7/2022 1:07:57 PM	68545
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/8/2022 11:20:45 AM	68621

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-29
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022 8:40:00 AM
Lab ID: 2206F41-003E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.16	0.0011	0.0020		mg/L	1	6/30/2022 11:33:53 AM	B89154
Beryllium	ND	0.00088	0.0020		mg/L	1	6/30/2022 11:33:53 AM	B89154
Cadmium	ND	0.00098	0.0020		mg/L	1	6/30/2022 11:33:53 AM	B89154
Chromium	ND	0.0020	0.0060		mg/L	1	6/30/2022 11:33:53 AM	B89154
Cobalt	ND	0.0024	0.0060		mg/L	1	6/30/2022 11:33:53 AM	B89154
Nickel	0.015	0.0033	0.010		mg/L	1	6/30/2022 11:33:53 AM	B89154
Silver	0.0072	0.0013	0.0050		mg/L	1	6/30/2022 11:33:53 AM	B89154
Vanadium	0.0064	0.0017	0.050	J	mg/L	1	6/30/2022 11:33:53 AM	B89154
Zinc	0.0087	0.0032	0.010	J	mg/L	1	6/30/2022 11:33:53 AM	B89154
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/1/2022 4:23:20 PM	A89215
Arsenic	0.00083	0.00012	0.0010	J	mg/L	1	7/1/2022 4:23:20 PM	A89215
Lead	0.000064	0.000057	0.00050	J	mg/L	1	7/1/2022 4:23:20 PM	A89215
Selenium	ND	0.00034	0.0010		mg/L	1	7/1/2022 4:23:20 PM	A89215
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/8/2022 11:22:54 AM	68621

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OPIS-1
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022 9:10:00 AM
Lab ID: 2206F41-004A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.48	0.018	0.10		mg/L	2	7/2/2022 9:45:00 PM	R89210
Surr: BFB	145	0	70-130	S	%Rec	2	7/2/2022 9:45:00 PM	R89210
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	51	1.1	5.0		µg/L	5	7/6/2022 8:32:12 AM	B89226
Toluene	ND	1.0	5.0		µg/L	5	7/6/2022 8:32:12 AM	B89226
Ethylbenzene	8.8	1.1	5.0		µg/L	5	7/6/2022 8:32:12 AM	B89226
Methyl tert-butyl ether (MTBE)	320	2.0	5.0		µg/L	5	7/6/2022 8:32:12 AM	B89226
1,2,4-Trimethylbenzene	1.2	0.61	5.0	J	µg/L	5	7/6/2022 8:32:12 AM	B89226
1,3,5-Trimethylbenzene	ND	0.91	5.0		µg/L	5	7/6/2022 8:32:12 AM	B89226
1,2-Dichloroethane (EDC)	ND	1.3	5.0		µg/L	5	7/6/2022 8:32:12 AM	B89226
Acetone	ND	13	50		µg/L	5	7/6/2022 8:32:12 AM	B89226
Bromomethane	ND	4.3	15		µg/L	5	7/6/2022 8:32:12 AM	B89226
2-Butanone	ND	10	50		µg/L	5	7/6/2022 8:32:12 AM	B89226
Carbon disulfide	ND	3.0	50		µg/L	5	7/6/2022 8:32:12 AM	B89226
Chlorobenzene	ND	0.78	5.0		µg/L	5	7/6/2022 8:32:12 AM	B89226
Chloroform	ND	0.67	5.0		µg/L	5	7/6/2022 8:32:12 AM	B89226
Chloromethane	ND	2.1	15		µg/L	5	7/6/2022 8:32:12 AM	B89226
cis-1,2-DCE	ND	1.9	5.0		µg/L	5	7/6/2022 8:32:12 AM	B89226
1,1-Dichloroethane	3.0	1.4	5.0	J	µg/L	5	7/6/2022 8:32:12 AM	B89226
1,1-Dichloroethene	ND	1.0	5.0		µg/L	5	7/6/2022 8:32:12 AM	B89226
Isopropylbenzene	ND	0.91	5.0		µg/L	5	7/6/2022 8:32:12 AM	B89226
4-Isopropyltoluene	ND	1.0	5.0		µg/L	5	7/6/2022 8:32:12 AM	B89226
Methylene Chloride	ND	2.5	15		µg/L	5	7/6/2022 8:32:12 AM	B89226
n-Butylbenzene	ND	1.3	15		µg/L	5	7/6/2022 8:32:12 AM	B89226
n-Propylbenzene	1.0	0.91	5.0	J	µg/L	5	7/6/2022 8:32:12 AM	B89226
sec-Butylbenzene	ND	0.72	5.0		µg/L	5	7/6/2022 8:32:12 AM	B89226
Styrene	ND	0.68	5.0		µg/L	5	7/6/2022 8:32:12 AM	B89226
Tetrachloroethene (PCE)	ND	1.8	5.0		µg/L	5	7/6/2022 8:32:12 AM	B89226
1,1,1-Trichloroethane	ND	1.5	5.0		µg/L	5	7/6/2022 8:32:12 AM	B89226
Trichloroethene (TCE)	ND	1.0	5.0		µg/L	5	7/6/2022 8:32:12 AM	B89226
Vinyl chloride	ND	1.6	5.0		µg/L	5	7/6/2022 8:32:12 AM	B89226
Xylenes, Total	ND	1.9	7.5		µg/L	5	7/6/2022 8:32:12 AM	B89226
Surr: 1,2-Dichloroethane-d4	111	0	70-130		%Rec	5	7/6/2022 8:32:12 AM	B89226
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	5	7/6/2022 8:32:12 AM	B89226
Surr: Dibromofluoromethane	114	0	70-130		%Rec	5	7/6/2022 8:32:12 AM	B89226
Surr: Toluene-d8	98.3	0	70-130		%Rec	5	7/6/2022 8:32:12 AM	B89226

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OPIS-1
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022 9:10:00 AM
Lab ID: 2206F41-004B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **BRM**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	7/6/2022 9:40:15 PM	68566

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OPIS-1
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022 9:10:00 AM
Lab ID: 2206F41-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	6.0	0.032	0.13		mg/L	2	7/12/2022 3:42:08 PM	68495
Motor Oil Range Organics (MRO)	0.67	0.10	0.16		mg/L	2	7/12/2022 3:42:08 PM	68495
Surr: DNOP	83.2	0	42.2-138		%Rec	2	7/12/2022 3:42:08 PM	68495
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	180	200	D	µg/L	10	7/13/2022 3:55:25 PM	68468
Bis(2-ethylhexyl)phthalate	ND	84	100	D	µg/L	10	7/13/2022 3:55:25 PM	68468
Di-n-butyl phthalate	ND	77	100	D	µg/L	10	7/13/2022 3:55:25 PM	68468
Di-n-octyl phthalate	ND	120	200	D	µg/L	10	7/13/2022 3:55:25 PM	68468
1,4-Dichlorobenzene	ND	24	50	D	µg/L	10	7/13/2022 3:55:25 PM	68468
Diethyl phthalate	ND	60	100	D	µg/L	10	7/13/2022 3:55:25 PM	68468
Dimethyl phthalate	ND	60	100	D	µg/L	10	7/13/2022 3:55:25 PM	68468
2,4-Dimethylphenol	ND	58	100	D	µg/L	10	7/13/2022 3:55:25 PM	68468
2,4-Dinitrophenol	ND	160	200	D	µg/L	10	7/13/2022 3:55:25 PM	68468
2-Methylphenol	ND	50	100	D	µg/L	10	7/13/2022 3:55:25 PM	68468
3+4-Methylphenol	ND	51	100	D	µg/L	10	7/13/2022 3:55:25 PM	68468
Phenol	ND	180	200	D	µg/L	10	7/13/2022 3:55:25 PM	68468
Pyridine	ND	140	400	D	µg/L	10	7/13/2022 3:55:25 PM	68468
2,4,6-Trichlorophenol	ND	59	100	D	µg/L	10	7/13/2022 3:55:25 PM	68468
Surr: 2-Fluorophenol	0	0	29.4-87.7	SD	%Rec	10	7/13/2022 3:55:25 PM	68468
Surr: Phenol-d5	0	0	28.5-64.7	SD	%Rec	10	7/13/2022 3:55:25 PM	68468
Surr: 2,4,6-Tribromophenol	0	0	18.6-129	SD	%Rec	10	7/13/2022 3:55:25 PM	68468
Surr: Nitrobenzene-d5	0	0	36.9-103	SD	%Rec	10	7/13/2022 3:55:25 PM	68468
Surr: 2-Fluorobiphenyl	0	0	38.1-99.9	SD	%Rec	10	7/13/2022 3:55:25 PM	68468
Surr: 4-Terphenyl-d14	0	0	48-155	SD	%Rec	10	7/13/2022 3:55:25 PM	68468
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	ND	1.1	10	D	µg/L	10	7/7/2022 8:39:00 PM	68468
Naphthalene	ND	2.0	3.0	D	µg/L	10	7/7/2022 8:39:00 PM	68468
1-Methylnaphthalene	ND	1.5	3.0	D	µg/L	10	7/7/2022 8:39:00 PM	68468
2-Methylnaphthalene	ND	1.4	3.0	D	µg/L	10	7/7/2022 8:39:00 PM	68468
Acenaphthene	ND	1.4	3.0	D	µg/L	10	7/7/2022 8:39:00 PM	68468
Fluorene	ND	0.95	3.0	D	µg/L	10	7/7/2022 8:39:00 PM	68468
Phenanthrene	ND	1.6	3.0	D	µg/L	10	7/7/2022 8:39:00 PM	68468
Anthracene	ND	1.4	3.0	D	µg/L	10	7/7/2022 8:39:00 PM	68468
Fluoranthene	ND	1.4	3.0	D	µg/L	10	7/7/2022 8:39:00 PM	68468
Pyrene	ND	3.2	10	D	µg/L	10	7/7/2022 8:39:00 PM	68468
Benz(a)anthracene	ND	1.5	3.0	D	µg/L	10	7/7/2022 8:39:00 PM	68468
Chrysene	ND	2.5	3.0	D	µg/L	10	7/7/2022 8:39:00 PM	68468
Benzo(b)fluoranthene	ND	1.4	3.0	D	µg/L	10	7/7/2022 8:39:00 PM	68468
Indeno(1,2,3-cd)pyrene	ND	2.3	3.0	D	µg/L	10	7/7/2022 8:39:00 PM	68468

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OPIS-1
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022 9:10:00 AM
Lab ID: 2206F41-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	0	0	31.6-100	SD	%Rec	10	7/7/2022 8:39:00 PM	68468
Surr: 2-Fluorobiphenyl	0	0	26.7-90.1	SD	%Rec	10	7/7/2022 8:39:00 PM	68468
Surr: 4-Terphenyl-d14	0	0	72.3-147	SD	%Rec	10	7/7/2022 8:39:00 PM	68468

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OPIS-1
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022 9:10:00 AM
Lab ID: 2206F41-004D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	1.1	0.0079	0.015		mg/L	5	7/11/2022 11:18:17 AM	68545
Beryllium	ND	0.00088	0.0020		mg/L	1	7/11/2022 11:17:00 AM	68545
Cadmium	ND	0.0018	0.0020		mg/L	1	7/11/2022 11:17:00 AM	68545
Chromium	0.0022	0.0020	0.0060	J	mg/L	1	7/11/2022 11:17:00 AM	68545
Cobalt	0.010	0.0035	0.0060		mg/L	1	7/11/2022 11:17:00 AM	68545
Nickel	0.18	0.0053	0.010	*	mg/L	1	7/11/2022 11:17:00 AM	68545
Silver	ND	0.0018	0.0050		mg/L	1	7/11/2022 11:17:00 AM	68545
Vanadium	0.037	0.0035	0.050	J	mg/L	1	7/11/2022 11:17:00 AM	68545
Zinc	0.029	0.0039	0.010		mg/L	1	7/11/2022 11:17:00 AM	68545
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/7/2022 1:10:23 PM	68545
Arsenic	0.0060	0.00013	0.0010		mg/L	1	7/7/2022 1:10:23 PM	68545
Lead	0.0073	0.000061	0.00050		mg/L	1	7/7/2022 1:10:23 PM	68545
Selenium	0.0014	0.00037	0.0010		mg/L	1	7/7/2022 1:10:23 PM	68545
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/8/2022 11:25:04 AM	68621

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OPIS-1
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022 9:10:00 AM
Lab ID: 2206F41-004E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.91	0.0011	0.0020		mg/L	1	6/30/2022 11:38:39 AM	B89154
Beryllium	ND	0.00088	0.0020		mg/L	1	6/30/2022 11:38:39 AM	B89154
Cadmium	0.0011	0.00098	0.0020	J	mg/L	1	6/30/2022 11:38:39 AM	B89154
Chromium	ND	0.0020	0.0060		mg/L	1	6/30/2022 11:38:39 AM	B89154
Cobalt	0.0051	0.0024	0.0060	J	mg/L	1	6/30/2022 11:38:39 AM	B89154
Nickel	0.18	0.0033	0.010	*	mg/L	1	6/30/2022 11:38:39 AM	B89154
Silver	0.0029	0.0013	0.0050	J	mg/L	1	6/30/2022 11:38:39 AM	B89154
Vanadium	0.023	0.0017	0.050	J	mg/L	1	6/30/2022 11:38:39 AM	B89154
Zinc	0.032	0.0032	0.010		mg/L	1	6/30/2022 11:38:39 AM	B89154
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	7/1/2022 4:26:02 PM	A89215
Arsenic	0.0055	0.00061	0.0050		mg/L	5	7/1/2022 4:26:02 PM	A89215
Lead	0.0053	0.00028	0.0025		mg/L	5	7/1/2022 4:26:02 PM	A89215
Selenium	0.0018	0.0017	0.0050	J	mg/L	5	7/1/2022 4:26:02 PM	A89215
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/8/2022 11:27:14 AM	68621

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1-NM
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022 9:35:00 AM
Lab ID: 2206F41-005A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	7/2/2022 10:05:00 PM	R89210
Surr: BFB	92.5	0	70-130		%Rec	1	7/2/2022 10:05:00 PM	R89210
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	0.23	1.0		µg/L	1	7/6/2022 9:00:45 AM	B89226
Toluene	ND	0.20	1.0		µg/L	1	7/6/2022 9:00:45 AM	B89226
Ethylbenzene	ND	0.21	1.0		µg/L	1	7/6/2022 9:00:45 AM	B89226
Methyl tert-butyl ether (MTBE)	0.41	0.39	1.0	J	µg/L	1	7/6/2022 9:00:45 AM	B89226
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	7/6/2022 9:00:45 AM	B89226
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	7/6/2022 9:00:45 AM	B89226
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	7/6/2022 9:00:45 AM	B89226
Acetone	ND	2.5	10		µg/L	1	7/6/2022 9:00:45 AM	B89226
Bromomethane	ND	0.85	3.0		µg/L	1	7/6/2022 9:00:45 AM	B89226
2-Butanone	ND	2.0	10		µg/L	1	7/6/2022 9:00:45 AM	B89226
Carbon disulfide	ND	0.59	10		µg/L	1	7/6/2022 9:00:45 AM	B89226
Chlorobenzene	ND	0.16	1.0		µg/L	1	7/6/2022 9:00:45 AM	B89226
Chloroform	ND	0.13	1.0		µg/L	1	7/6/2022 9:00:45 AM	B89226
Chloromethane	0.44	0.41	3.0	J	µg/L	1	7/6/2022 9:00:45 AM	B89226
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	7/6/2022 9:00:45 AM	B89226
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	7/6/2022 9:00:45 AM	B89226
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	7/6/2022 9:00:45 AM	B89226
Isopropylbenzene	ND	0.18	1.0		µg/L	1	7/6/2022 9:00:45 AM	B89226
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	7/6/2022 9:00:45 AM	B89226
Methylene Chloride	ND	0.50	3.0		µg/L	1	7/6/2022 9:00:45 AM	B89226
n-Butylbenzene	ND	0.25	3.0		µg/L	1	7/6/2022 9:00:45 AM	B89226
n-Propylbenzene	ND	0.18	1.0		µg/L	1	7/6/2022 9:00:45 AM	B89226
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	7/6/2022 9:00:45 AM	B89226
Styrene	ND	0.14	1.0		µg/L	1	7/6/2022 9:00:45 AM	B89226
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	7/6/2022 9:00:45 AM	B89226
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	7/6/2022 9:00:45 AM	B89226
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	7/6/2022 9:00:45 AM	B89226
Vinyl chloride	ND	0.32	1.0		µg/L	1	7/6/2022 9:00:45 AM	B89226
Xylenes, Total	ND	0.37	1.5		µg/L	1	7/6/2022 9:00:45 AM	B89226
Surr: 1,2-Dichloroethane-d4	115	0	70-130		%Rec	1	7/6/2022 9:00:45 AM	B89226
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	7/6/2022 9:00:45 AM	B89226
Surr: Dibromofluoromethane	118	0	70-130		%Rec	1	7/6/2022 9:00:45 AM	B89226
Surr: Toluene-d8	102	0	70-130		%Rec	1	7/6/2022 9:00:45 AM	B89226

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1-NM
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022 9:35:00 AM
Lab ID: 2206F41-005B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **BRM**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	7/6/2022 9:55:33 PM	68566

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1-NM
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022 9:35:00 AM
Lab ID: 2206F41-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.17	0.016	0.064		mg/L	1	7/11/2022 2:44:09 PM	68495
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	7/11/2022 2:44:09 PM	68495
Surr: DNOP	98.7	0	42.2-138		%Rec	1	7/11/2022 2:44:09 PM	68495
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	7/13/2022 4:38:05 PM	68468
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	7/13/2022 4:38:05 PM	68468
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	7/13/2022 4:38:05 PM	68468
Di-n-octyl phthalate	ND	12	20		µg/L	1	7/13/2022 4:38:05 PM	68468
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	7/13/2022 4:38:05 PM	68468
Diethyl phthalate	ND	6.0	10		µg/L	1	7/13/2022 4:38:05 PM	68468
Dimethyl phthalate	ND	6.0	10		µg/L	1	7/13/2022 4:38:05 PM	68468
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	7/13/2022 4:38:05 PM	68468
2,4-Dinitrophenol	ND	16	20		µg/L	1	7/13/2022 4:38:05 PM	68468
2-Methylphenol	ND	5.0	10		µg/L	1	7/13/2022 4:38:05 PM	68468
3+4-Methylphenol	ND	5.1	10		µg/L	1	7/13/2022 4:38:05 PM	68468
Phenol	ND	18	20		µg/L	1	7/13/2022 4:38:05 PM	68468
Pyridine	ND	14	40		µg/L	1	7/13/2022 4:38:05 PM	68468
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	7/13/2022 4:38:05 PM	68468
Surr: 2-Fluorophenol	56.2	0	29.4-87.7		%Rec	1	7/13/2022 4:38:05 PM	68468
Surr: Phenol-d5	42.8	0	28.5-64.7		%Rec	1	7/13/2022 4:38:05 PM	68468
Surr: 2,4,6-Tribromophenol	60.4	0	18.6-129		%Rec	1	7/13/2022 4:38:05 PM	68468
Surr: Nitrobenzene-d5	69.0	0	36.9-103		%Rec	1	7/13/2022 4:38:05 PM	68468
Surr: 2-Fluorobiphenyl	60.2	0	38.1-99.9		%Rec	1	7/13/2022 4:38:05 PM	68468
Surr: 4-Terphenyl-d14	77.3	0	48-155		%Rec	1	7/13/2022 4:38:05 PM	68468
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	0.22	0.11	1.0	J	µg/L	1	7/7/2022 9:26:00 PM	68468
Naphthalene	ND	0.20	0.30		µg/L	1	7/7/2022 9:26:00 PM	68468
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	7/7/2022 9:26:00 PM	68468
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	7/7/2022 9:26:00 PM	68468
Acenaphthene	ND	0.14	0.30		µg/L	1	7/7/2022 9:26:00 PM	68468
Fluorene	ND	0.095	0.30		µg/L	1	7/7/2022 9:26:00 PM	68468
Phenanthrene	ND	0.16	0.30		µg/L	1	7/7/2022 9:26:00 PM	68468
Anthracene	ND	0.14	0.30		µg/L	1	7/7/2022 9:26:00 PM	68468
Fluoranthene	ND	0.14	0.30		µg/L	1	7/7/2022 9:26:00 PM	68468
Pyrene	ND	0.32	1.0		µg/L	1	7/7/2022 9:26:00 PM	68468
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	7/7/2022 9:26:00 PM	68468
Chrysene	ND	0.25	0.30		µg/L	1	7/7/2022 9:26:00 PM	68468
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	7/7/2022 9:26:00 PM	68468
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	7/7/2022 9:26:00 PM	68468

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1-NM
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022 9:35:00 AM
Lab ID: 2206F41-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	73.9	0	31.6-100		%Rec	1	7/7/2022 9:26:00 PM	68468
Surr: 2-Fluorobiphenyl	66.2	0	26.7-90.1		%Rec	1	7/7/2022 9:26:00 PM	68468
Surr: 4-Terphenyl-d14	83.0	0	72.3-147		%Rec	1	7/7/2022 9:26:00 PM	68468

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1-NM
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022 9:35:00 AM
Lab ID: 2206F41-005D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.099	0.0016	0.0030		mg/L	1	7/11/2022 11:19:52 AM	68545
Beryllium	ND	0.00088	0.0020		mg/L	1	7/11/2022 11:19:52 AM	68545
Cadmium	ND	0.0018	0.0020		mg/L	1	7/11/2022 11:19:52 AM	68545
Chromium	ND	0.0020	0.0060		mg/L	1	7/11/2022 11:19:52 AM	68545
Cobalt	ND	0.0035	0.0060		mg/L	1	7/11/2022 11:19:52 AM	68545
Nickel	ND	0.0053	0.010		mg/L	1	7/11/2022 11:19:52 AM	68545
Silver	ND	0.0018	0.0050		mg/L	1	7/11/2022 11:19:52 AM	68545
Vanadium	0.038	0.0035	0.050	J	mg/L	1	7/11/2022 11:19:52 AM	68545
Zinc	0.014	0.0039	0.010		mg/L	1	7/11/2022 11:19:52 AM	68545
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/7/2022 1:12:50 PM	68545
Arsenic	0.0026	0.00013	0.0010		mg/L	1	7/7/2022 1:12:50 PM	68545
Lead	0.00063	0.000061	0.00050		mg/L	1	7/7/2022 1:12:50 PM	68545
Selenium	0.0046	0.00037	0.0010		mg/L	1	7/7/2022 1:12:50 PM	68545
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/8/2022 11:29:22 AM	68621

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1-NM
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022 9:35:00 AM
Lab ID: 2206F41-005E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.070	0.0011	0.0020		mg/L	1	6/30/2022 11:43:12 AM	B89154
Beryllium	ND	0.00088	0.0020		mg/L	1	6/30/2022 11:43:12 AM	B89154
Cadmium	ND	0.00098	0.0020		mg/L	1	6/30/2022 11:43:12 AM	B89154
Chromium	ND	0.0020	0.0060		mg/L	1	6/30/2022 11:43:12 AM	B89154
Cobalt	ND	0.0024	0.0060		mg/L	1	6/30/2022 11:43:12 AM	B89154
Nickel	ND	0.0033	0.010		mg/L	1	6/30/2022 11:43:12 AM	B89154
Silver	0.0016	0.0013	0.0050	J	mg/L	1	6/30/2022 11:43:12 AM	B89154
Vanadium	0.039	0.0017	0.050	J	mg/L	1	6/30/2022 11:43:12 AM	B89154
Zinc	0.0089	0.0032	0.010	J	mg/L	1	6/30/2022 11:43:12 AM	B89154
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/1/2022 4:28:43 PM	A89215
Arsenic	0.0025	0.00012	0.0010		mg/L	1	7/1/2022 4:28:43 PM	A89215
Lead	ND	0.000057	0.00050		mg/L	1	7/1/2022 4:28:43 PM	A89215
Selenium	0.0078	0.00034	0.0010		mg/L	1	7/1/2022 4:28:43 PM	A89215
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/8/2022 12:28:50 PM	68621

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-12A
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022 10:00:00 AM
Lab ID: 2206F41-006A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	2.8	0.0090	0.050		mg/L	1	7/2/2022 10:25:00 PM	R89210
Surr: BFB	261	0	70-130	S	%Rec	1	7/2/2022 10:25:00 PM	R89210
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	690	4.5	20		µg/L	20	7/6/2022 5:35:49 PM	R89293
Toluene	1.5	0.40	2.0	J	µg/L	2	7/6/2022 9:29:20 AM	B89226
Ethylbenzene	33	0.43	2.0		µg/L	2	7/6/2022 9:29:20 AM	B89226
Methyl tert-butyl ether (MTBE)	ND	0.79	2.0		µg/L	2	7/6/2022 9:29:20 AM	B89226
1,2,4-Trimethylbenzene	25	0.24	2.0		µg/L	2	7/6/2022 9:29:20 AM	B89226
1,3,5-Trimethylbenzene	18	0.36	2.0		µg/L	2	7/6/2022 9:29:20 AM	B89226
1,2-Dichloroethane (EDC)	0.92	0.51	2.0	J	µg/L	2	7/6/2022 9:29:20 AM	B89226
Acetone	11	5.0	20	J	µg/L	2	7/6/2022 9:29:20 AM	B89226
Bromomethane	ND	1.7	6.0		µg/L	2	7/6/2022 9:29:20 AM	B89226
2-Butanone	4.7	4.1	20	J	µg/L	2	7/6/2022 9:29:20 AM	B89226
Carbon disulfide	ND	1.2	20		µg/L	2	7/6/2022 9:29:20 AM	B89226
Chlorobenzene	ND	0.31	2.0		µg/L	2	7/6/2022 9:29:20 AM	B89226
Chloroform	ND	0.27	2.0		µg/L	2	7/6/2022 9:29:20 AM	B89226
Chloromethane	2.2	0.82	6.0	J	µg/L	2	7/6/2022 9:29:20 AM	B89226
cis-1,2-DCE	0.94	0.78	2.0	J	µg/L	2	7/6/2022 9:29:20 AM	B89226
1,1-Dichloroethane	1.1	0.55	2.0	J	µg/L	2	7/6/2022 9:29:20 AM	B89226
1,1-Dichloroethene	ND	0.40	2.0		µg/L	2	7/6/2022 9:29:20 AM	B89226
Isopropylbenzene	6.8	0.37	2.0		µg/L	2	7/6/2022 9:29:20 AM	B89226
4-Isopropyltoluene	4.4	0.40	2.0		µg/L	2	7/6/2022 9:29:20 AM	B89226
Methylene Chloride	ND	1.0	6.0		µg/L	2	7/6/2022 9:29:20 AM	B89226
n-Butylbenzene	ND	0.51	6.0		µg/L	2	7/6/2022 9:29:20 AM	B89226
n-Propylbenzene	2.1	0.36	2.0		µg/L	2	7/6/2022 9:29:20 AM	B89226
sec-Butylbenzene	0.95	0.29	2.0	J	µg/L	2	7/6/2022 9:29:20 AM	B89226
Styrene	ND	0.27	2.0		µg/L	2	7/6/2022 9:29:20 AM	B89226
Tetrachloroethene (PCE)	ND	0.71	2.0		µg/L	2	7/6/2022 9:29:20 AM	B89226
1,1,1-Trichloroethane	ND	0.60	2.0		µg/L	2	7/6/2022 9:29:20 AM	B89226
Trichloroethene (TCE)	ND	0.41	2.0		µg/L	2	7/6/2022 9:29:20 AM	B89226
Vinyl chloride	ND	0.64	2.0		µg/L	2	7/6/2022 9:29:20 AM	B89226
Xylenes, Total	85	0.74	3.0		µg/L	2	7/6/2022 9:29:20 AM	B89226
Surr: 1,2-Dichloroethane-d4	105	0	70-130		%Rec	2	7/6/2022 9:29:20 AM	B89226
Surr: 4-Bromofluorobenzene	86.6	0	70-130		%Rec	2	7/6/2022 9:29:20 AM	B89226
Surr: Dibromofluoromethane	104	0	70-130		%Rec	2	7/6/2022 9:29:20 AM	B89226
Surr: Toluene-d8	102	0	70-130		%Rec	2	7/6/2022 9:29:20 AM	B89226

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-12A
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022 10:00:00 AM
Lab ID: 2206F41-006B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **BRM**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	7/6/2022 10:10:55 PM	68566

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-12A
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022 10:00:00 AM
Lab ID: 2206F41-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	2.0	0.016	0.064		mg/L	1	7/11/2022 3:08:06 PM	68495
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	7/11/2022 3:08:06 PM	68495
Surr: DNOP	97.3	0	42.2-138		%Rec	1	7/11/2022 3:08:06 PM	68495
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	7/8/2022 3:36:46 PM	68493
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	7/8/2022 3:36:46 PM	68493
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	7/8/2022 3:36:46 PM	68493
Di-n-octyl phthalate	ND	12	20		µg/L	1	7/8/2022 3:36:46 PM	68493
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	7/8/2022 3:36:46 PM	68493
Diethyl phthalate	ND	6.0	10		µg/L	1	7/8/2022 3:36:46 PM	68493
Dimethyl phthalate	ND	6.0	10		µg/L	1	7/8/2022 3:36:46 PM	68493
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	7/8/2022 3:36:46 PM	68493
2,4-Dinitrophenol	ND	16	20		µg/L	1	7/8/2022 3:36:46 PM	68493
2-Methylphenol	ND	5.0	10		µg/L	1	7/8/2022 3:36:46 PM	68493
3+4-Methylphenol	ND	5.1	10		µg/L	1	7/8/2022 3:36:46 PM	68493
Phenol	ND	18	20		µg/L	1	7/8/2022 3:36:46 PM	68493
Pyridine	ND	14	40		µg/L	1	7/8/2022 3:36:46 PM	68493
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	7/8/2022 3:36:46 PM	68493
Surr: 2-Fluorophenol	45.4	0	29.4-87.7		%Rec	1	7/8/2022 3:36:46 PM	68493
Surr: Phenol-d5	0	0	28.5-64.7	S	%Rec	1	7/8/2022 3:36:46 PM	68493
Surr: 2,4,6-Tribromophenol	58.4	0	18.6-129		%Rec	1	7/8/2022 3:36:46 PM	68493
Surr: Nitrobenzene-d5	60.5	0	36.9-103		%Rec	1	7/8/2022 3:36:46 PM	68493
Surr: 2-Fluorobiphenyl	55.2	0	38.1-99.9		%Rec	1	7/8/2022 3:36:46 PM	68493
Surr: 4-Terphenyl-d14	68.9	0	48-155		%Rec	1	7/8/2022 3:36:46 PM	68493
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	16	0.11	1.0		µg/L	1	7/7/2022 1:38:00 AM	68493
Naphthalene	2.8	0.20	0.30		µg/L	1	7/7/2022 1:38:00 AM	68493
1-Methylnaphthalene	0.96	0.15	0.30		µg/L	1	7/7/2022 1:38:00 AM	68493
2-Methylnaphthalene	0.42	0.14	0.30		µg/L	1	7/7/2022 1:38:00 AM	68493
Acenaphthene	ND	0.14	0.30		µg/L	1	7/7/2022 1:38:00 AM	68493
Fluorene	0.16	0.095	0.30	J	µg/L	1	7/7/2022 1:38:00 AM	68493
Phenanthrene	ND	0.16	0.30		µg/L	1	7/7/2022 1:38:00 AM	68493
Anthracene	ND	0.14	0.30		µg/L	1	7/7/2022 1:38:00 AM	68493
Fluoranthene	ND	0.14	0.30		µg/L	1	7/7/2022 1:38:00 AM	68493
Pyrene	ND	0.32	1.0		µg/L	1	7/7/2022 1:38:00 AM	68493
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	7/7/2022 1:38:00 AM	68493
Chrysene	ND	0.25	0.30		µg/L	1	7/7/2022 1:38:00 AM	68493
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	7/7/2022 1:38:00 AM	68493
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	7/7/2022 1:38:00 AM	68493

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-12A
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022 10:00:00 AM
Lab ID: 2206F41-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	62.7	0	31.6-100		%Rec	1	7/7/2022 1:38:00 AM	68493
Surr: 2-Fluorobiphenyl	53.5	0	26.7-90.1		%Rec	1	7/7/2022 1:38:00 AM	68493
Surr: 4-Terphenyl-d14	66.1	0	72.3-147	S	%Rec	1	7/7/2022 1:38:00 AM	68493

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-12A
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022 10:00:00 AM
Lab ID: 2206F41-006D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	2.1	0.0079	0.015	*	mg/L	5	7/11/2022 11:22:37 AM	68545
Beryllium	ND	0.00088	0.0020		mg/L	1	7/11/2022 11:21:16 AM	68545
Cadmium	ND	0.0018	0.0020		mg/L	1	7/11/2022 11:21:16 AM	68545
Chromium	0.014	0.0020	0.0060		mg/L	1	7/11/2022 11:21:16 AM	68545
Cobalt	0.012	0.0035	0.0060		mg/L	1	7/11/2022 11:21:16 AM	68545
Nickel	0.020	0.0053	0.010		mg/L	1	7/11/2022 11:21:16 AM	68545
Silver	ND	0.0018	0.0050		mg/L	1	7/11/2022 11:21:16 AM	68545
Vanadium	0.032	0.0035	0.050	J	mg/L	1	7/11/2022 11:21:16 AM	68545
Zinc	0.043	0.0039	0.010		mg/L	1	7/11/2022 11:21:16 AM	68545
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/7/2022 1:15:16 PM	68545
Arsenic	0.010	0.00013	0.0010	*	mg/L	1	7/7/2022 1:15:16 PM	68545
Lead	0.015	0.000061	0.00050	*	mg/L	1	7/7/2022 1:15:16 PM	68545
Selenium	0.0024	0.00037	0.0010		mg/L	1	7/7/2022 1:15:16 PM	68545
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/8/2022 12:30:58 PM	68621

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-12A
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022 10:00:00 AM
Lab ID: 2206F41-006E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.12	0.0011	0.0020		mg/L	1	6/30/2022 11:54:51 AM	B89154
Beryllium	ND	0.00088	0.0020		mg/L	1	6/30/2022 11:54:51 AM	B89154
Cadmium	ND	0.00098	0.0020		mg/L	1	6/30/2022 11:54:51 AM	B89154
Chromium	ND	0.0020	0.0060		mg/L	1	6/30/2022 11:54:51 AM	B89154
Cobalt	ND	0.0024	0.0060		mg/L	1	6/30/2022 11:54:51 AM	B89154
Nickel	0.0068	0.0033	0.010	J	mg/L	1	6/30/2022 11:54:51 AM	B89154
Silver	0.0021	0.0013	0.0050	J	mg/L	1	6/30/2022 11:54:51 AM	B89154
Vanadium	0.0040	0.0017	0.050	J	mg/L	1	6/30/2022 11:54:51 AM	B89154
Zinc	0.014	0.0032	0.010		mg/L	1	6/30/2022 11:54:51 AM	B89154
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/1/2022 4:31:24 PM	A89215
Arsenic	0.0063	0.00012	0.0010		mg/L	1	7/1/2022 4:31:24 PM	A89215
Lead	0.0010	0.000057	0.00050		mg/L	1	7/1/2022 4:31:24 PM	A89215
Selenium	0.00058	0.00034	0.0010	J	mg/L	1	7/1/2022 4:31:24 PM	A89215
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/8/2022 12:37:22 PM	68621

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-70
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022 10:20:00 AM
Lab ID: 2206F41-007A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.38	0.0090	0.050		mg/L	1	7/2/2022 10:44:00 PM	R89210
Surr: BFB	441	0	70-130	S	%Rec	1	7/2/2022 10:44:00 PM	R89210
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	1.2	0.23	1.0		µg/L	1	7/6/2022 9:57:52 AM	B89226
Toluene	ND	0.20	1.0		µg/L	1	7/6/2022 9:57:52 AM	B89226
Ethylbenzene	ND	0.21	1.0		µg/L	1	7/6/2022 9:57:52 AM	B89226
Methyl tert-butyl ether (MTBE)	62	0.39	1.0		µg/L	1	7/6/2022 9:57:52 AM	B89226
1,2,4-Trimethylbenzene	0.25	0.12	1.0	J	µg/L	1	7/6/2022 9:57:52 AM	B89226
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	7/6/2022 9:57:52 AM	B89226
1,2-Dichloroethane (EDC)	5.5	0.25	1.0		µg/L	1	7/6/2022 9:57:52 AM	B89226
Acetone	7.5	2.5	10	J	µg/L	1	7/6/2022 9:57:52 AM	B89226
Bromomethane	ND	0.85	3.0		µg/L	1	7/6/2022 9:57:52 AM	B89226
2-Butanone	2.6	2.0	10	J	µg/L	1	7/6/2022 9:57:52 AM	B89226
Carbon disulfide	ND	0.59	10		µg/L	1	7/6/2022 9:57:52 AM	B89226
Chlorobenzene	ND	0.16	1.0		µg/L	1	7/6/2022 9:57:52 AM	B89226
Chloroform	ND	0.13	1.0		µg/L	1	7/6/2022 9:57:52 AM	B89226
Chloromethane	1.4	0.41	3.0	J	µg/L	1	7/6/2022 9:57:52 AM	B89226
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	7/6/2022 9:57:52 AM	B89226
1,1-Dichloroethane	0.74	0.27	1.0	J	µg/L	1	7/6/2022 9:57:52 AM	B89226
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	7/6/2022 9:57:52 AM	B89226
Isopropylbenzene	28	0.18	1.0		µg/L	1	7/6/2022 9:57:52 AM	B89226
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	7/6/2022 9:57:52 AM	B89226
Methylene Chloride	ND	0.50	3.0		µg/L	1	7/6/2022 9:57:52 AM	B89226
n-Butylbenzene	1.2	0.25	3.0	J	µg/L	1	7/6/2022 9:57:52 AM	B89226
n-Propylbenzene	1.1	0.18	1.0		µg/L	1	7/6/2022 9:57:52 AM	B89226
sec-Butylbenzene	6.5	0.14	1.0		µg/L	1	7/6/2022 9:57:52 AM	B89226
Styrene	ND	0.14	1.0		µg/L	1	7/6/2022 9:57:52 AM	B89226
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	7/6/2022 9:57:52 AM	B89226
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	7/6/2022 9:57:52 AM	B89226
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	7/6/2022 9:57:52 AM	B89226
Vinyl chloride	ND	0.32	1.0		µg/L	1	7/6/2022 9:57:52 AM	B89226
Xylenes, Total	ND	0.37	1.5		µg/L	1	7/6/2022 9:57:52 AM	B89226
Surr: 1,2-Dichloroethane-d4	113	0	70-130		%Rec	1	7/6/2022 9:57:52 AM	B89226
Surr: 4-Bromofluorobenzene	94.4	0	70-130		%Rec	1	7/6/2022 9:57:52 AM	B89226
Surr: Dibromofluoromethane	111	0	70-130		%Rec	1	7/6/2022 9:57:52 AM	B89226
Surr: Toluene-d8	99.4	0	70-130		%Rec	1	7/6/2022 9:57:52 AM	B89226

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-70
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022 10:20:00 AM
Lab ID: 2206F41-007B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **BRM**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	7/6/2022 10:26:25 PM	68566

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-70
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022 10:20:00 AM
Lab ID: 2206F41-007C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.97	0.016	0.064		mg/L	1	7/11/2022 3:32:11 PM	68495
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	7/11/2022 3:32:11 PM	68495
Surr: DNOP	99.4	0	42.2-138		%Rec	1	7/11/2022 3:32:11 PM	68495
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	7/8/2022 4:19:25 PM	68493
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	7/8/2022 4:19:25 PM	68493
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	7/8/2022 4:19:25 PM	68493
Di-n-octyl phthalate	ND	12	20		µg/L	1	7/8/2022 4:19:25 PM	68493
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	7/8/2022 4:19:25 PM	68493
Diethyl phthalate	ND	6.0	10		µg/L	1	7/8/2022 4:19:25 PM	68493
Dimethyl phthalate	ND	6.0	10		µg/L	1	7/8/2022 4:19:25 PM	68493
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	7/8/2022 4:19:25 PM	68493
2,4-Dinitrophenol	ND	16	20		µg/L	1	7/8/2022 4:19:25 PM	68493
2-Methylphenol	ND	5.0	10		µg/L	1	7/8/2022 4:19:25 PM	68493
3+4-Methylphenol	ND	5.1	10		µg/L	1	7/8/2022 4:19:25 PM	68493
Phenol	ND	18	20		µg/L	1	7/8/2022 4:19:25 PM	68493
Pyridine	ND	14	40		µg/L	1	7/8/2022 4:19:25 PM	68493
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	7/8/2022 4:19:25 PM	68493
Surr: 2-Fluorophenol	43.7	0	29.4-87.7		%Rec	1	7/8/2022 4:19:25 PM	68493
Surr: Phenol-d5	32.4	0	28.5-64.7		%Rec	1	7/8/2022 4:19:25 PM	68493
Surr: 2,4,6-Tribromophenol	60.9	0	18.6-129		%Rec	1	7/8/2022 4:19:25 PM	68493
Surr: Nitrobenzene-d5	53.1	0	36.9-103		%Rec	1	7/8/2022 4:19:25 PM	68493
Surr: 2-Fluorobiphenyl	49.0	0	38.1-99.9		%Rec	1	7/8/2022 4:19:25 PM	68493
Surr: 4-Terphenyl-d14	71.2	0	48-155		%Rec	1	7/8/2022 4:19:25 PM	68493
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	0.70	0.11	1.0	J	µg/L	1	7/7/2022 2:26:00 AM	68493
Naphthalene	ND	0.20	0.30		µg/L	1	7/7/2022 2:26:00 AM	68493
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	7/7/2022 2:26:00 AM	68493
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	7/7/2022 2:26:00 AM	68493
Acenaphthene	0.24	0.14	0.30	J	µg/L	1	7/7/2022 2:26:00 AM	68493
Fluorene	ND	0.095	0.30		µg/L	1	7/7/2022 2:26:00 AM	68493
Phenanthrene	0.62	0.16	0.30		µg/L	1	7/7/2022 2:26:00 AM	68493
Anthracene	ND	0.14	0.30		µg/L	1	7/7/2022 2:26:00 AM	68493
Fluoranthene	ND	0.14	0.30		µg/L	1	7/7/2022 2:26:00 AM	68493
Pyrene	ND	0.32	1.0		µg/L	1	7/7/2022 2:26:00 AM	68493
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	7/7/2022 2:26:00 AM	68493
Chrysene	ND	0.25	0.30		µg/L	1	7/7/2022 2:26:00 AM	68493
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	7/7/2022 2:26:00 AM	68493
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	7/7/2022 2:26:00 AM	68493

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-70
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022 10:20:00 AM
Lab ID: 2206F41-007C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	64.0	0	31.6-100		%Rec	1	7/7/2022 2:26:00 AM	68493
Surr: 2-Fluorobiphenyl	56.6	0	26.7-90.1		%Rec	1	7/7/2022 2:26:00 AM	68493
Surr: 4-Terphenyl-d14	78.2	0	72.3-147		%Rec	1	7/7/2022 2:26:00 AM	68493

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-70
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022 10:20:00 AM
Lab ID: 2206F41-007D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.83	0.0016	0.0030		mg/L	1	7/11/2022 11:23:56 AM	68545
Beryllium	ND	0.00088	0.0020		mg/L	1	7/11/2022 11:23:56 AM	68545
Cadmium	ND	0.0018	0.0020		mg/L	1	7/11/2022 11:23:56 AM	68545
Chromium	0.0061	0.0020	0.0060		mg/L	1	7/11/2022 11:23:56 AM	68545
Cobalt	0.0099	0.0035	0.0060		mg/L	1	7/11/2022 11:23:56 AM	68545
Nickel	0.050	0.0053	0.010		mg/L	1	7/11/2022 11:23:56 AM	68545
Silver	ND	0.0018	0.0050		mg/L	1	7/11/2022 11:23:56 AM	68545
Vanadium	0.013	0.0035	0.050	J	mg/L	1	7/11/2022 11:23:56 AM	68545
Zinc	0.017	0.0039	0.010		mg/L	1	7/11/2022 11:23:56 AM	68545
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/7/2022 1:17:43 PM	68545
Arsenic	0.0024	0.00013	0.0010		mg/L	1	7/7/2022 1:17:43 PM	68545
Lead	0.0020	0.000061	0.00050		mg/L	1	7/7/2022 1:17:43 PM	68545
Selenium	0.00051	0.00037	0.0010	J	mg/L	1	7/7/2022 1:17:43 PM	68545
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/8/2022 12:39:30 PM	68621

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-70
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022 10:20:00 AM
Lab ID: 2206F41-007E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.54	0.0011	0.0020		mg/L	1	6/30/2022 11:59:35 AM	B89154
Beryllium	ND	0.00088	0.0020		mg/L	1	6/30/2022 11:59:35 AM	B89154
Cadmium	ND	0.00098	0.0020		mg/L	1	6/30/2022 11:59:35 AM	B89154
Chromium	ND	0.0020	0.0060		mg/L	1	6/30/2022 11:59:35 AM	B89154
Cobalt	0.0053	0.0024	0.0060	J	mg/L	1	6/30/2022 11:59:35 AM	B89154
Nickel	0.045	0.0033	0.010		mg/L	1	6/30/2022 11:59:35 AM	B89154
Silver	ND	0.0013	0.0050		mg/L	1	6/30/2022 11:59:35 AM	B89154
Vanadium	0.0018	0.0017	0.050	J	mg/L	1	6/30/2022 11:59:35 AM	B89154
Zinc	0.0097	0.0032	0.010	J	mg/L	1	6/30/2022 11:59:35 AM	B89154
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/1/2022 4:34:06 PM	A89215
Arsenic	0.0010	0.00012	0.0010		mg/L	1	7/1/2022 4:34:06 PM	A89215
Lead	0.00013	0.000057	0.00050	J	mg/L	1	7/1/2022 4:34:06 PM	A89215
Selenium	ND	0.00034	0.0010		mg/L	1	7/1/2022 4:34:06 PM	A89215
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/8/2022 12:41:39 PM	68621

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-28-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022
Lab ID: 2206F41-008A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.025	0.0090	0.050	J	mg/L	1	7/2/2022 11:04:00 PM	R89210
Surr: BFB	102	0	70-130		%Rec	1	7/2/2022 11:04:00 PM	R89210
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	0.23	1.0		µg/L	1	7/6/2022 10:26:25 AM	B89226
Toluene	ND	0.20	1.0		µg/L	1	7/6/2022 10:26:25 AM	B89226
Ethylbenzene	ND	0.21	1.0		µg/L	1	7/6/2022 10:26:25 AM	B89226
Methyl tert-butyl ether (MTBE)	22	0.39	1.0		µg/L	1	7/6/2022 10:26:25 AM	B89226
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	7/6/2022 10:26:25 AM	B89226
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	7/6/2022 10:26:25 AM	B89226
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	7/6/2022 10:26:25 AM	B89226
Acetone	ND	2.5	10		µg/L	1	7/6/2022 10:26:25 AM	B89226
Bromomethane	ND	0.85	3.0		µg/L	1	7/6/2022 10:26:25 AM	B89226
2-Butanone	ND	2.0	10		µg/L	1	7/6/2022 10:26:25 AM	B89226
Carbon disulfide	ND	0.59	10		µg/L	1	7/6/2022 10:26:25 AM	B89226
Chlorobenzene	ND	0.16	1.0		µg/L	1	7/6/2022 10:26:25 AM	B89226
Chloroform	ND	0.13	1.0		µg/L	1	7/6/2022 10:26:25 AM	B89226
Chloromethane	0.47	0.41	3.0	J	µg/L	1	7/6/2022 10:26:25 AM	B89226
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	7/6/2022 10:26:25 AM	B89226
1,1-Dichloroethane	0.91	0.27	1.0	J	µg/L	1	7/6/2022 10:26:25 AM	B89226
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	7/6/2022 10:26:25 AM	B89226
Isopropylbenzene	ND	0.18	1.0		µg/L	1	7/6/2022 10:26:25 AM	B89226
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	7/6/2022 10:26:25 AM	B89226
Methylene Chloride	ND	0.50	3.0		µg/L	1	7/6/2022 10:26:25 AM	B89226
n-Butylbenzene	ND	0.25	3.0		µg/L	1	7/6/2022 10:26:25 AM	B89226
n-Propylbenzene	ND	0.18	1.0		µg/L	1	7/6/2022 10:26:25 AM	B89226
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	7/6/2022 10:26:25 AM	B89226
Styrene	ND	0.14	1.0		µg/L	1	7/6/2022 10:26:25 AM	B89226
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	7/6/2022 10:26:25 AM	B89226
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	7/6/2022 10:26:25 AM	B89226
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	7/6/2022 10:26:25 AM	B89226
Vinyl chloride	ND	0.32	1.0		µg/L	1	7/6/2022 10:26:25 AM	B89226
Xylenes, Total	ND	0.37	1.5		µg/L	1	7/6/2022 10:26:25 AM	B89226
Surr: 1,2-Dichloroethane-d4	109	0	70-130		%Rec	1	7/6/2022 10:26:25 AM	B89226
Surr: 4-Bromofluorobenzene	105	0	70-130		%Rec	1	7/6/2022 10:26:25 AM	B89226
Surr: Dibromofluoromethane	111	0	70-130		%Rec	1	7/6/2022 10:26:25 AM	B89226
Surr: Toluene-d8	99.3	0	70-130		%Rec	1	7/6/2022 10:26:25 AM	B89226

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-28-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022
Lab ID: 2206F41-008B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **BRM**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	7/6/2022 10:41:48 PM	68566

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-28-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022
Lab ID: 2206F41-008C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.32	0.016	0.064		mg/L	1	7/11/2022 3:56:16 PM	68495
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	7/11/2022 3:56:16 PM	68495
Surr: DNOP	89.2	0	42.2-138		%Rec	1	7/11/2022 3:56:16 PM	68495
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	7/8/2022 5:01:57 PM	68493
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	7/8/2022 5:01:57 PM	68493
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	7/8/2022 5:01:57 PM	68493
Di-n-octyl phthalate	ND	12	20		µg/L	1	7/8/2022 5:01:57 PM	68493
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	7/8/2022 5:01:57 PM	68493
Diethyl phthalate	ND	6.0	10		µg/L	1	7/8/2022 5:01:57 PM	68493
Dimethyl phthalate	ND	6.0	10		µg/L	1	7/8/2022 5:01:57 PM	68493
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	7/8/2022 5:01:57 PM	68493
2,4-Dinitrophenol	ND	16	20		µg/L	1	7/8/2022 5:01:57 PM	68493
2-Methylphenol	ND	5.0	10		µg/L	1	7/8/2022 5:01:57 PM	68493
3+4-Methylphenol	ND	5.1	10		µg/L	1	7/8/2022 5:01:57 PM	68493
Phenol	ND	18	20		µg/L	1	7/8/2022 5:01:57 PM	68493
Pyridine	ND	14	40		µg/L	1	7/8/2022 5:01:57 PM	68493
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	7/8/2022 5:01:57 PM	68493
Surr: 2-Fluorophenol	38.2	0	29.4-87.7		%Rec	1	7/8/2022 5:01:57 PM	68493
Surr: Phenol-d5	37.6	0	28.5-64.7		%Rec	1	7/8/2022 5:01:57 PM	68493
Surr: 2,4,6-Tribromophenol	15.6	0	18.6-129	S	%Rec	1	7/8/2022 5:01:57 PM	68493
Surr: Nitrobenzene-d5	67.5	0	36.9-103		%Rec	1	7/8/2022 5:01:57 PM	68493
Surr: 2-Fluorobiphenyl	62.0	0	38.1-99.9		%Rec	1	7/8/2022 5:01:57 PM	68493
Surr: 4-Terphenyl-d14	75.9	0	48-155		%Rec	1	7/8/2022 5:01:57 PM	68493
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	4.0	0.11	1.0		µg/L	1	7/7/2022 3:12:00 AM	68493
Naphthalene	ND	0.20	0.30		µg/L	1	7/7/2022 3:12:00 AM	68493
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	7/7/2022 3:12:00 AM	68493
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	7/7/2022 3:12:00 AM	68493
Acenaphthene	ND	0.14	0.30		µg/L	1	7/7/2022 3:12:00 AM	68493
Fluorene	ND	0.095	0.30		µg/L	1	7/7/2022 3:12:00 AM	68493
Phenanthrene	ND	0.16	0.30		µg/L	1	7/7/2022 3:12:00 AM	68493
Anthracene	ND	0.14	0.30		µg/L	1	7/7/2022 3:12:00 AM	68493
Fluoranthene	ND	0.14	0.30		µg/L	1	7/7/2022 3:12:00 AM	68493
Pyrene	ND	0.32	1.0		µg/L	1	7/7/2022 3:12:00 AM	68493
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	7/7/2022 3:12:00 AM	68493
Chrysene	ND	0.25	0.30		µg/L	1	7/7/2022 3:12:00 AM	68493
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	7/7/2022 3:12:00 AM	68493
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	7/7/2022 3:12:00 AM	68493

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-28-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022
Lab ID: 2206F41-008C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	63.8	0	31.6-100		%Rec	1	7/7/2022 3:12:00 AM	68493
Surr: 2-Fluorobiphenyl	56.9	0	26.7-90.1		%Rec	1	7/7/2022 3:12:00 AM	68493
Surr: 4-Terphenyl-d14	71.2	0	72.3-147	S	%Rec	1	7/7/2022 3:12:00 AM	68493

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-28-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022
Lab ID: 2206F41-008D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.25	0.0016	0.0030		mg/L	1	7/11/2022 11:25:19 AM	68545
Beryllium	ND	0.00088	0.0020		mg/L	1	7/11/2022 11:25:19 AM	68545
Cadmium	ND	0.0018	0.0020		mg/L	1	7/11/2022 11:25:19 AM	68545
Chromium	ND	0.0020	0.0060		mg/L	1	7/11/2022 11:25:19 AM	68545
Cobalt	0.0086	0.0035	0.0060		mg/L	1	7/11/2022 11:25:19 AM	68545
Nickel	0.024	0.0053	0.010		mg/L	1	7/11/2022 11:25:19 AM	68545
Silver	ND	0.0018	0.0050		mg/L	1	7/11/2022 11:25:19 AM	68545
Vanadium	0.0072	0.0035	0.050	J	mg/L	1	7/11/2022 11:25:19 AM	68545
Zinc	0.0082	0.0039	0.010	J	mg/L	1	7/11/2022 11:25:19 AM	68545
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/7/2022 1:20:09 PM	68545
Arsenic	0.00095	0.00013	0.0010	J	mg/L	1	7/7/2022 1:20:09 PM	68545
Lead	0.00040	0.000061	0.00050	J	mg/L	1	7/7/2022 1:20:09 PM	68545
Selenium	0.00041	0.00037	0.0010	J	mg/L	1	7/7/2022 1:20:09 PM	68545
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/8/2022 12:43:47 PM	68621

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-28-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022
Lab ID: 2206F41-008E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.15	0.0011	0.0020		mg/L	1	6/30/2022 12:04:17 PM	B89154
Beryllium	ND	0.00088	0.0020		mg/L	1	6/30/2022 12:04:17 PM	B89154
Cadmium	ND	0.00098	0.0020		mg/L	1	6/30/2022 12:04:17 PM	B89154
Chromium	ND	0.0020	0.0060		mg/L	1	6/30/2022 12:04:17 PM	B89154
Cobalt	ND	0.0024	0.0060		mg/L	1	6/30/2022 12:04:17 PM	B89154
Nickel	0.015	0.0033	0.010		mg/L	1	6/30/2022 12:04:17 PM	B89154
Silver	0.0066	0.0013	0.0050		mg/L	1	6/30/2022 12:04:17 PM	B89154
Vanadium	0.0064	0.0017	0.050	J	mg/L	1	6/30/2022 12:04:17 PM	B89154
Zinc	0.0086	0.0032	0.010	J	mg/L	1	6/30/2022 12:04:17 PM	B89154
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/1/2022 4:36:47 PM	A89215
Arsenic	0.00080	0.00012	0.0010	J	mg/L	1	7/1/2022 4:36:47 PM	A89215
Lead	0.000061	0.000057	0.00050	J	mg/L	1	7/1/2022 4:36:47 PM	A89215
Selenium	0.00090	0.00034	0.0010	J	mg/L	1	7/1/2022 4:36:47 PM	A89215
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/8/2022 12:45:56 PM	68621

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB-6-28-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/28/2022 10:20:00 AM
Lab ID: 2206F41-009A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	0.23	1.0		µg/L	1	7/6/2022 6:04:29 PM	R89293
Toluene	ND	0.20	1.0		µg/L	1	7/6/2022 6:04:29 PM	R89293
Ethylbenzene	ND	0.21	1.0		µg/L	1	7/6/2022 6:04:29 PM	R89293
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	7/6/2022 6:04:29 PM	R89293
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	7/6/2022 6:04:29 PM	R89293
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	7/6/2022 6:04:29 PM	R89293
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	7/6/2022 6:04:29 PM	R89293
Acetone	6.4	2.5	10	J	µg/L	1	7/6/2022 6:04:29 PM	R89293
Bromomethane	ND	0.85	3.0		µg/L	1	7/6/2022 6:04:29 PM	R89293
2-Butanone	ND	2.0	10		µg/L	1	7/6/2022 6:04:29 PM	R89293
Carbon disulfide	ND	0.59	10		µg/L	1	7/6/2022 6:04:29 PM	R89293
Chlorobenzene	ND	0.16	1.0		µg/L	1	7/6/2022 6:04:29 PM	R89293
Chloroform	ND	0.13	1.0		µg/L	1	7/6/2022 6:04:29 PM	R89293
Chloromethane	0.50	0.41	3.0	J	µg/L	1	7/6/2022 6:04:29 PM	R89293
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	7/6/2022 6:04:29 PM	R89293
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	7/6/2022 6:04:29 PM	R89293
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	7/6/2022 6:04:29 PM	R89293
Isopropylbenzene	ND	0.18	1.0		µg/L	1	7/6/2022 6:04:29 PM	R89293
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	7/6/2022 6:04:29 PM	R89293
Methylene Chloride	ND	0.50	3.0		µg/L	1	7/6/2022 6:04:29 PM	R89293
n-Butylbenzene	ND	0.25	3.0		µg/L	1	7/6/2022 6:04:29 PM	R89293
n-Propylbenzene	ND	0.18	1.0		µg/L	1	7/6/2022 6:04:29 PM	R89293
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	7/6/2022 6:04:29 PM	R89293
Styrene	ND	0.14	1.0		µg/L	1	7/6/2022 6:04:29 PM	R89293
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	7/6/2022 6:04:29 PM	R89293
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	7/6/2022 6:04:29 PM	R89293
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	7/6/2022 6:04:29 PM	R89293
Vinyl chloride	ND	0.32	1.0		µg/L	1	7/6/2022 6:04:29 PM	R89293
Xylenes, Total	ND	0.37	1.5		µg/L	1	7/6/2022 6:04:29 PM	R89293
Surr: 1,2-Dichloroethane-d4	112	0	70-130		%Rec	1	7/6/2022 6:04:29 PM	R89293
Surr: 4-Bromofluorobenzene	106	0	70-130		%Rec	1	7/6/2022 6:04:29 PM	R89293
Surr: Dibromofluoromethane	117	0	70-130		%Rec	1	7/6/2022 6:04:29 PM	R89293
Surr: Toluene-d8	99.7	0	70-130		%Rec	1	7/6/2022 6:04:29 PM	R89293

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 2nd Quarter
Collection Date:
Lab ID: 2206F41-010A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	0.23	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
Toluene	ND	0.20	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
Ethylbenzene	ND	0.21	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
Naphthalene	ND	0.50	2.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
Acetone	3.2	2.5	10	J	µg/L	1	7/6/2022 6:33:08 PM	R89293
Bromobenzene	ND	0.28	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
Bromodichloromethane	ND	0.20	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
Bromoform	ND	0.31	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
Bromomethane	ND	0.85	3.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
2-Butanone	ND	2.0	10		µg/L	1	7/6/2022 6:33:08 PM	R89293
Carbon disulfide	ND	0.59	10		µg/L	1	7/6/2022 6:33:08 PM	R89293
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
Chlorobenzene	ND	0.16	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
Chloroethane	ND	0.38	2.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
Chloroform	ND	0.13	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
Chloromethane	ND	0.41	3.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
4-Chlorotoluene	ND	0.34	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
Dibromochloromethane	ND	0.28	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
Dibromomethane	ND	0.31	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
Dichlorodifluoromethane	ND	0.40	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
1,2-Dichloropropane	ND	0.20	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 2nd Quarter
Collection Date:
Lab ID: 2206F41-010A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Hexachlorobutadiene	ND	0.56	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
2-Hexanone	ND	1.8	10		µg/L	1	7/6/2022 6:33:08 PM	R89293
Isopropylbenzene	ND	0.18	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
4-Methyl-2-pentanone	ND	0.88	10		µg/L	1	7/6/2022 6:33:08 PM	R89293
Methylene Chloride	ND	0.50	3.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
n-Butylbenzene	ND	0.25	3.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
n-Propylbenzene	ND	0.18	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
Styrene	ND	0.14	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
trans-1,2-DCE	ND	0.19	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
1,2,3-Trichlorobenzene	ND	0.25	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
1,1,2-Trichloroethane	ND	0.20	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
Trichlorofluoromethane	ND	0.16	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
Vinyl chloride	ND	0.32	1.0		µg/L	1	7/6/2022 6:33:08 PM	R89293
Xylenes, Total	ND	0.37	1.5		µg/L	1	7/6/2022 6:33:08 PM	R89293
Surr: 1,2-Dichloroethane-d4	111	0	70-130		%Rec	1	7/6/2022 6:33:08 PM	R89293
Surr: 4-Bromofluorobenzene	105	0	70-130		%Rec	1	7/6/2022 6:33:08 PM	R89293
Surr: Dibromofluoromethane	116	0	70-130		%Rec	1	7/6/2022 6:33:08 PM	R89293
Surr: Toluene-d8	97.4	0	70-130		%Rec	1	7/6/2022 6:33:08 PM	R89293

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 2nd Quarter
Collection Date:
Lab ID: 2206F41-010B
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **BRM**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	7/6/2022 10:57:11 PM	68566

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206F41**
Date Reported: **7/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 2nd Quarter
Collection Date:
Lab ID: 2206F41-010C
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	7/2/2022 11:24:00 PM	R89210
Surr: BFB	96.6	0	70-130		%Rec	1	7/2/2022 11:24:00 PM	R89210

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

ANALYTICAL REPORT

July 12, 2022

Hall Environmental Analysis Laboratory

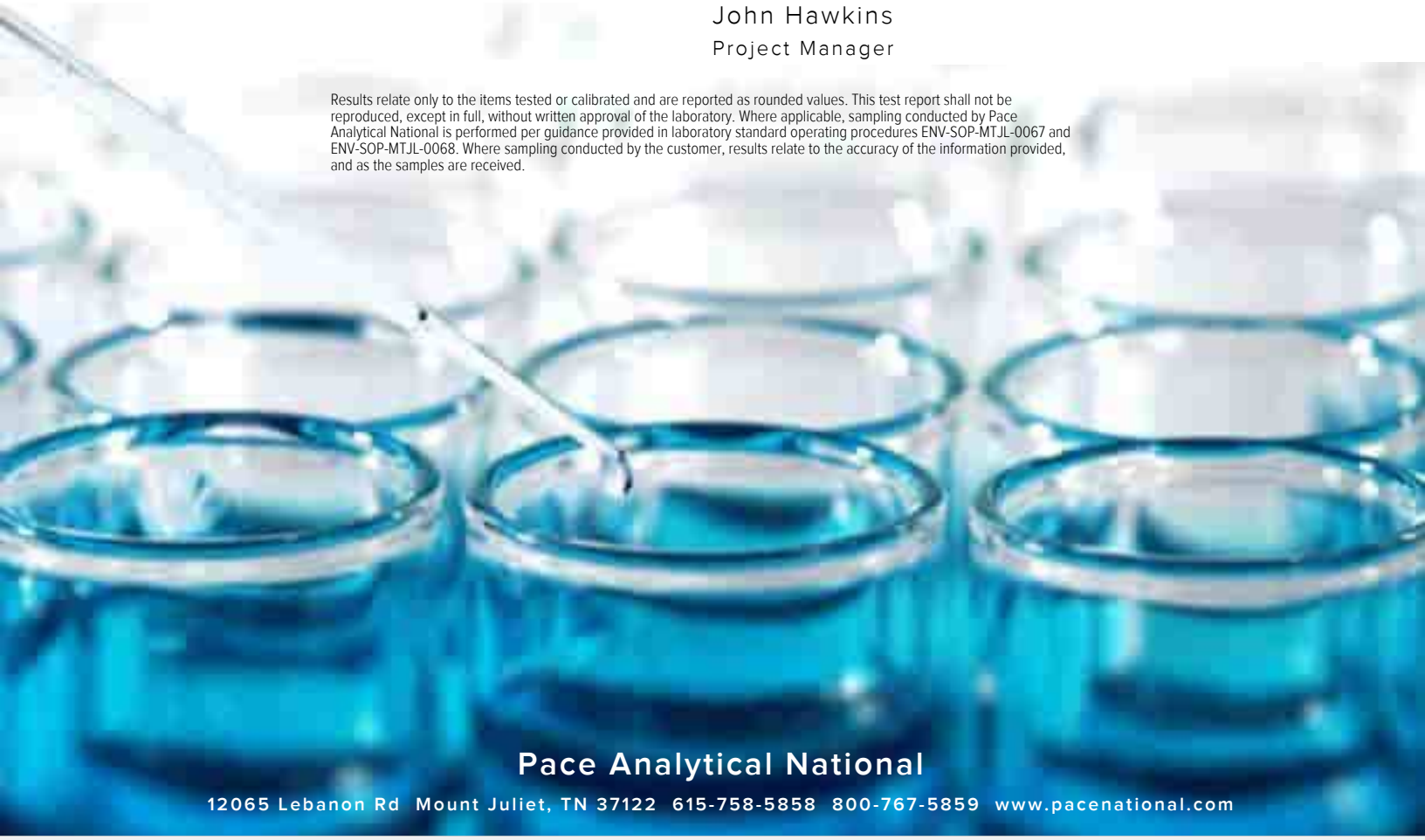
Sample Delivery Group:	L1511088
Samples Received:	07/02/2022
Project Number:	
Description:	

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By:

John Hawkins
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 4

Sr: Sample Results 5

2206F41-001F EB-6-28-22 L1511088-01 5

2206F41-002F MKTF-30 L1511088-02 6

2206F41-003F MKTF-29 L1511088-03 7

2206F41-004F OPIS-1 L1511088-04 8

2206F41-005F STP-1-NM L1511088-05 9

2206F41-006F OW-12A L1511088-06 10

2206F41-007F OW-70 L1511088-07 11

2206F41-008F DUP-6-28-22 L1511088-08 12

Qc: Quality Control Summary 13

Wet Chemistry by Method 4500CN E-2016 13

Gl: Glossary of Terms 15

Al: Accreditations & Locations 16

Sc: Sample Chain of Custody 17

2206F41-001F EB-6-28-22 L1511088-01 GW

Collected by | Collected date/time 06/28/22 08:10 | Received date/time 07/02/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1891839	1	07/08/22 10:09	07/11/22 23:10	CAT	Mt. Juliet, TN

2206F41-002F MKTF-30 L1511088-02 GW

Collected by | Collected date/time 06/28/22 08:15 | Received date/time 07/02/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1891839	1	07/08/22 10:09	07/11/22 23:11	CAT	Mt. Juliet, TN

2206F41-003F MKTF-29 L1511088-03 GW

Collected by | Collected date/time 06/28/22 08:40 | Received date/time 07/02/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1891839	1	07/08/22 10:09	07/11/22 23:12	CAT	Mt. Juliet, TN

2206F41-004F OPIS-1 L1511088-04 GW

Collected by | Collected date/time 06/28/22 09:10 | Received date/time 07/02/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1891839	1	07/08/22 10:09	07/11/22 23:13	CAT	Mt. Juliet, TN

2206F41-005F STP-1-NM L1511088-05 GW

Collected by | Collected date/time 06/28/22 09:35 | Received date/time 07/02/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1891839	1	07/08/22 10:09	07/11/22 23:14	CAT	Mt. Juliet, TN

2206F41-006F OW-12A L1511088-06 GW

Collected by | Collected date/time 06/28/22 10:00 | Received date/time 07/02/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1891839	1	07/08/22 10:09	07/11/22 23:15	CAT	Mt. Juliet, TN

2206F41-007F OW-70 L1511088-07 GW

Collected by | Collected date/time 06/28/22 10:20 | Received date/time 07/02/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1891839	1	07/08/22 10:09	07/11/22 23:16	CAT	Mt. Juliet, TN

2206F41-008F DUP-6-28-22 L1511088-08 GW

Collected by | Collected date/time 06/28/22 00:00 | Received date/time 07/02/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1889907	1	07/06/22 07:17	07/10/22 20:58	CAT	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	U		1.80	5.00	1	07/11/2022 23:10	WG1891839

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	2.91	J	1.80	5.00	1	07/11/2022 23:11	WG1891839

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	6.31		1.80	5.00	1	07/11/2022 23:12	WG1891839

Received by OCD: 4/21/2023 9:21:57 AM

Collected date/time: 06/28/22 09:10
L1511088

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	64.0		1.80	5.00	1	07/11/2022 23:13	WG1891839

Released to Imaging: 4/21/2023 9:40:26 AM

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	55.6		1.80	5.00	1	07/11/2022 23:14	WG1891839

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	2.42	J	1.80	5.00	1	07/11/2022 23:15	WG1891839

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	4.04	J	1.80	5.00	1	07/11/2022 23:16	WG1891839

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	6.92		1.80	5.00	1	07/10/2022 20:58	WG1889907

Method Blank (MB)

(MB) R3812980-1 07/10/22 20:28

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Cyanide	U		1.80	5.00

L1509933-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1509933-02 07/10/22 20:41 • (DUP) R3812980-5 07/10/22 20:42

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	U	U	1	0.000		20

L1510125-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1510125-02 07/10/22 20:44 • (DUP) R3812980-6 07/10/22 20:45

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3812980-2 07/10/22 20:30

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	100	96.8	96.8	87.1-120	

Method Blank (MB)

(MB) R3813413-1 07/11/22 22:44

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Cyanide	U		1.80	5.00

L1509878-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1509878-01 07/11/22 22:51 • (DUP) R3813413-3 07/11/22 22:52

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Cyanide	U	U	1	0.000		20

L1510506-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1510506-02 07/11/22 23:03 • (DUP) R3813413-6 07/11/22 23:04

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Cyanide	2.55	U	1	200	P1	20

Laboratory Control Sample (LCS)

(LCS) R3813413-2 07/11/22 22:45

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Cyanide	100	93.8	93.8	87.1-120	

L1510501-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1510501-01 07/11/22 23:00 • (MS) R3813413-4 07/11/22 23:01 • (MSD) R3813413-5 07/11/22 23:02

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Cyanide	100	U	66.7	91.4	66.7	91.4	1	90.0-110	J6	J3	31.2	20

L1511088-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1511088-07 07/11/22 23:16 • (MS) R3813413-7 07/11/22 23:17 • (MSD) R3813413-8 07/11/22 23:20

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Cyanide	100	4.04	101	101	97.0	97.0	1	90.0-110			0.000	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Received by OCD: 4/21/2023 9:21:57 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

1=[1XL(HDPE)(NaOH)]

F175

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

L1511088

SUB CONTRATOR: Pace TN	COMPANY:	PHONE: (800) 767-5859	FAX: (615) 758-5859
ADDRESS: 12065 Lebanon Rd		ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: Mt. Juliet, TN 37122			

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS	
1	2206F41-001F	EB-6-28-22	500AMBHDP F-NAOH	Groundwater	6/28/2022 8:10:00 AM	1	Total Cyanide J and MDL	-01
2	2206F41-002F	MKTF-30	500AMBHDP F-NAOH	Groundwater	6/28/2022 8:15:00 AM	1	Total Cyanide J and MDL	-02
3	2206F41-003F	MKTF-29	500AMBHDP F-NAOH	Groundwater	6/28/2022 8:40:00 AM	1	Total Cyanide J and MDL	-03
4	2206F41-004F	OPIS-1	500AMBHDP F-NAOH	Groundwater	6/28/2022 9:10:00 AM	1	Total Cyanide J and MDL	-04
5	2206F41-005F	STP-1-NM	500AMBHDP F-NAOH	Groundwater	6/28/2022 9:35:00 AM	1	Total Cyanide J and MDL	-05
6	2206F41-006F	OW-12A	500AMBHDP F-NAOH	Groundwater	6/28/2022 10:00:00 AM	1	Total Cyanide J and MDL	-06
7	2206F41-007F	OW-70	500AMBHDP F-NAOH	Groundwater	6/28/2022 10:20:00 AM	1	Total Cyanide J and MDL	-07
8	2206F41-008F	DUP-6-28-22	500AMBHDP F-NAOH	Groundwater	6/28/2022	1	Total Cyanide J and MDL	-08

Sample Receipt Checklist

COC Seal Present/Intact:	✓Y N	If Applicable	
COC Signed/Accurate:	✓Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	✓Y N	Pres.Correct/Check:	Y N
Correct bottles used:	✓Y N		
Sufficient volume sent:	✓Y N		
RAD Screen <0.5 mR/hr:	✓Y N		

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By: cmc	Date: 6/29/2022	Time: 9:09 AM	Received By:	Date: 7/1/22	Time: 9:15
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ✓ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY
Temp of samples ____ °C Attempt to Cool ? ____
Comments: ____

Released to Imaging: 4/21/2023 9:40:26 AM

Temp: DNAT 4.4 to 4.4

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206F41**
18-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB-68545** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **68545** RunNo: **89314**
Prep Date: **7/5/2022** Analysis Date: **7/7/2022** SeqNo: **3176277** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LCSLL-68545** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **68545** RunNo: **89314**
Prep Date: **7/5/2022** Analysis Date: **7/7/2022** SeqNo: **3176278** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0022	0.0030	0.002000	0	108	50	150			J
Beryllium	0.0018	0.0020	0.002000	0	90.2	50	150			J
Cadmium	0.0021	0.0020	0.002000	0	104	50	150			
Chromium	0.0058	0.0060	0.006000	0	97.2	50	150			J
Cobalt	0.0055	0.0060	0.006000	0	91.2	50	150			J
Nickel	0.0066	0.010	0.005000	0	132	50	150			J
Silver	0.0049	0.0050	0.005000	0	98.7	50	150			J
Vanadium	0.0094	0.050	0.01000	0	93.9	50	150			J
Zinc	0.012	0.010	0.01000	0	119	50	150			

Sample ID: **LCS-68545** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **68545** RunNo: **89314**
Prep Date: **7/5/2022** Analysis Date: **7/7/2022** SeqNo: **3176279** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0030	0.5000	0	95.4	85	115			
Beryllium	0.50	0.0020	0.5000	0	100	85	115			
Cadmium	0.47	0.0020	0.5000	0	94.7	85	115			
Chromium	0.49	0.0060	0.5000	0	97.6	85	115			
Cobalt	0.47	0.0060	0.5000	0	93.9	85	115			
Nickel	0.46	0.010	0.5000	0	92.5	85	115			
Silver	0.096	0.0050	0.1000	0	96.4	85	115			
Vanadium	0.49	0.050	0.5000	0	98.3	85	115			
Zinc	0.45	0.010	0.5000	0	90.8	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206F41**

18-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB-B** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**

Client ID: **PBW** Batch ID: **B89154** RunNo: **89154**

Prep Date: Analysis Date: **6/30/2022** SeqNo: **3168576** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS-B** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**

Client ID: **BatchQC** Batch ID: **B89154** RunNo: **89154**

Prep Date: Analysis Date: **6/30/2022** SeqNo: **3168577** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0021	0.0020	0.002000	0	104	50	150			
Beryllium	0.0019	0.0020	0.002000	0	94.9	50	150			J
Cadmium	0.0024	0.0020	0.002000	0	121	50	150			
Chromium	0.0060	0.0060	0.006000	0	99.8	50	150			J
Cobalt	0.0061	0.0060	0.006000	0	102	50	150			
Nickel	0.0052	0.010	0.005000	0	104	50	150			J
Silver	0.0049	0.0050	0.005000	0	98.1	50	150			J
Vanadium	0.0093	0.050	0.01000	0	92.8	50	150			J
Zinc	0.0093	0.010	0.01000	0	92.8	50	150			J

Sample ID: **LCS-B** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**

Client ID: **LCSW** Batch ID: **B89154** RunNo: **89154**

Prep Date: Analysis Date: **6/30/2022** SeqNo: **3168578** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	96.3	85	115			
Beryllium	0.50	0.0020	0.5000	0	99.3	85	115			
Cadmium	0.49	0.0020	0.5000	0	97.2	85	115			
Chromium	0.48	0.0060	0.5000	0	96.3	85	115			
Cobalt	0.47	0.0060	0.5000	0	95.0	85	115			
Nickel	0.48	0.010	0.5000	0	95.7	85	115			
Silver	0.099	0.0050	0.1000	0	98.8	85	115			
Vanadium	0.49	0.050	0.5000	0	98.6	85	115			
Zinc	0.47	0.010	0.5000	0	94.3	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206F41**

18-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB-68545**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **68545**	RunNo: **89286**
Prep Date: **7/5/2022**	Analysis Date: **7/7/2022**	SeqNo: **3175614** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **MSLCSLL-68545**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **68545**	RunNo: **89286**
Prep Date: **7/5/2022**	Analysis Date: **7/7/2022**	SeqNo: **3175615** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0011	0.0010	0.001000	0	106	50	150			
Arsenic	0.0010	0.0010	0.001000	0	103	50	150			
Lead	0.00050	0.00050	0.0005000	0	99.1	50	150			J
Selenium	0.00096	0.0010	0.001000	0	96.5	50	150			J

Sample ID: **MSLCS-68545**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **68545**	RunNo: **89286**
Prep Date: **7/5/2022**	Analysis Date: **7/7/2022**	SeqNo: **3175616** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	94.5	85	115			
Arsenic	0.025	0.0010	0.02500	0	101	85	115			
Lead	0.012	0.00050	0.01250	0	97.6	85	115			
Selenium	0.022	0.0010	0.02500	0	89.4	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206F41**
18-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **A89215** RunNo: **89215**
Prep Date: Analysis Date: **7/1/2022** SeqNo: **3171349** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL** SampType: **LCSLL** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **A89215** RunNo: **89215**
Prep Date: Analysis Date: **7/1/2022** SeqNo: **3171350** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0010	0.0010	0.001000	0	101	50	150			
Arsenic	0.00099	0.0010	0.001000	0	98.9	50	150			J
Lead	0.00054	0.00050	0.0005000	0	107	50	150			
Selenium	0.0013	0.0010	0.001000	0	127	50	150			

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **A89215** RunNo: **89215**
Prep Date: Analysis Date: **7/1/2022** SeqNo: **3171351** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.7	85	115			
Arsenic	0.025	0.0010	0.02500	0	100	85	115			
Lead	0.012	0.00050	0.01250	0	99.4	85	115			
Selenium	0.026	0.0010	0.02500	0	103	85	115			

Sample ID: **2206F41-001EMSLL** SampType: **MS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **EB-6-28-22** Batch ID: **A89215** RunNo: **89215**
Prep Date: Analysis Date: **7/1/2022** SeqNo: **3171362** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	98.7	70	130			
Arsenic	0.025	0.0010	0.02500	0	99.4	70	130			
Lead	0.012	0.00050	0.01250	0	99.2	70	130			
Selenium	0.026	0.0010	0.02500	0	105	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206F41**
18-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB-68621** SampType: **MBLK** TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW** Batch ID: **68621** RunNo: **89336**
Prep Date: **7/7/2022** Analysis Date: **7/8/2022** SeqNo: **3177687** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-68621** SampType: **LCSLL** TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC** Batch ID: **68621** RunNo: **89336**
Prep Date: **7/7/2022** Analysis Date: **7/8/2022** SeqNo: **3177688** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00011	0.00020	0.0001500	0	76.1	50	150			J

Sample ID: **LCS-68621** SampType: **LCS** TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW** Batch ID: **68621** RunNo: **89336**
Prep Date: **7/7/2022** Analysis Date: **7/8/2022** SeqNo: **3177689** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0048	0.00020	0.005000	0	95.9	85	115			

Sample ID: **2206F41-006DMS** SampType: **MS** TestCode: **EPA Method 245.1: Mercury**
Client ID: **OW-12A** Batch ID: **68621** RunNo: **89336**
Prep Date: **7/7/2022** Analysis Date: **7/8/2022** SeqNo: **3177725** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0045	0.00020	0.005000	0	90.8	75	125			

Sample ID: **2206F41-006DMSD** SampType: **MSD** TestCode: **EPA Method 245.1: Mercury**
Client ID: **OW-12A** Batch ID: **68621** RunNo: **89336**
Prep Date: **7/7/2022** Analysis Date: **7/8/2022** SeqNo: **3177726** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0047	0.00020	0.005000	0	93.1	75	125	2.54	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206F41**
18-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **LCSD-68566**	SampType: **LCSD**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSS02**	Batch ID: **68566**	RunNo: **89272**
Prep Date: **7/6/2022**	Analysis Date: **7/6/2022**	SeqNo: **3174557** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.076	0.010	0.1000	0	76.3	70	130	10.9	20	

Sample ID: **MB-68566**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **68566**	RunNo: **89289**
Prep Date: **7/6/2022**	Analysis Date: **7/7/2022**	SeqNo: **3175380** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-68566**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW**	Batch ID: **68566**	RunNo: **89289**
Prep Date: **7/6/2022**	Analysis Date: **7/7/2022**	SeqNo: **3175381** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.10	0.010	0.1000	0	99.7	70	130			

Sample ID: **MB-68566**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **68566**	RunNo: **89289**
Prep Date: **7/6/2022**	Analysis Date: **7/7/2022**	SeqNo: **3175387** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206F41**

18-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB-68495**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **PBW**	Batch ID: **68495**	RunNo: **89367**							
Prep Date: **7/1/2022**	Analysis Date: **7/11/2022**	SeqNo: **3179031**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.023	0.064								J
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.038		0.03750		101	42.2	138			

Sample ID: **MB-68464**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **PBW**	Batch ID: **68464**	RunNo: **89260**							
Prep Date: **6/30/2022**	Analysis Date: **7/9/2022**	SeqNo: **3179323**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.037	0.064								J
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.038		0.03750		101	42.2	138			

Sample ID: **LCS-68464**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSW**	Batch ID: **68464**	RunNo: **89260**							
Prep Date: **6/30/2022**	Analysis Date: **7/9/2022**	SeqNo: **3179324**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.16	0.064	0.1875	0	83.6	31.7	75.4			S
Surr: DNOP	0.021		0.01875		111	42.2	138			

Sample ID: **LCSD-68464**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSS02**	Batch ID: **68464**	RunNo: **89260**							
Prep Date: **6/30/2022**	Analysis Date: **7/9/2022**	SeqNo: **3179325**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.13	0.064	0.1875	0	69.2	31.7	75.4	18.9	20	
Surr: DNOP	0.021		0.01875		111	42.2	138	0	0	

Sample ID: **LCS-68495**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSW**	Batch ID: **68495**	RunNo: **89367**							
Prep Date: **7/1/2022**	Analysis Date: **7/11/2022**	SeqNo: **3180276**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.14	0.064	0.1875	0	75.5	31.7	75.4			S
Surr: DNOP	0.020		0.01875		107	42.2	138			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206F41**
18-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **LCSD-68495**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02**	Batch ID: **68495**	RunNo: **89367**
Prep Date: **7/1/2022**	Analysis Date: **7/11/2022**	SeqNo: **3180277** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.15	0.064	0.1875	0	78.6	31.7	75.4	3.96	20	S
Surr: DNOP	0.019		0.01875		103	42.2	138	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206F41**

18-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **R89210**	RunNo: **89210**
Prep Date:	Analysis Date: **7/2/2022**	SeqNo: **3171060** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.50	0.050	0.5000	0	100	80	120			
Surr: BFB	41		20.00		206	70	130			S

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **R89210**	RunNo: **89210**
Prep Date:	Analysis Date: **7/2/2022**	SeqNo: **3171061** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	20		20.00		98.1	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206F41**
18-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **B89226**	RunNo: **89226**
Prep Date:	Analysis Date: **7/5/2022**	SeqNo: **3172953** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	111	70	130			
Toluene	21	1.0	20.00	0	105	70	130			
Chlorobenzene	22	1.0	20.00	0	108	70	130			
1,1-Dichloroethene	22	1.0	20.00	0	109	70	130			
Trichloroethene (TCE)	21	1.0	20.00	0	106	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		105	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130			
Surr: Dibromofluoromethane	12		10.00		116	70	130			
Surr: Toluene-d8	10		10.00		99.5	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **B89226**	RunNo: **89226**
Prep Date:	Analysis Date: **7/6/2022**	SeqNo: **3173017** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206F41**
18-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**							
Client ID: **PBW**	Batch ID: **B89226**	RunNo: **89226**							
Prep Date:	Analysis Date: **7/6/2022**	SeqNo: **3173017**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	12		10.00		115	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		107	70	130			
Surr: Dibromofluoromethane	12		10.00		118	70	130			
Surr: Toluene-d8	10		10.00		103	70	130			

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**							
Client ID: **LCSW**	Batch ID: **R89293**	RunNo: **89293**							
Prep Date:	Analysis Date: **7/6/2022**	SeqNo: **3175685**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	109	70	130			
Toluene	21	1.0	20.00	0	105	70	130			
Chlorobenzene	21	1.0	20.00	0	107	70	130			
1,1-Dichloroethene	21	1.0	20.00	0	106	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	102	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		100	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		105	70	130			
Surr: Dibromofluoromethane	11		10.00		113	70	130			
Surr: Toluene-d8	9.7		10.00		97.5	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**							
Client ID: **PBW**	Batch ID: **R89293**	RunNo: **89293**							
Prep Date:	Analysis Date: **7/6/2022**	SeqNo: **3175727**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206F41**
18-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R89293**	RunNo: **89293**
Prep Date:	Analysis Date: **7/6/2022**	SeqNo: **3175727** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206F41**
18-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R89293**	RunNo: **89293**
Prep Date:	Analysis Date: **7/6/2022**	SeqNo: **3175727** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		111	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		108	70	130			
Surr: Dibromofluoromethane	12		10.00		116	70	130			
Surr: Toluene-d8	9.9		10.00		98.6	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206F41**
18-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB-68493**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **68493**	RunNo: **89329**
Prep Date: **7/1/2022**	Analysis Date: **7/8/2022**	SeqNo: **3179690** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Anthracene	ND	10								
Benz(a)anthracene	ND	5.0								
Benzo(b)fluoranthene	ND	10								
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	10								
2,4-Dinitrophenol	ND	20								
Fluoranthene	ND	10								
Fluorene	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
1-Methylnaphthalene	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
Naphthalene	ND	5.0								
Phenanthrene	ND	10								
Phenol	ND	20								
Pyrene	ND	10								
Pyridine	ND	40								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	43		200.0		21.7	29.4	87.7			S
Surr: Phenol-d5	33		200.0		16.7	28.5	64.7			S
Surr: 2,4,6-Tribromophenol	64		200.0		32.2	18.6	129			
Surr: Nitrobenzene-d5	26		100.0		26.2	36.9	103			S
Surr: 2-Fluorobiphenyl	28		100.0		27.6	38.1	99.9			S
Surr: 4-Terphenyl-d14	52		100.0		51.7	48	155			

Sample ID: **LCS-68493**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **68493**	RunNo: **89329**
Prep Date: **7/1/2022**	Analysis Date: **7/8/2022**	SeqNo: **3179691** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206F41**

18-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **LCS-68493**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **68493**	RunNo: **89329**
Prep Date: **7/1/2022**	Analysis Date: **7/8/2022**	SeqNo: **3179691** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	63	10	100.0	0	63.3	21.3	104			
1,4-Dichlorobenzene	55	5.0	100.0	0	54.5	15	89.8			
Phenol	83	20	200.0	0	41.5	17	61.1			
Pyrene	75	10	100.0	0	75.1	61	123			
Surr: 2-Fluorophenol	100		200.0		51.7	29.4	87.7			
Surr: Phenol-d5	77		200.0		38.7	28.5	64.7			
Surr: 2,4,6-Tribromophenol	120		200.0		59.8	18.6	129			
Surr: Nitrobenzene-d5	67		100.0		67.4	36.9	103			
Surr: 2-Fluorobiphenyl	64		100.0		63.8	38.1	99.9			
Surr: 4-Terphenyl-d14	78		100.0		77.6	48	155			

Sample ID: **LCSD-68493**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **68493**	RunNo: **89329**
Prep Date: **7/1/2022**	Analysis Date: **7/8/2022**	SeqNo: **3179692** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	37	10	100.0	0	36.8	21.3	104	53.0	45.3	R
1,4-Dichlorobenzene	33	5.0	100.0	0	32.9	15	89.8	49.3	39.6	R
Phenol	47	20	200.0	0	23.4	17	61.1	55.7	42.5	R
Pyrene	55	10	100.0	0	55.4	61	123	30.2	11.8	RS
Surr: 2-Fluorophenol	60		200.0		29.9	29.4	87.7	0	0	
Surr: Phenol-d5	44		200.0		21.9	28.5	64.7	0	0	S
Surr: 2,4,6-Tribromophenol	88		200.0		44.2	18.6	129	0	0	
Surr: Nitrobenzene-d5	39		100.0		39.3	36.9	103	0	0	
Surr: 2-Fluorobiphenyl	36		100.0		36.5	38.1	99.9	0	0	S
Surr: 4-Terphenyl-d14	60		100.0		60.0	48	155	0	0	

Sample ID: **MB-68468**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **68468**	RunNo: **89411**
Prep Date: **6/30/2022**	Analysis Date: **7/13/2022**	SeqNo: **3183125** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Anthracene	ND	10								
Benz(a)anthracene	ND	5.0								
Benzo(b)fluoranthene	ND	10								
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206F41**
18-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB-68468** SampType: **MBLK** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW** Batch ID: **68468** RunNo: **89411**
Prep Date: **6/30/2022** Analysis Date: **7/13/2022** SeqNo: **3183125** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	10								
2,4-Dinitrophenol	ND	20								
Fluoranthene	ND	10								
Fluorene	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
1-Methylnaphthalene	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
Naphthalene	ND	5.0								
Phenanthrene	ND	10								
Phenol	ND	20								
Pyrene	ND	10								
Pyridine	ND	40								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	120		200.0		62.3	29.4	87.7			
Surr: Phenol-d5	95		200.0		47.3	28.5	64.7			
Surr: 2,4,6-Tribromophenol	110		200.0		56.0	18.6	129			
Surr: Nitrobenzene-d5	77		100.0		77.4	36.9	103			
Surr: 2-Fluorobiphenyl	69		100.0		68.6	38.1	99.9			
Surr: 4-Terphenyl-d14	96		100.0		96.4	48	155			

Sample ID: **LCS-68468** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW** Batch ID: **68468** RunNo: **89411**
Prep Date: **6/30/2022** Analysis Date: **7/13/2022** SeqNo: **3183126** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	76	10	100.0	0	75.6	21.3	104			
1,4-Dichlorobenzene	64	5.0	100.0	0	63.5	15	89.8			
Phenol	99	20	200.0	0	49.6	17	61.1			
Pyrene	97	10	100.0	0	96.7	61	123			
Surr: 2-Fluorophenol	130		200.0		62.7	29.4	87.7			
Surr: Phenol-d5	95		200.0		47.3	28.5	64.7			
Surr: 2,4,6-Tribromophenol	120		200.0		62.0	18.6	129			
Surr: Nitrobenzene-d5	82		100.0		81.8	36.9	103			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206F41**

18-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **LCS-68468**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **68468**	RunNo: **89411**
Prep Date: **6/30/2022**	Analysis Date: **7/13/2022**	SeqNo: **3183126** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorobiphenyl	72		100.0		72.5	38.1	99.9			
Surr: 4-Terphenyl-d14	100		100.0		102	48	155			

Sample ID: **LCSD-68468**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **68468**	RunNo: **89411**
Prep Date: **6/30/2022**	Analysis Date: **7/13/2022**	SeqNo: **3183127** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	41	10	100.0	0	41.3	21.3	104	58.7	45.3	R
1,4-Dichlorobenzene	36	5.0	100.0	0	36.0	15	89.8	55.4	39.6	R
Phenol	54	20	200.0	0	26.9	17	61.1	59.2	42.5	R
Pyrene	80	10	100.0	0	79.8	61	123	19.2	11.8	R
Surr: 2-Fluorophenol	69		200.0		34.3	29.4	87.7	0	0	
Surr: Phenol-d5	51		200.0		25.4	28.5	64.7	0	0	S
Surr: 2,4,6-Tribromophenol	110		200.0		54.5	18.6	129	0	0	
Surr: Nitrobenzene-d5	45		100.0		44.9	36.9	103	0	0	
Surr: 2-Fluorobiphenyl	42		100.0		41.8	38.1	99.9	0	0	
Surr: 4-Terphenyl-d14	77		100.0		77.4	48	155	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206F41**
18-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **mb-68493**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**							
Client ID: **PBW**	Batch ID: **68493**	RunNo: **89275**							
Prep Date: **7/1/2022**	Analysis Date: **7/6/2022**	SeqNo: **3174754**	Units: **µg/L**						

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.30								
1-Methylnaphthalene	ND	0.30								
2-Methylnaphthalene	ND	0.30								
Acenaphthene	ND	0.30								
Fluorene	ND	0.30								
Phenanthrene	ND	0.30								
Anthracene	ND	0.30								
Fluoranthene	ND	0.30								
Pyrene	ND	1.0								
Benz(a)anthracene	ND	0.30								
Chrysene	ND	0.30								
Benzo(b)fluoranthene	ND	0.30								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	33		100.0		33.4	31.6	100			
Surr: 2,4,6-Tribromophenol	73		200.0		36.7	22	101			
Surr: 2-Fluorobiphenyl	38		100.0		38.0	26.7	90.1			
Surr: 4-Terphenyl-d14	81		100.0		80.5	72.3	147			

Sample ID: **lcs-68493 lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**							
Client ID: **LCSW**	Batch ID: **68493**	RunNo: **89275**							
Prep Date: **7/1/2022**	Analysis Date: **7/7/2022**	SeqNo: **3174755**	Units: **µg/L**						

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.98	0.10	2.000	0	49.0	20.2	48.4			S
Naphthalene	1.1	0.30	2.000	0	53.0	21.3	79.9			
1-Methylnaphthalene	1.0	0.30	2.000	0	51.0	22.2	80.3			
2-Methylnaphthalene	0.94	0.30	2.000	0	47.0	20.6	80.1			
Acenaphthene	1.3	0.30	2.000	0	66.0	29.8	82.7			
Fluorene	1.5	0.30	2.000	0	75.0	33.3	86			
Phenanthrene	1.7	0.30	2.000	0	85.0	38.2	93.9			
Anthracene	1.7	0.30	2.000	0	86.0	41.1	95.6			
Fluoranthene	2.0	0.30	2.000	0	98.0	52.9	123			
Pyrene	1.7	1.0	2.000	0	87.0	51	113			
Benz(a)anthracene	2.0	0.30	2.000	0	102	51	147			
Chrysene	1.8	0.30	2.000	0	89.0	55.3	115			
Benzo(b)fluoranthene	1.9	0.30	2.000	0	96.0	44.4	136			
Indeno(1,2,3-cd)pyrene	2.1	0.30	2.000	0	104	31.4	165			
Surr: Nitrobenzene-d5	78		100.0		78.0	31.6	100			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206F41**

18-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **lcs-68493 lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **68493**	RunNo: **89275**
Prep Date: **7/1/2022**	Analysis Date: **7/7/2022**	SeqNo: **3174755** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	97		200.0		48.5	22	101			
Surr: 2-Fluorobiphenyl	72		100.0		71.9	26.7	90.1			
Surr: 4-Terphenyl-d14	83		100.0		83.1	72.3	147			

Sample ID: **lcsd-68493 lf**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02**	Batch ID: **68493**	RunNo: **89275**
Prep Date: **7/1/2022**	Analysis Date: **7/7/2022**	SeqNo: **3174756** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.42	0.10	2.000	0	21.0	20.2	48.4	86.5	30.1	R
Naphthalene	0.60	0.30	2.000	0	30.0	21.3	79.9	87.9	25.6	R
1-Methylnaphthalene	0.64	0.30	2.000	0	32.0	22.2	80.3	80.4	25	R
2-Methylnaphthalene	0.66	0.30	2.000	0	33.0	20.6	80.1	76.6	25	R
Acenaphthene	0.70	0.30	2.000	0	35.0	29.8	82.7	80.3	27.8	R
Fluorene	0.94	0.30	2.000	0	47.0	33.3	86	56.5	26.4	R
Phenanthrene	1.3	0.30	2.000	0	65.0	38.2	93.9	33.3	27.9	R
Anthracene	1.7	0.30	2.000	0	85.0	41.1	95.6	4.60	25.6	
Fluoranthene	2.2	0.30	2.000	0	108	52.9	123	8.70	22.8	
Pyrene	1.7	1.0	2.000	0	87.0	51	113	2.33	20	
Benz(a)anthracene	2.1	0.30	2.000	0	103	51	147	6.00	24.1	
Chrysene	1.2	0.30	2.000	0	62.0	55.3	115	34.7	20	R
Benzo(b)fluoranthene	1.5	0.30	2.000	0	77.0	44.4	136	13.3	24.5	
Indeno(1,2,3-cd)pyrene	2.1	0.30	2.000	0	107	31.4	165	17.3	21.1	
Surr: Nitrobenzene-d5	35		100.0		35.0	31.6	100	0	0	
Surr: 2,4,6-Tribromophenol	80		200.0		39.9	22	101	0	0	
Surr: 2-Fluorobiphenyl	34		100.0		33.9	26.7	90.1	0	0	
Surr: 4-Terphenyl-d14	57		100.0		56.5	72.3	147	0	0	S

Sample ID: **mb-68468**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **68468**	RunNo: **89400**
Prep Date: **6/30/2022**	Analysis Date: **7/7/2022**	SeqNo: **3180358** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.30								
1-Methylnaphthalene	ND	0.30								
2-Methylnaphthalene	ND	0.30								
Acenaphthene	ND	0.30								
Fluorene	ND	0.30								
Phenanthrene	ND	0.30								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206F41**
18-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **mb-68468** SampType: **MBLK** TestCode: **EPA Method 8270SIM**
Client ID: **PBW** Batch ID: **68468** RunNo: **89400**
Prep Date: **6/30/2022** Analysis Date: **7/7/2022** SeqNo: **3180358** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Anthracene	ND	0.30								
Fluoranthene	ND	0.30								
Pyrene	ND	1.0								
Benz(a)anthracene	ND	0.30								
Chrysene	ND	0.30								
Benzo(b)fluoranthene	ND	0.30								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	75		100.0		74.8	31.6	100			
Surr: 2,4,6-Tribromophenol	98		200.0		49.2	22	101			
Surr: 2-Fluorobiphenyl	69		100.0		69.3	26.7	90.1			
Surr: 4-Terphenyl-d14	96		100.0		96.1	72.3	147			

Sample ID: **LCS-68468 LF** SampType: **LCS** TestCode: **EPA Method 8270SIM**
Client ID: **LCSW** Batch ID: **68468** RunNo: **89400**
Prep Date: **6/30/2022** Analysis Date: **7/7/2022** SeqNo: **3180359** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.94	0.10	2.000	0	47.0	20.2	48.4			
Naphthalene	1.3	0.30	2.000	0	64.0	21.3	79.9			
1-Methylnaphthalene	1.3	0.30	2.000	0	64.0	22.2	80.3			
2-Methylnaphthalene	1.2	0.30	2.000	0	62.0	20.6	80.1			
Acenaphthene	1.5	0.30	2.000	0	73.0	29.8	82.7			
Fluorene	1.6	0.30	2.000	0	79.0	33.3	86			
Phenanthrene	1.7	0.30	2.000	0	86.0	38.2	93.9			
Anthracene	1.8	0.30	2.000	0	90.0	41.1	95.6			
Fluoranthene	2.0	0.30	2.000	0	101	52.9	123			
Pyrene	1.7	1.0	2.000	0	87.0	51	113			
Benz(a)anthracene	2.1	0.30	2.000	0	105	51	147			
Chrysene	1.8	0.30	2.000	0	89.0	55.3	115			
Benzo(b)fluoranthene	2.0	0.30	2.000	0	98.0	44.4	136			
Indeno(1,2,3-cd)pyrene	2.3	0.30	2.000	0	115	31.4	165			
Surr: Nitrobenzene-d5	76		100.0		75.7	31.6	100			
Surr: 2,4,6-Tribromophenol	100		200.0		50.2	22	101			
Surr: 2-Fluorobiphenyl	70		100.0		70.3	26.7	90.1			
Surr: 4-Terphenyl-d14	88		100.0		87.9	72.3	147			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206F41**
18-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **lcsd-68468 lf** SampType: **LCSD** TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02** Batch ID: **68468** RunNo: **89400**
Prep Date: **6/30/2022** Analysis Date: **7/7/2022** SeqNo: **3180360** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.94	0.10	2.000	0	47.0	20.2	48.4	0	30.1	
Naphthalene	1.3	0.30	2.000	0	65.0	21.3	79.9	1.55	25.6	
1-Methylnaphthalene	1.3	0.30	2.000	0	64.0	22.2	80.3	0	25	
2-Methylnaphthalene	1.3	0.30	2.000	0	63.0	20.6	80.1	1.60	25	
Acenaphthene	1.4	0.30	2.000	0	72.0	29.8	82.7	1.38	27.8	
Fluorene	1.5	0.30	2.000	0	77.0	33.3	86	2.56	26.4	
Phenanthrene	1.6	0.30	2.000	0	82.0	38.2	93.9	4.76	27.9	
Anthracene	1.7	0.30	2.000	0	86.0	41.1	95.6	4.55	25.6	
Fluoranthene	1.9	0.30	2.000	0	96.0	52.9	123	5.08	22.8	
Pyrene	1.6	1.0	2.000	0	82.0	51	113	5.92	20	
Benz(a)anthracene	1.9	0.30	2.000	0	95.0	51	147	10.0	24.1	
Chrysene	1.6	0.30	2.000	0	79.0	55.3	115	11.9	20	
Benzo(b)fluoranthene	1.8	0.30	2.000	0	88.0	44.4	136	10.8	24.5	
Indeno(1,2,3-cd)pyrene	2.0	0.30	2.000	0	99.0	31.4	165	15.0	21.1	
Surr: Nitrobenzene-d5	76		100.0		75.9	31.6	100	0	0	
Surr: 2,4,6-Tribromophenol	98		200.0		48.9	22	101	0	0	
Surr: 2-Fluorobiphenyl	70		100.0		70.4	26.7	90.1	0	0	
Surr: 4-Terphenyl-d14	78		100.0		77.9	72.3	147	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Marathon | Work Order Number: 2206F41 | RcptNo: 1

Received By: Cheyenne Cason 6/29/2022 7:35:00 AM

Completed By: Cheyenne Cason 6/29/2022 9:09:56 AM

Reviewed By: 6-29-22

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐ SGL 6/29/22
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐ SGL 6/29/22
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☑ No ☐ NA ☐
10. Were any sample containers received broken? Yes ☐ No ☑

    # of preserved bottles checked for pH: 6 (<2 or >12 unless noted) SGL 6/29/22
    Adjusted? Yes
    Checked by: SGL 6/29/22
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

    Person Notified: Date:
    By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
    Regarding:
    Client Instructions:

16. Additional remarks: added ~0.5mL HNO3 to sample 004D, checked for pH <2
17. Cooler Information 001B received in incorrect container SGL 6/29/22

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.1	Good	Not Present			
2	5.2	Good	Not Present			
3	2.1	Good	Not Present			
4	4.5	Good	Not Present			

Released to Imaging: 4/21/2023 9:40:26 AM
Received by OCD: 4/21/2023 9:21:57 AM

Chain of Custody Record

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Client: Marathon Gallup Refinery	X Standard Rush
Mailing Address: 92 Giant Crossing Road, Jamestown, NM,87347	Project Name: **2022 GW Sampling 2nd Quarter**
Phone #: 808-640-1823	Project #: **697-080-001**
email or Fax#:	Project Manager: Lesli Alexander/Mackensie Swift
QA/QC Package: X Standard ☐ Level 4 (Full Validation)	Sampler:
Accreditation: ☐ Az Compliance ☐ NELAC ☐ Other	On Ice: ☒ Yes ☐ No
X EDD (Type)	# of Coolers: 4
	Cooler Temp(including CF): see Remarks

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2206F41	See Analyte List	8260B: VOC	8270C: SVOC	8270C SIM: PAH, 1,4 Dioxane	8015: TPH GRO/DRO/MRO	E200.7: Metals	E200.7: Dissolved Metals	E245.1 Mercury	E504.1: EDB	E335.4: Cyanide Subbed		537.1: PFAS	SM 5201B: BOD	410.4: COD	SM9223B E. Coli
6/28	8:10		EB-6-28-22	14		001	X	X	X	X	X	X	X	X	X	X					
6/28	8:15		MKTF-36	14		002	X	X	X	X	X	X	X	X	X	X					
6/28	8:40		MKTF-29	14		003	X	X	X	X	X	X	X	X	X	X					
6/28	9:10		OPIS-1	14		004	X	X	X	X	X	X	X	X	X	X					
6/28	9:35		STP-1-NM	14		005	X	X	X	X	X	X	X	X	X	X					
6/28	10:00		OW-12A	14		006	X	X	X	X	X	X	X	X	X	X					
6/28	10:20		OW-70	14		007	X	X	X	X	X	X	X	X	X	X					
6/28	—		DUP-6-28-22	14		008	X	X	X	X	X	X	X	X	X	X					
6/28	10:26		FB-6-28-22	3		009		X	X												
						010															

Date	Time	Relinquished by	Received by	Via	Date	Time
6/28	11:30	Hilario Trejo		Courier	6/29/22	0735
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

5.1 - 0 = 5.1
5.2 - 0 = 5.2
2.1 - 0 = 2.1
4.5 - 0 = 4.5

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

July 27, 2022

Lesli Alexander

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX: (505) 632-3911

RE: 2022 GW Sampling 2nd Qtr OrderNo.: 2206G22

Dear Lesli Alexander:

Hall Environmental Analysis Laboratory received 8 sample(s) on 6/30/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **2206G22**
Date: **7/27/2022**

CLIENT: Marathon
Project: 2022 GW Sampling 2nd Qtr

Analytical Notes Regarding EPA Method 8270:
Naphthalene, 1-methylnaphthalene and 2-methylnaphthalene may be reported by either EPA Method 8270 or EPA Method 8270SIMS, depending which method needs the least dilution.

"S" denote a flagged surrogate or spike recovery outside of the standard limits.

The laboratory control spike duplicate (LCSD) for Method 8270 had a low recovery for pyrene. The laboratory control spike (LCS) had acceptable recovery.

Analytical Report
Lab Order: **2206G22**
Date Reported: **7/27/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-29-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/29/2022 8:00:00 AM
Lab ID: 2206G22-001A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	7/6/2022 12:10:53 PM	G89271
Surr: BFB	96.1	0	70-130		%Rec	1	7/6/2022 12:10:53 PM	G89271
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	7/8/2022 12:48:00 AM	R89230
Toluene	ND	0.20	1.0		µg/L	1	7/8/2022 12:48:00 AM	R89230
Ethylbenzene	ND	0.21	1.0		µg/L	1	7/8/2022 12:48:00 AM	R89230
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	7/8/2022 12:48:00 AM	R89230
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	7/8/2022 12:48:00 AM	R89230
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	7/8/2022 12:48:00 AM	R89230
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	7/8/2022 12:48:00 AM	R89230
Acetone	8.6	2.5	10	J	µg/L	1	7/8/2022 12:48:00 AM	R89230
Bromomethane	ND	0.85	3.0		µg/L	1	7/8/2022 12:48:00 AM	R89230
2-Butanone	ND	2.0	10		µg/L	1	7/8/2022 12:48:00 AM	R89230
Carbon disulfide	ND	0.59	10		µg/L	1	7/8/2022 12:48:00 AM	R89230
Chlorobenzene	ND	0.16	1.0		µg/L	1	7/8/2022 12:48:00 AM	R89230
Chloroform	ND	0.13	1.0		µg/L	1	7/8/2022 12:48:00 AM	R89230
Chloromethane	ND	0.41	3.0		µg/L	1	7/8/2022 12:48:00 AM	R89230
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	7/8/2022 12:48:00 AM	R89230
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	7/8/2022 12:48:00 AM	R89230
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	7/8/2022 12:48:00 AM	R89230
Isopropylbenzene	ND	0.18	1.0		µg/L	1	7/8/2022 12:48:00 AM	R89230
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	7/8/2022 12:48:00 AM	R89230
Methylene Chloride	ND	0.50	3.0		µg/L	1	7/8/2022 12:48:00 AM	R89230
n-Butylbenzene	ND	0.25	3.0		µg/L	1	7/8/2022 12:48:00 AM	R89230
n-Propylbenzene	ND	0.18	1.0		µg/L	1	7/8/2022 12:48:00 AM	R89230
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	7/8/2022 12:48:00 AM	R89230
Styrene	ND	0.14	1.0		µg/L	1	7/8/2022 12:48:00 AM	R89230
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	7/8/2022 12:48:00 AM	R89230
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	7/8/2022 12:48:00 AM	R89230
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	7/8/2022 12:48:00 AM	R89230
Vinyl chloride	ND	0.32	1.0		µg/L	1	7/8/2022 12:48:00 AM	R89230
Xylenes, Total	ND	0.37	1.5		µg/L	1	7/8/2022 12:48:00 AM	R89230
Surr: 1,2-Dichloroethane-d4	106	0	70-130		%Rec	1	7/8/2022 12:48:00 AM	R89230
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	7/8/2022 12:48:00 AM	R89230
Surr: Dibromofluoromethane	102	0	70-130		%Rec	1	7/8/2022 12:48:00 AM	R89230
Surr: Toluene-d8	98.4	0	70-130		%Rec	1	7/8/2022 12:48:00 AM	R89230

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206G22**
Date Reported: **7/27/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-29-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/29/2022 8:00:00 AM
Lab ID: 2206G22-001B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **BRM**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	7/6/2022 7:52:56 PM	68565

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206G22**
Date Reported: **7/27/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-29-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/29/2022 8:00:00 AM
Lab ID: 2206G22-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.025	0.016	0.064	J	mg/L	1	7/11/2022 4:20:27 PM	68495
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	7/11/2022 4:20:27 PM	68495
Surr: DNOP	105	0	42.2-138		%Rec	1	7/11/2022 4:20:27 PM	68495
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	7/12/2022 2:23:48 PM	68493
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	7/12/2022 2:23:48 PM	68493
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	7/12/2022 2:23:48 PM	68493
Di-n-octyl phthalate	ND	12	20		µg/L	1	7/12/2022 2:23:48 PM	68493
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	7/12/2022 2:23:48 PM	68493
Diethyl phthalate	ND	6.0	10		µg/L	1	7/12/2022 2:23:48 PM	68493
Dimethyl phthalate	ND	6.0	10		µg/L	1	7/12/2022 2:23:48 PM	68493
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	7/12/2022 2:23:48 PM	68493
2,4-Dinitrophenol	ND	16	20		µg/L	1	7/12/2022 2:23:48 PM	68493
2-Methylphenol	ND	5.0	10		µg/L	1	7/12/2022 2:23:48 PM	68493
3+4-Methylphenol	ND	5.1	10		µg/L	1	7/12/2022 2:23:48 PM	68493
Phenol	ND	18	20		µg/L	1	7/12/2022 2:23:48 PM	68493
Pyridine	ND	14	40		µg/L	1	7/12/2022 2:23:48 PM	68493
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	7/12/2022 2:23:48 PM	68493
Surr: 2-Fluorophenol	48.0	0	29.4-87.7		%Rec	1	7/12/2022 2:23:48 PM	68493
Surr: Phenol-d5	34.9	0	28.5-64.7		%Rec	1	7/12/2022 2:23:48 PM	68493
Surr: 2,4,6-Tribromophenol	53.1	0	18.6-129		%Rec	1	7/12/2022 2:23:48 PM	68493
Surr: Nitrobenzene-d5	64.4	0	36.9-103		%Rec	1	7/12/2022 2:23:48 PM	68493
Surr: 2-Fluorobiphenyl	60.1	0	38.1-99.9		%Rec	1	7/12/2022 2:23:48 PM	68493
Surr: 4-Terphenyl-d14	81.9	0	48-155		%Rec	1	7/12/2022 2:23:48 PM	68493
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	7/7/2022 3:56:00 AM	68493
Naphthalene	ND	0.20	0.30		µg/L	1	7/7/2022 3:56:00 AM	68493
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	7/7/2022 3:56:00 AM	68493
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	7/7/2022 3:56:00 AM	68493
Acenaphthene	ND	0.14	0.30		µg/L	1	7/7/2022 3:56:00 AM	68493
Fluorene	ND	0.095	0.30		µg/L	1	7/7/2022 3:56:00 AM	68493
Phenanthrene	ND	0.16	0.30		µg/L	1	7/7/2022 3:56:00 AM	68493
Anthracene	ND	0.14	0.30		µg/L	1	7/7/2022 3:56:00 AM	68493
Fluoranthene	ND	0.14	0.30		µg/L	1	7/7/2022 3:56:00 AM	68493
Pyrene	ND	0.32	1.0		µg/L	1	7/7/2022 3:56:00 AM	68493
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	7/7/2022 3:56:00 AM	68493
Chrysene	ND	0.25	0.30		µg/L	1	7/7/2022 3:56:00 AM	68493
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	7/7/2022 3:56:00 AM	68493
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	7/7/2022 3:56:00 AM	68493

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206G22**
Date Reported: **7/27/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-29-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/29/2022 8:00:00 AM
Lab ID: 2206G22-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	69.9	0	31.6-100		%Rec	1	7/7/2022 3:56:00 AM	68493
Surr: 2-Fluorobiphenyl	66.1	0	26.7-90.1		%Rec	1	7/7/2022 3:56:00 AM	68493
Surr: 4-Terphenyl-d14	96.7	0	72.3-147		%Rec	1	7/7/2022 3:56:00 AM	68493

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206G22**
Date Reported: **7/27/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-29-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/29/2022 8:00:00 AM
Lab ID: 2206G22-001D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	ND	0.0016	0.0030		mg/L	1	7/11/2022 11:26:54 AM	68545
Beryllium	ND	0.00088	0.0020		mg/L	1	7/11/2022 11:26:54 AM	68545
Cadmium	ND	0.0018	0.0020		mg/L	1	7/11/2022 11:26:54 AM	68545
Chromium	ND	0.0020	0.0060		mg/L	1	7/11/2022 11:26:54 AM	68545
Cobalt	ND	0.0035	0.0060		mg/L	1	7/11/2022 11:26:54 AM	68545
Nickel	ND	0.0053	0.010		mg/L	1	7/11/2022 11:26:54 AM	68545
Silver	ND	0.0018	0.0050		mg/L	1	7/11/2022 11:26:54 AM	68545
Vanadium	ND	0.0035	0.050		mg/L	1	7/11/2022 11:26:54 AM	68545
Zinc	ND	0.0039	0.010		mg/L	1	7/11/2022 11:26:54 AM	68545
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/7/2022 2:13:56 PM	68545
Arsenic	ND	0.00013	0.0010		mg/L	1	7/7/2022 2:13:56 PM	68545
Lead	ND	0.000061	0.00050		mg/L	1	7/7/2022 2:13:56 PM	68545
Selenium	ND	0.00037	0.0010		mg/L	1	7/7/2022 2:13:56 PM	68545
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/8/2022 12:48:06 PM	68622

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206G22**
Date Reported: **7/27/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-29-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/29/2022 8:00:00 AM
Lab ID: 2206G22-001E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	ND	0.0011	0.0020		mg/L	1	7/12/2022 10:23:25 AM	C89417
Beryllium	ND	0.00088	0.0020		mg/L	1	7/5/2022 2:02:44 PM	A89290
Cadmium	ND	0.00098	0.0020		mg/L	1	7/5/2022 2:02:44 PM	A89290
Chromium	ND	0.0020	0.0060		mg/L	1	7/5/2022 2:02:44 PM	A89290
Cobalt	ND	0.0024	0.0060		mg/L	1	7/5/2022 2:02:44 PM	A89290
Nickel	ND	0.0033	0.010		mg/L	1	7/5/2022 2:02:44 PM	A89290
Silver	ND	0.0013	0.0050		mg/L	1	7/5/2022 2:02:44 PM	A89290
Vanadium	ND	0.0017	0.050		mg/L	1	7/5/2022 2:02:44 PM	A89290
Zinc	0.0098	0.0032	0.010	J	mg/L	1	7/5/2022 2:02:44 PM	A89290
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/1/2022 4:44:53 PM	A89215
Arsenic	ND	0.00012	0.0010		mg/L	1	7/1/2022 4:44:53 PM	A89215
Lead	ND	0.000057	0.00050		mg/L	1	7/1/2022 4:44:53 PM	A89215
Selenium	ND	0.00034	0.0010		mg/L	1	7/1/2022 4:44:53 PM	A89215
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/8/2022 12:54:30 PM	68622

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206G22**
Date Reported: **7/27/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-44
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/29/2022 8:30:00 AM
Lab ID: 2206G22-002A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	7/6/2022 12:34:29 PM	G89271
Surr: BFB	95.4	0	70-130		%Rec	1	7/6/2022 12:34:29 PM	G89271
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	7/8/2022 1:11:00 AM	R89230
Toluene	ND	0.20	1.0		µg/L	1	7/8/2022 1:11:00 AM	R89230
Ethylbenzene	ND	0.21	1.0		µg/L	1	7/8/2022 1:11:00 AM	R89230
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	7/8/2022 1:11:00 AM	R89230
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	7/8/2022 1:11:00 AM	R89230
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	7/8/2022 1:11:00 AM	R89230
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	7/8/2022 1:11:00 AM	R89230
Acetone	ND	2.5	10		µg/L	1	7/8/2022 1:11:00 AM	R89230
Bromomethane	ND	0.85	3.0		µg/L	1	7/8/2022 1:11:00 AM	R89230
2-Butanone	ND	2.0	10		µg/L	1	7/8/2022 1:11:00 AM	R89230
Carbon disulfide	ND	0.59	10		µg/L	1	7/8/2022 1:11:00 AM	R89230
Chlorobenzene	ND	0.16	1.0		µg/L	1	7/8/2022 1:11:00 AM	R89230
Chloroform	ND	0.13	1.0		µg/L	1	7/8/2022 1:11:00 AM	R89230
Chloromethane	ND	0.41	3.0		µg/L	1	7/8/2022 1:11:00 AM	R89230
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	7/8/2022 1:11:00 AM	R89230
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	7/8/2022 1:11:00 AM	R89230
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	7/8/2022 1:11:00 AM	R89230
Isopropylbenzene	ND	0.18	1.0		µg/L	1	7/8/2022 1:11:00 AM	R89230
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	7/8/2022 1:11:00 AM	R89230
Methylene Chloride	ND	0.50	3.0		µg/L	1	7/8/2022 1:11:00 AM	R89230
n-Butylbenzene	ND	0.25	3.0		µg/L	1	7/8/2022 1:11:00 AM	R89230
n-Propylbenzene	ND	0.18	1.0		µg/L	1	7/8/2022 1:11:00 AM	R89230
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	7/8/2022 1:11:00 AM	R89230
Styrene	ND	0.14	1.0		µg/L	1	7/8/2022 1:11:00 AM	R89230
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	7/8/2022 1:11:00 AM	R89230
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	7/8/2022 1:11:00 AM	R89230
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	7/8/2022 1:11:00 AM	R89230
Vinyl chloride	ND	0.32	1.0		µg/L	1	7/8/2022 1:11:00 AM	R89230
Xylenes, Total	ND	0.37	1.5		µg/L	1	7/8/2022 1:11:00 AM	R89230
Surr: 1,2-Dichloroethane-d4	104	0	70-130		%Rec	1	7/8/2022 1:11:00 AM	R89230
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	7/8/2022 1:11:00 AM	R89230
Surr: Dibromofluoromethane	102	0	70-130		%Rec	1	7/8/2022 1:11:00 AM	R89230
Surr: Toluene-d8	96.0	0	70-130		%Rec	1	7/8/2022 1:11:00 AM	R89230

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206G22**
Date Reported: **7/27/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-44
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/29/2022 8:30:00 AM
Lab ID: 2206G22-002B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **BRM**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	7/6/2022 8:08:16 PM	68565

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206G22**
Date Reported: **7/27/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-44
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/29/2022 8:30:00 AM
Lab ID: 2206G22-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.042	0.016	0.064	J	mg/L	1	7/11/2022 4:44:29 PM	68495
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	7/11/2022 4:44:29 PM	68495
Surr: DNOP	92.1	0	42.2-138		%Rec	1	7/11/2022 4:44:29 PM	68495
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	180	200		µg/L	1	7/12/2022 3:06:10 PM	68493
Bis(2-ethylhexyl)phthalate	ND	84	100		µg/L	1	7/12/2022 3:06:10 PM	68493
Di-n-butyl phthalate	ND	77	100		µg/L	1	7/12/2022 3:06:10 PM	68493
Di-n-octyl phthalate	ND	120	200		µg/L	1	7/12/2022 3:06:10 PM	68493
1,4-Dichlorobenzene	ND	24	50		µg/L	1	7/12/2022 3:06:10 PM	68493
Diethyl phthalate	ND	60	100		µg/L	1	7/12/2022 3:06:10 PM	68493
Dimethyl phthalate	ND	60	100		µg/L	1	7/12/2022 3:06:10 PM	68493
2,4-Dimethylphenol	ND	58	100		µg/L	1	7/12/2022 3:06:10 PM	68493
2,4-Dinitrophenol	ND	160	200		µg/L	1	7/12/2022 3:06:10 PM	68493
2-Methylphenol	ND	50	100		µg/L	1	7/12/2022 3:06:10 PM	68493
3+4-Methylphenol	ND	51	100		µg/L	1	7/12/2022 3:06:10 PM	68493
Phenol	ND	180	200		µg/L	1	7/12/2022 3:06:10 PM	68493
Pyridine	ND	140	400		µg/L	1	7/12/2022 3:06:10 PM	68493
2,4,6-Trichlorophenol	ND	59	100		µg/L	1	7/12/2022 3:06:10 PM	68493
Surr: 2-Fluorophenol	60.1	0	29.4-87.7		%Rec	1	7/12/2022 3:06:10 PM	68493
Surr: Phenol-d5	43.5	0	28.5-64.7		%Rec	1	7/12/2022 3:06:10 PM	68493
Surr: 2,4,6-Tribromophenol	66.4	0	18.6-129		%Rec	1	7/12/2022 3:06:10 PM	68493
Surr: Nitrobenzene-d5	75.3	0	36.9-103		%Rec	1	7/12/2022 3:06:10 PM	68493
Surr: 2-Fluorobiphenyl	71.5	0	38.1-99.9		%Rec	1	7/12/2022 3:06:10 PM	68493
Surr: 4-Terphenyl-d14	84.6	0	48-155		%Rec	1	7/12/2022 3:06:10 PM	68493
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	1.1	10		µg/L	1	7/7/2022 4:39:00 AM	68493
Naphthalene	ND	2.0	3.0		µg/L	1	7/7/2022 4:39:00 AM	68493
1-Methylnaphthalene	ND	1.5	3.0		µg/L	1	7/7/2022 4:39:00 AM	68493
2-Methylnaphthalene	ND	1.4	3.0		µg/L	1	7/7/2022 4:39:00 AM	68493
Acenaphthene	ND	1.4	3.0		µg/L	1	7/7/2022 4:39:00 AM	68493
Fluorene	ND	0.95	3.0		µg/L	1	7/7/2022 4:39:00 AM	68493
Phenanthrene	ND	1.6	3.0		µg/L	1	7/7/2022 4:39:00 AM	68493
Anthracene	ND	1.4	3.0		µg/L	1	7/7/2022 4:39:00 AM	68493
Fluoranthene	ND	1.4	3.0		µg/L	1	7/7/2022 4:39:00 AM	68493
Pyrene	ND	3.2	10		µg/L	1	7/7/2022 4:39:00 AM	68493
Benz(a)anthracene	ND	1.5	3.0		µg/L	1	7/7/2022 4:39:00 AM	68493
Chrysene	ND	2.5	3.0		µg/L	1	7/7/2022 4:39:00 AM	68493
Benzo(b)fluoranthene	ND	1.4	3.0		µg/L	1	7/7/2022 4:39:00 AM	68493
Indeno(1,2,3-cd)pyrene	ND	2.3	3.0		µg/L	1	7/7/2022 4:39:00 AM	68493

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206G22**
Date Reported: **7/27/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-44
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/29/2022 8:30:00 AM
Lab ID: 2206G22-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	75.2	0	31.6-100		%Rec	1	7/7/2022 4:39:00 AM	68493
Surr: 2-Fluorobiphenyl	71.9	0	26.7-90.1		%Rec	1	7/7/2022 4:39:00 AM	68493
Surr: 4-Terphenyl-d14	96.7	0	72.3-147		%Rec	1	7/7/2022 4:39:00 AM	68493

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206G22**
Date Reported: **7/27/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-44
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/29/2022 8:30:00 AM
Lab ID: 2206G22-002D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.30	0.0016	0.0030		mg/L	1	7/11/2022 11:36:29 AM	68545
Beryllium	ND	0.00088	0.0020		mg/L	1	7/11/2022 11:36:29 AM	68545
Cadmium	ND	0.0018	0.0020		mg/L	1	7/11/2022 11:36:29 AM	68545
Chromium	0.019	0.0020	0.0060		mg/L	1	7/11/2022 11:36:29 AM	68545
Cobalt	0.0081	0.0035	0.0060		mg/L	1	7/11/2022 11:36:29 AM	68545
Nickel	0.0081	0.0053	0.010	J	mg/L	1	7/11/2022 11:36:29 AM	68545
Silver	ND	0.0018	0.0050		mg/L	1	7/11/2022 11:36:29 AM	68545
Vanadium	0.21	0.0035	0.050		mg/L	1	7/11/2022 11:36:29 AM	68545
Zinc	0.099	0.0039	0.010		mg/L	1	7/11/2022 11:36:29 AM	68545
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/7/2022 2:16:22 PM	68545
Arsenic	0.019	0.00013	0.0010	*	mg/L	1	7/7/2022 2:16:22 PM	68545
Lead	0.021	0.000061	0.00050	*	mg/L	1	7/7/2022 2:16:22 PM	68545
Selenium	0.015	0.00037	0.0010		mg/L	1	7/7/2022 2:16:22 PM	68545
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/8/2022 12:56:39 PM	68622

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206G22**
Date Reported: **7/27/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-44
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/29/2022 8:30:00 AM
Lab ID: 2206G22-002E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.035	0.0011	0.0020		mg/L	1	7/12/2022 10:25:47 AM	C89417
Beryllium	ND	0.00088	0.0020		mg/L	1	7/5/2022 2:05:58 PM	A89290
Cadmium	ND	0.00098	0.0020		mg/L	1	7/5/2022 2:05:58 PM	A89290
Chromium	0.0024	0.0020	0.0060	J	mg/L	1	7/5/2022 2:05:58 PM	A89290
Cobalt	ND	0.0024	0.0060		mg/L	1	7/5/2022 2:05:58 PM	A89290
Nickel	ND	0.0033	0.010		mg/L	1	7/5/2022 2:05:58 PM	A89290
Silver	ND	0.0013	0.0050		mg/L	1	7/5/2022 2:05:58 PM	A89290
Vanadium	0.12	0.0017	0.050		mg/L	1	7/5/2022 2:05:58 PM	A89290
Zinc	0.010	0.0032	0.010		mg/L	1	7/5/2022 2:05:58 PM	A89290
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/1/2022 4:47:34 PM	A89215
Arsenic	0.012	0.00012	0.0010	*	mg/L	1	7/1/2022 4:47:34 PM	A89215
Lead	0.00032	0.000057	0.00050	J	mg/L	1	7/1/2022 4:47:34 PM	A89215
Selenium	0.012	0.00034	0.0010		mg/L	1	7/1/2022 4:47:34 PM	A89215
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/8/2022 12:58:47 PM	68622

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206G22**
Date Reported: **7/27/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-57
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/29/2022 8:50:00 AM
Lab ID: 2206G22-003A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	34	0.45	2.5		mg/L	50	7/6/2022 1:45:38 PM	G89271
Surr: BFB	102	0	70-130		%Rec	50	7/6/2022 1:45:38 PM	G89271
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	12000	110	500		µg/L	500	7/8/2022 2:19:00 AM	R89230
Toluene	28	10	50	J	µg/L	50	7/8/2022 2:42:00 AM	R89230
Ethylbenzene	510	11	50		µg/L	50	7/8/2022 2:42:00 AM	R89230
Methyl tert-butyl ether (MTBE)	31	20	50	J	µg/L	50	7/8/2022 2:42:00 AM	R89230
1,2,4-Trimethylbenzene	ND	6.1	50		µg/L	50	7/8/2022 2:42:00 AM	R89230
1,3,5-Trimethylbenzene	ND	9.1	50		µg/L	50	7/8/2022 2:42:00 AM	R89230
1,2-Dichloroethane (EDC)	ND	13	50		µg/L	50	7/8/2022 2:42:00 AM	R89230
Acetone	ND	130	500		µg/L	50	7/8/2022 2:42:00 AM	R89230
Bromomethane	ND	43	150		µg/L	50	7/8/2022 2:42:00 AM	R89230
2-Butanone	ND	100	500		µg/L	50	7/8/2022 2:42:00 AM	R89230
Carbon disulfide	ND	30	500		µg/L	50	7/8/2022 2:42:00 AM	R89230
Chlorobenzene	ND	7.8	50		µg/L	50	7/8/2022 2:42:00 AM	R89230
Chloroform	ND	6.7	50		µg/L	50	7/8/2022 2:42:00 AM	R89230
Chloromethane	ND	21	150		µg/L	50	7/8/2022 2:42:00 AM	R89230
cis-1,2-DCE	ND	19	50		µg/L	50	7/8/2022 2:42:00 AM	R89230
1,1-Dichloroethane	ND	14	50		µg/L	50	7/8/2022 2:42:00 AM	R89230
1,1-Dichloroethene	ND	10	50		µg/L	50	7/8/2022 2:42:00 AM	R89230
Isopropylbenzene	14	9.1	50	J	µg/L	50	7/8/2022 2:42:00 AM	R89230
4-Isopropyltoluene	ND	10	50		µg/L	50	7/8/2022 2:42:00 AM	R89230
Methylene Chloride	ND	25	150		µg/L	50	7/8/2022 2:42:00 AM	R89230
n-Butylbenzene	ND	13	150		µg/L	50	7/8/2022 2:42:00 AM	R89230
n-Propylbenzene	34	9.1	50	J	µg/L	50	7/8/2022 2:42:00 AM	R89230
sec-Butylbenzene	ND	7.2	50		µg/L	50	7/8/2022 2:42:00 AM	R89230
Styrene	ND	6.8	50		µg/L	50	7/8/2022 2:42:00 AM	R89230
Tetrachloroethene (PCE)	ND	18	50		µg/L	50	7/8/2022 2:42:00 AM	R89230
1,1,1-Trichloroethane	ND	15	50		µg/L	50	7/8/2022 2:42:00 AM	R89230
Trichloroethene (TCE)	ND	10	50		µg/L	50	7/8/2022 2:42:00 AM	R89230
Vinyl chloride	ND	16	50		µg/L	50	7/8/2022 2:42:00 AM	R89230
Xylenes, Total	100	19	75		µg/L	50	7/8/2022 2:42:00 AM	R89230
Surr: 1,2-Dichloroethane-d4	105	0	70-130		%Rec	50	7/8/2022 2:42:00 AM	R89230
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	50	7/8/2022 2:42:00 AM	R89230
Surr: Dibromofluoromethane	99.4	0	70-130		%Rec	50	7/8/2022 2:42:00 AM	R89230
Surr: Toluene-d8	97.5	0	70-130		%Rec	50	7/8/2022 2:42:00 AM	R89230

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206G22**
Date Reported: **7/27/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-57
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/29/2022 8:50:00 AM
Lab ID: 2206G22-003B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **BRM**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	7/6/2022 8:23:37 PM	68565

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206G22**
Date Reported: **7/27/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-57
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/29/2022 8:50:00 AM
Lab ID: 2206G22-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	4.7	0.16	0.64		mg/L	10	7/12/2022 4:06:14 PM	68495
Motor Oil Range Organics (MRO)	ND	0.52	0.80	D	mg/L	10	7/12/2022 4:06:14 PM	68495
Surr: DNOP	0	0	42.2-138	S	%Rec	10	7/12/2022 4:06:14 PM	68495
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	7/12/2022 3:48:28 PM	68493
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	7/12/2022 3:48:28 PM	68493
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	7/12/2022 3:48:28 PM	68493
Di-n-octyl phthalate	ND	12	20		µg/L	1	7/12/2022 3:48:28 PM	68493
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	7/12/2022 3:48:28 PM	68493
Diethyl phthalate	ND	6.0	10		µg/L	1	7/12/2022 3:48:28 PM	68493
Dimethyl phthalate	ND	6.0	10		µg/L	1	7/12/2022 3:48:28 PM	68493
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	7/12/2022 3:48:28 PM	68493
2,4-Dinitrophenol	ND	16	20		µg/L	1	7/12/2022 3:48:28 PM	68493
1-Methylnaphthalene	96	4.3	5.0		µg/L	1	7/12/2022 3:48:28 PM	68493
2-Methylnaphthalene	71	4.2	5.0		µg/L	1	7/12/2022 3:48:28 PM	68493
2-Methylphenol	ND	5.0	10		µg/L	1	7/12/2022 3:48:28 PM	68493
3+4-Methylphenol	ND	5.1	10		µg/L	1	7/12/2022 3:48:28 PM	68493
Naphthalene	130	3.2	5.0		µg/L	1	7/12/2022 3:48:28 PM	68493
Phenol	110	18	20		µg/L	1	7/12/2022 3:48:28 PM	68493
Pyridine	ND	14	40		µg/L	1	7/12/2022 3:48:28 PM	68493
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	7/12/2022 3:48:28 PM	68493
Surr: 2-Fluorophenol	55.1	0	29.4-87.7		%Rec	1	7/12/2022 3:48:28 PM	68493
Surr: Phenol-d5	41.2	0	28.5-64.7		%Rec	1	7/12/2022 3:48:28 PM	68493
Surr: 2,4,6-Tribromophenol	70.3	0	18.6-129		%Rec	1	7/12/2022 3:48:28 PM	68493
Surr: Nitrobenzene-d5	74.3	0	36.9-103		%Rec	1	7/12/2022 3:48:28 PM	68493
Surr: 2-Fluorobiphenyl	66.6	0	38.1-99.9		%Rec	1	7/12/2022 3:48:28 PM	68493
Surr: 4-Terphenyl-d14	82.9	0	48-155		%Rec	1	7/12/2022 3:48:28 PM	68493
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	7/7/2022 5:22:00 AM	68493
Acenaphthene	3.0	0.14	0.30		µg/L	1	7/7/2022 5:22:00 AM	68493
Fluorene	5.3	0.095	0.30		µg/L	1	7/7/2022 5:22:00 AM	68493
Phenanthrene	7.3	0.16	0.30		µg/L	1	7/7/2022 5:22:00 AM	68493
Anthracene	0.20	0.14	0.30	J	µg/L	1	7/7/2022 5:22:00 AM	68493
Fluoranthene	ND	0.14	0.30		µg/L	1	7/7/2022 5:22:00 AM	68493
Pyrene	ND	0.32	1.0		µg/L	1	7/7/2022 5:22:00 AM	68493
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	7/7/2022 5:22:00 AM	68493
Chrysene	ND	0.25	0.30		µg/L	1	7/7/2022 5:22:00 AM	68493
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	7/7/2022 5:22:00 AM	68493
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	7/7/2022 5:22:00 AM	68493

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206G22**
Date Reported: **7/27/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-57
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/29/2022 8:50:00 AM
Lab ID: 2206G22-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	74.3	0	31.6-100		%Rec	1	7/7/2022 5:22:00 AM	68493
Surr: 2-Fluorobiphenyl	53.8	0	26.7-90.1		%Rec	1	7/7/2022 5:22:00 AM	68493
Surr: 4-Terphenyl-d14	76.6	0	72.3-147		%Rec	1	7/7/2022 5:22:00 AM	68493

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206G22**
Date Reported: **7/27/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-57
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/29/2022 8:50:00 AM
Lab ID: 2206G22-003D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	31	0.16	0.30	*	mg/L	100	7/15/2022 7:10:42 PM	68545
Beryllium	0.029	0.018	0.040	*J	mg/L	20	7/11/2022 11:43:11 AM	68545
Cadmium	ND	0.035	0.040		mg/L	20	7/11/2022 11:43:11 AM	68545
Chromium	0.25	0.039	0.12	*	mg/L	20	7/11/2022 11:43:11 AM	68545
Cobalt	0.17	0.071	0.12		mg/L	20	7/11/2022 11:43:11 AM	68545
Nickel	0.31	0.11	0.20	*	mg/L	20	7/11/2022 11:43:11 AM	68545
Silver	ND	0.037	0.10		mg/L	20	7/11/2022 11:43:11 AM	68545
Vanadium	0.43	0.071	1.0	J	mg/L	20	7/11/2022 11:43:11 AM	68545
Zinc	0.59	0.077	0.20		mg/L	20	7/11/2022 11:43:11 AM	68545
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	7/7/2022 2:18:49 PM	68545
Arsenic	0.047	0.00063	0.0050	*	mg/L	5	7/7/2022 2:18:49 PM	68545
Lead	0.32	0.0012	0.010	*	mg/L	20	7/11/2022 12:35:12 PM	68545
Selenium	0.078	0.0019	0.0050	*	mg/L	5	7/7/2022 2:18:49 PM	68545
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00025	0.000091	0.00020		mg/L	1	7/8/2022 1:00:55 PM	68622

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206G22**
Date Reported: **7/27/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-57
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/29/2022 8:50:00 AM
Lab ID: 2206G22-003E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	3.5	0.0056	0.010	*	mg/L	5	7/14/2022 3:01:11 PM	B89506
Beryllium	ND	0.00088	0.0020		mg/L	1	7/5/2022 2:09:13 PM	A89290
Cadmium	ND	0.00098	0.0020		mg/L	1	7/5/2022 2:09:13 PM	A89290
Chromium	ND	0.0020	0.0060		mg/L	1	7/5/2022 2:09:13 PM	A89290
Cobalt	0.0026	0.0024	0.0060	J	mg/L	1	7/5/2022 2:09:13 PM	A89290
Nickel	0.057	0.0033	0.010		mg/L	1	7/5/2022 2:09:13 PM	A89290
Silver	ND	0.0013	0.0050		mg/L	1	7/5/2022 2:09:13 PM	A89290
Vanadium	0.0029	0.0017	0.050	J	mg/L	1	7/5/2022 2:09:13 PM	A89290
Zinc	0.0078	0.0032	0.010	J	mg/L	1	7/5/2022 2:09:13 PM	A89290
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/1/2022 4:50:16 PM	A89215
Arsenic	0.0025	0.00012	0.0010		mg/L	1	7/1/2022 4:50:16 PM	A89215
Lead	ND	0.000057	0.00050		mg/L	1	7/1/2022 4:50:16 PM	A89215
Selenium	ND	0.00034	0.0010		mg/L	1	7/1/2022 4:50:16 PM	A89215
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/8/2022 1:03:04 PM	68622

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206G22**
Date Reported: **7/27/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/29/2022 9:15:00 AM
Lab ID: 2206G22-004A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	74	0.45	2.5		mg/L	50	7/6/2022 2:09:22 PM	G89271
Surr: BFB	106	0	70-130		%Rec	50	7/6/2022 2:09:22 PM	G89271
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	28000	110	500		µg/L	500	7/8/2022 3:28:00 AM	R89230
Toluene	39	10	50	J	µg/L	50	7/8/2022 3:51:00 AM	R89230
Ethylbenzene	1200	11	50		µg/L	50	7/8/2022 3:51:00 AM	R89230
Methyl tert-butyl ether (MTBE)	1000	20	50		µg/L	50	7/8/2022 3:51:00 AM	R89230
1,2,4-Trimethylbenzene	9.6	6.1	50	J	µg/L	50	7/8/2022 3:51:00 AM	R89230
1,3,5-Trimethylbenzene	ND	9.1	50		µg/L	50	7/8/2022 3:51:00 AM	R89230
1,2-Dichloroethane (EDC)	ND	13	50		µg/L	50	7/8/2022 3:51:00 AM	R89230
Acetone	ND	130	500		µg/L	50	7/8/2022 3:51:00 AM	R89230
Bromomethane	ND	43	150		µg/L	50	7/8/2022 3:51:00 AM	R89230
2-Butanone	ND	100	500		µg/L	50	7/8/2022 3:51:00 AM	R89230
Carbon disulfide	ND	30	500		µg/L	50	7/8/2022 3:51:00 AM	R89230
Chlorobenzene	ND	7.8	50		µg/L	50	7/8/2022 3:51:00 AM	R89230
Chloroform	ND	6.7	50		µg/L	50	7/8/2022 3:51:00 AM	R89230
Chloromethane	ND	21	150		µg/L	50	7/8/2022 3:51:00 AM	R89230
cis-1,2-DCE	ND	19	50		µg/L	50	7/8/2022 3:51:00 AM	R89230
1,1-Dichloroethane	ND	14	50		µg/L	50	7/8/2022 3:51:00 AM	R89230
1,1-Dichloroethene	ND	10	50		µg/L	50	7/8/2022 3:51:00 AM	R89230
Isopropylbenzene	31	9.1	50	J	µg/L	50	7/8/2022 3:51:00 AM	R89230
4-Isopropyltoluene	ND	10	50		µg/L	50	7/8/2022 3:51:00 AM	R89230
Methylene Chloride	ND	25	150		µg/L	50	7/8/2022 3:51:00 AM	R89230
n-Butylbenzene	15	13	150	J	µg/L	50	7/8/2022 3:51:00 AM	R89230
n-Propylbenzene	95	9.1	50		µg/L	50	7/8/2022 3:51:00 AM	R89230
sec-Butylbenzene	7.3	7.2	50	J	µg/L	50	7/8/2022 3:51:00 AM	R89230
Styrene	ND	6.8	50		µg/L	50	7/8/2022 3:51:00 AM	R89230
Tetrachloroethene (PCE)	ND	18	50		µg/L	50	7/8/2022 3:51:00 AM	R89230
1,1,1-Trichloroethane	ND	15	50		µg/L	50	7/8/2022 3:51:00 AM	R89230
Trichloroethene (TCE)	ND	10	50		µg/L	50	7/8/2022 3:51:00 AM	R89230
Vinyl chloride	ND	16	50		µg/L	50	7/8/2022 3:51:00 AM	R89230
Xylenes, Total	130	19	75		µg/L	50	7/8/2022 3:51:00 AM	R89230
Surr: 1,2-Dichloroethane-d4	103	0	70-130		%Rec	50	7/8/2022 3:51:00 AM	R89230
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	50	7/8/2022 3:51:00 AM	R89230
Surr: Dibromofluoromethane	99.2	0	70-130		%Rec	50	7/8/2022 3:51:00 AM	R89230
Surr: Toluene-d8	97.2	0	70-130		%Rec	50	7/8/2022 3:51:00 AM	R89230

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206G22**
Date Reported: **7/27/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/29/2022 9:15:00 AM
Lab ID: 2206G22-004B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **BRM**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	7/6/2022 11:12:27 PM	68566

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206G22**
Date Reported: **7/27/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/29/2022 9:15:00 AM
Lab ID: 2206G22-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	5.9	0.16	0.64		mg/L	10	7/12/2022 4:30:07 PM	68495
Motor Oil Range Organics (MRO)	ND	0.52	0.80	D	mg/L	10	7/12/2022 4:30:07 PM	68495
Surr: DNOP	0	0	42.2-138	S	%Rec	10	7/12/2022 4:30:07 PM	68495
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	7/12/2022 4:31:08 PM	68493
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	7/12/2022 4:31:08 PM	68493
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	7/12/2022 4:31:08 PM	68493
Di-n-octyl phthalate	ND	12	20		µg/L	1	7/12/2022 4:31:08 PM	68493
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	7/12/2022 4:31:08 PM	68493
Diethyl phthalate	ND	6.0	10		µg/L	1	7/12/2022 4:31:08 PM	68493
Dimethyl phthalate	ND	6.0	10		µg/L	1	7/12/2022 4:31:08 PM	68493
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	7/12/2022 4:31:08 PM	68493
2,4-Dinitrophenol	ND	16	20		µg/L	1	7/12/2022 4:31:08 PM	68493
1-Methylnaphthalene	68	4.3	5.0		µg/L	1	7/12/2022 4:31:08 PM	68493
2-Methylnaphthalene	77	4.2	5.0		µg/L	1	7/12/2022 4:31:08 PM	68493
2-Methylphenol	ND	5.0	10		µg/L	1	7/12/2022 4:31:08 PM	68493
3+4-Methylphenol	ND	5.1	10		µg/L	1	7/12/2022 4:31:08 PM	68493
Naphthalene	140	3.2	5.0		µg/L	1	7/12/2022 4:31:08 PM	68493
Phenol	70	18	20		µg/L	1	7/12/2022 4:31:08 PM	68493
Pyridine	ND	14	40		µg/L	1	7/12/2022 4:31:08 PM	68493
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	7/12/2022 4:31:08 PM	68493
Surr: 2-Fluorophenol	48.0	0	29.4-87.7		%Rec	1	7/12/2022 4:31:08 PM	68493
Surr: Phenol-d5	44.3	0	28.5-64.7		%Rec	1	7/12/2022 4:31:08 PM	68493
Surr: 2,4,6-Tribromophenol	66.6	0	18.6-129		%Rec	1	7/12/2022 4:31:08 PM	68493
Surr: Nitrobenzene-d5	68.6	0	36.9-103		%Rec	1	7/12/2022 4:31:08 PM	68493
Surr: 2-Fluorobiphenyl	59.5	0	38.1-99.9		%Rec	1	7/12/2022 4:31:08 PM	68493
Surr: 4-Terphenyl-d14	78.7	0	48-155		%Rec	1	7/12/2022 4:31:08 PM	68493
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	7/7/2022 6:07:00 AM	68493
Acenaphthene	2.7	0.14	0.30		µg/L	1	7/7/2022 6:07:00 AM	68493
Fluorene	3.7	0.095	0.30		µg/L	1	7/7/2022 6:07:00 AM	68493
Phenanthrene	3.3	0.16	0.30		µg/L	1	7/7/2022 6:07:00 AM	68493
Anthracene	0.40	0.14	0.30		µg/L	1	7/7/2022 6:07:00 AM	68493
Fluoranthene	0.24	0.14	0.30	J	µg/L	1	7/7/2022 6:07:00 AM	68493
Pyrene	ND	0.32	1.0		µg/L	1	7/7/2022 6:07:00 AM	68493
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	7/7/2022 6:07:00 AM	68493
Chrysene	ND	0.25	0.30		µg/L	1	7/7/2022 6:07:00 AM	68493
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	7/7/2022 6:07:00 AM	68493
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	7/7/2022 6:07:00 AM	68493

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206G22**
Date Reported: **7/27/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/29/2022 9:15:00 AM
Lab ID: 2206G22-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	72.9	0	31.6-100		%Rec	1	7/7/2022 6:07:00 AM	68493
Surr: 2-Fluorobiphenyl	54.0	0	26.7-90.1		%Rec	1	7/7/2022 6:07:00 AM	68493
Surr: 4-Terphenyl-d14	71.8	0	72.3-147	S	%Rec	1	7/7/2022 6:07:00 AM	68493

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206G22**
Date Reported: **7/27/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/29/2022 9:15:00 AM
Lab ID: 2206G22-004D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	5.5	0.016	0.030	*	mg/L	10	7/11/2022 11:45:55 AM	68545
Beryllium	ND	0.00088	0.0020		mg/L	1	7/11/2022 11:44:32 AM	68545
Cadmium	ND	0.0018	0.0020		mg/L	1	7/11/2022 11:44:32 AM	68545
Chromium	ND	0.0020	0.0060		mg/L	1	7/11/2022 11:44:32 AM	68545
Cobalt	ND	0.0035	0.0060		mg/L	1	7/11/2022 11:44:32 AM	68545
Nickel	0.058	0.0053	0.010		mg/L	1	7/11/2022 11:44:32 AM	68545
Silver	ND	0.0018	0.0050		mg/L	1	7/11/2022 11:44:32 AM	68545
Vanadium	0.0049	0.0035	0.050	J	mg/L	1	7/11/2022 11:44:32 AM	68545
Zinc	0.014	0.0039	0.010		mg/L	1	7/11/2022 11:44:32 AM	68545
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/7/2022 2:21:15 PM	68545
Arsenic	0.0039	0.00013	0.0010		mg/L	1	7/7/2022 2:21:15 PM	68545
Lead	0.00039	0.000061	0.00050	J	mg/L	1	7/7/2022 2:21:15 PM	68545
Selenium	ND	0.00037	0.0010		mg/L	1	7/7/2022 2:21:15 PM	68545
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/8/2022 1:05:12 PM	68622

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206G22**
Date Reported: **7/27/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/29/2022 9:15:00 AM
Lab ID: 2206G22-004E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	5.1	0.011	0.020	*	mg/L	10	7/8/2022 9:25:57 AM	A89335
Beryllium	ND	0.00088	0.0020		mg/L	1	7/5/2022 2:18:11 PM	A89290
Cadmium	ND	0.00098	0.0020		mg/L	1	7/5/2022 2:18:11 PM	A89290
Chromium	ND	0.0020	0.0060		mg/L	1	7/5/2022 2:18:11 PM	A89290
Cobalt	ND	0.0024	0.0060		mg/L	1	7/5/2022 2:18:11 PM	A89290
Nickel	0.050	0.0033	0.010		mg/L	1	7/5/2022 2:18:11 PM	A89290
Silver	ND	0.0013	0.0050		mg/L	1	7/5/2022 2:18:11 PM	A89290
Vanadium	0.0031	0.0017	0.050	J	mg/L	1	7/5/2022 2:18:11 PM	A89290
Zinc	0.011	0.0032	0.010		mg/L	1	7/5/2022 2:18:11 PM	A89290
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/1/2022 4:52:57 PM	A89215
Arsenic	0.0035	0.00012	0.0010		mg/L	1	7/1/2022 4:52:57 PM	A89215
Lead	ND	0.000057	0.00050		mg/L	1	7/1/2022 4:52:57 PM	A89215
Selenium	ND	0.00034	0.0010		mg/L	1	7/1/2022 4:52:57 PM	A89215
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/8/2022 1:07:21 PM	68622

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206G22**
Date Reported: **7/27/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58A
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/29/2022 9:45:00 AM
Lab ID: 2206G22-005A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	27	0.18	1.0		mg/L	20	7/6/2022 2:33:03 PM	G89271
Surr: BFB	114	0	70-130		%Rec	20	7/6/2022 2:33:03 PM	G89271
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	6500	110	500		µg/L	500	7/8/2022 4:37:00 AM	R89230
Toluene	130	10	50		µg/L	50	7/8/2022 5:00:00 AM	R89230
Ethylbenzene	540	11	50		µg/L	50	7/8/2022 5:00:00 AM	R89230
Methyl tert-butyl ether (MTBE)	2300	20	50		µg/L	50	7/8/2022 5:00:00 AM	R89230
1,2,4-Trimethylbenzene	260	6.1	50		µg/L	50	7/8/2022 5:00:00 AM	R89230
1,3,5-Trimethylbenzene	45	9.1	50	J	µg/L	50	7/8/2022 5:00:00 AM	R89230
1,2-Dichloroethane (EDC)	ND	13	50		µg/L	50	7/8/2022 5:00:00 AM	R89230
Acetone	ND	130	500		µg/L	50	7/8/2022 5:00:00 AM	R89230
Bromomethane	ND	43	150		µg/L	50	7/8/2022 5:00:00 AM	R89230
2-Butanone	ND	100	500		µg/L	50	7/8/2022 5:00:00 AM	R89230
Carbon disulfide	ND	30	500		µg/L	50	7/8/2022 5:00:00 AM	R89230
Chlorobenzene	ND	7.8	50		µg/L	50	7/8/2022 5:00:00 AM	R89230
Chloroform	ND	6.7	50		µg/L	50	7/8/2022 5:00:00 AM	R89230
Chloromethane	ND	21	150		µg/L	50	7/8/2022 5:00:00 AM	R89230
cis-1,2-DCE	ND	19	50		µg/L	50	7/8/2022 5:00:00 AM	R89230
1,1-Dichloroethane	ND	14	50		µg/L	50	7/8/2022 5:00:00 AM	R89230
1,1-Dichloroethene	ND	10	50		µg/L	50	7/8/2022 5:00:00 AM	R89230
Isopropylbenzene	32	9.1	50	J	µg/L	50	7/8/2022 5:00:00 AM	R89230
4-Isopropyltoluene	ND	10	50		µg/L	50	7/8/2022 5:00:00 AM	R89230
Methylene Chloride	ND	25	150		µg/L	50	7/8/2022 5:00:00 AM	R89230
n-Butylbenzene	15	13	150	J	µg/L	50	7/8/2022 5:00:00 AM	R89230
n-Propylbenzene	76	9.1	50		µg/L	50	7/8/2022 5:00:00 AM	R89230
sec-Butylbenzene	7.9	7.2	50	J	µg/L	50	7/8/2022 5:00:00 AM	R89230
Styrene	ND	6.8	50		µg/L	50	7/8/2022 5:00:00 AM	R89230
Tetrachloroethene (PCE)	ND	18	50		µg/L	50	7/8/2022 5:00:00 AM	R89230
1,1,1-Trichloroethane	ND	15	50		µg/L	50	7/8/2022 5:00:00 AM	R89230
Trichloroethene (TCE)	ND	10	50		µg/L	50	7/8/2022 5:00:00 AM	R89230
Vinyl chloride	ND	16	50		µg/L	50	7/8/2022 5:00:00 AM	R89230
Xylenes, Total	620	19	75		µg/L	50	7/8/2022 5:00:00 AM	R89230
Surr: 1,2-Dichloroethane-d4	102	0	70-130		%Rec	50	7/8/2022 5:00:00 AM	R89230
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	50	7/8/2022 5:00:00 AM	R89230
Surr: Dibromofluoromethane	97.9	0	70-130		%Rec	50	7/8/2022 5:00:00 AM	R89230
Surr: Toluene-d8	99.3	0	70-130		%Rec	50	7/8/2022 5:00:00 AM	R89230

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206G22**
Date Reported: **7/27/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58A
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/29/2022 9:45:00 AM
Lab ID: 2206G22-005B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **BRM**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	7/6/2022 11:43:07 PM	68566

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206G22**
Date Reported: **7/27/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58A
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/29/2022 9:45:00 AM
Lab ID: 2206G22-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	3.2	0.016	0.064		mg/L	1	7/11/2022 6:20:38 PM	68495
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	7/11/2022 6:20:38 PM	68495
Surr: DNOP	99.8	0	42.2-138		%Rec	1	7/11/2022 6:20:38 PM	68495
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	7/12/2022 5:13:36 PM	68493
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	7/12/2022 5:13:36 PM	68493
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	7/12/2022 5:13:36 PM	68493
Di-n-octyl phthalate	ND	12	20		µg/L	1	7/12/2022 5:13:36 PM	68493
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	7/12/2022 5:13:36 PM	68493
Diethyl phthalate	ND	6.0	10		µg/L	1	7/12/2022 5:13:36 PM	68493
Dimethyl phthalate	ND	6.0	10		µg/L	1	7/12/2022 5:13:36 PM	68493
2,4-Dimethylphenol	11	5.8	10		µg/L	1	7/12/2022 5:13:36 PM	68493
2,4-Dinitrophenol	ND	16	20		µg/L	1	7/12/2022 5:13:36 PM	68493
1-Methylnaphthalene	100	4.3	5.0		µg/L	1	7/12/2022 5:13:36 PM	68493
2-Methylnaphthalene	97	4.2	5.0		µg/L	1	7/12/2022 5:13:36 PM	68493
2-Methylphenol	9.5	5.0	10	J	µg/L	1	7/12/2022 5:13:36 PM	68493
3+4-Methylphenol	ND	5.1	10		µg/L	1	7/12/2022 5:13:36 PM	68493
Naphthalene	190	3.2	5.0		µg/L	1	7/12/2022 5:13:36 PM	68493
Phenol	21	18	20		µg/L	1	7/12/2022 5:13:36 PM	68493
Pyridine	ND	14	40		µg/L	1	7/12/2022 5:13:36 PM	68493
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	7/12/2022 5:13:36 PM	68493
Surr: 2-Fluorophenol	61.4	0	29.4-87.7		%Rec	1	7/12/2022 5:13:36 PM	68493
Surr: Phenol-d5	49.4	0	28.5-64.7		%Rec	1	7/12/2022 5:13:36 PM	68493
Surr: 2,4,6-Tribromophenol	75.0	0	18.6-129		%Rec	1	7/12/2022 5:13:36 PM	68493
Surr: Nitrobenzene-d5	71.8	0	36.9-103		%Rec	1	7/12/2022 5:13:36 PM	68493
Surr: 2-Fluorobiphenyl	69.1	0	38.1-99.9		%Rec	1	7/12/2022 5:13:36 PM	68493
Surr: 4-Terphenyl-d14	85.6	0	48-155		%Rec	1	7/12/2022 5:13:36 PM	68493
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	7/7/2022 6:51:00 AM	68493
Acenaphthene	4.2	0.14	0.30		µg/L	1	7/7/2022 6:51:00 AM	68493
Fluorene	5.9	0.095	0.30		µg/L	1	7/7/2022 6:51:00 AM	68493
Phenanthrene	5.0	0.16	0.30		µg/L	1	7/7/2022 6:51:00 AM	68493
Anthracene	0.48	0.14	0.30		µg/L	1	7/7/2022 6:51:00 AM	68493
Fluoranthene	0.26	0.14	0.30	J	µg/L	1	7/7/2022 6:51:00 AM	68493
Pyrene	ND	0.32	1.0		µg/L	1	7/7/2022 6:51:00 AM	68493
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	7/7/2022 6:51:00 AM	68493
Chrysene	ND	0.25	0.30		µg/L	1	7/7/2022 6:51:00 AM	68493
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	7/7/2022 6:51:00 AM	68493
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	7/7/2022 6:51:00 AM	68493

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206G22**
Date Reported: **7/27/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58A
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/29/2022 9:45:00 AM
Lab ID: 2206G22-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	79.8	0	31.6-100		%Rec	1	7/7/2022 6:51:00 AM	68493
Surr: 2-Fluorobiphenyl	61.4	0	26.7-90.1		%Rec	1	7/7/2022 6:51:00 AM	68493
Surr: 4-Terphenyl-d14	79.5	0	72.3-147		%Rec	1	7/7/2022 6:51:00 AM	68493

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206G22**
Date Reported: **7/27/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58A
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/29/2022 9:45:00 AM
Lab ID: 2206G22-005D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	1.2	0.0079	0.015		mg/L	5	7/11/2022 11:53:18 AM	68545
Beryllium	ND	0.00088	0.0020		mg/L	1	7/11/2022 11:47:18 AM	68545
Cadmium	ND	0.0018	0.0020		mg/L	1	7/11/2022 11:47:18 AM	68545
Chromium	0.0035	0.0020	0.0060	J	mg/L	1	7/11/2022 11:47:18 AM	68545
Cobalt	0.0065	0.0035	0.0060		mg/L	1	7/11/2022 11:47:18 AM	68545
Nickel	0.040	0.0053	0.010		mg/L	1	7/11/2022 11:47:18 AM	68545
Silver	ND	0.0018	0.0050		mg/L	1	7/11/2022 11:47:18 AM	68545
Vanadium	0.015	0.0035	0.050	J	mg/L	1	7/11/2022 11:47:18 AM	68545
Zinc	0.028	0.0039	0.010		mg/L	1	7/11/2022 11:47:18 AM	68545
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/7/2022 2:23:42 PM	68545
Arsenic	0.0045	0.00013	0.0010		mg/L	1	7/7/2022 2:23:42 PM	68545
Lead	0.0051	0.000061	0.00050		mg/L	1	7/7/2022 2:23:42 PM	68545
Selenium	0.00053	0.00037	0.0010	J	mg/L	1	7/7/2022 2:23:42 PM	68545
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00045	0.0010		mg/L	5	7/8/2022 1:26:39 PM	68622

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206G22**
Date Reported: **7/27/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58A
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/29/2022 9:45:00 AM
Lab ID: 2206G22-005E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	1.0	0.0056	0.010		mg/L	5	7/12/2022 5:37:48 PM	C89417
Beryllium	ND	0.00088	0.0020		mg/L	1	7/5/2022 2:20:55 PM	A89290
Cadmium	ND	0.00098	0.0020		mg/L	1	7/5/2022 2:20:55 PM	A89290
Chromium	ND	0.0020	0.0060		mg/L	1	7/5/2022 2:20:55 PM	A89290
Cobalt	ND	0.0024	0.0060		mg/L	1	7/5/2022 2:20:55 PM	A89290
Nickel	0.036	0.0033	0.010		mg/L	1	7/5/2022 2:20:55 PM	A89290
Silver	ND	0.0013	0.0050		mg/L	1	7/5/2022 2:20:55 PM	A89290
Vanadium	ND	0.0017	0.050		mg/L	1	7/5/2022 2:20:55 PM	A89290
Zinc	0.015	0.0032	0.010		mg/L	1	7/5/2022 2:20:55 PM	A89290
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/1/2022 4:55:38 PM	A89215
Arsenic	0.0038	0.00012	0.0010		mg/L	1	7/1/2022 4:55:38 PM	A89215
Lead	0.00087	0.000057	0.00050		mg/L	1	7/1/2022 4:55:38 PM	A89215
Selenium	0.00041	0.00034	0.0010	J	mg/L	1	7/1/2022 4:55:38 PM	A89215
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/8/2022 1:20:11 PM	68622

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206G22**
Date Reported: **7/27/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-29-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/29/2022
Lab ID: 2206G22-006A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	77	0.45	2.5		mg/L	50	7/6/2022 2:56:48 PM	G89271
Surr: BFB	104	0	70-130		%Rec	50	7/6/2022 2:56:48 PM	G89271
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	27000	110	500		µg/L	500	7/8/2022 5:45:00 AM	R89230
Toluene	40	10	50	J	µg/L	50	7/8/2022 6:08:00 AM	R89230
Ethylbenzene	1200	11	50		µg/L	50	7/8/2022 6:08:00 AM	R89230
Methyl tert-butyl ether (MTBE)	1000	20	50		µg/L	50	7/8/2022 6:08:00 AM	R89230
1,2,4-Trimethylbenzene	9.6	6.1	50	J	µg/L	50	7/8/2022 6:08:00 AM	R89230
1,3,5-Trimethylbenzene	ND	9.1	50		µg/L	50	7/8/2022 6:08:00 AM	R89230
1,2-Dichloroethane (EDC)	ND	13	50		µg/L	50	7/8/2022 6:08:00 AM	R89230
Acetone	ND	130	500		µg/L	50	7/8/2022 6:08:00 AM	R89230
Bromomethane	ND	43	150		µg/L	50	7/8/2022 6:08:00 AM	R89230
2-Butanone	ND	100	500		µg/L	50	7/8/2022 6:08:00 AM	R89230
Carbon disulfide	ND	30	500		µg/L	50	7/8/2022 6:08:00 AM	R89230
Chlorobenzene	ND	7.8	50		µg/L	50	7/8/2022 6:08:00 AM	R89230
Chloroform	ND	6.7	50		µg/L	50	7/8/2022 6:08:00 AM	R89230
Chloromethane	ND	21	150		µg/L	50	7/8/2022 6:08:00 AM	R89230
cis-1,2-DCE	ND	19	50		µg/L	50	7/8/2022 6:08:00 AM	R89230
1,1-Dichloroethane	ND	14	50		µg/L	50	7/8/2022 6:08:00 AM	R89230
1,1-Dichloroethene	ND	10	50		µg/L	50	7/8/2022 6:08:00 AM	R89230
Isopropylbenzene	30	9.1	50	J	µg/L	50	7/8/2022 6:08:00 AM	R89230
4-Isopropyltoluene	ND	10	50		µg/L	50	7/8/2022 6:08:00 AM	R89230
Methylene Chloride	ND	25	150		µg/L	50	7/8/2022 6:08:00 AM	R89230
n-Butylbenzene	14	13	150	J	µg/L	50	7/8/2022 6:08:00 AM	R89230
n-Propylbenzene	93	9.1	50		µg/L	50	7/8/2022 6:08:00 AM	R89230
sec-Butylbenzene	ND	7.2	50		µg/L	50	7/8/2022 6:08:00 AM	R89230
Styrene	ND	6.8	50		µg/L	50	7/8/2022 6:08:00 AM	R89230
Tetrachloroethene (PCE)	ND	18	50		µg/L	50	7/8/2022 6:08:00 AM	R89230
1,1,1-Trichloroethane	ND	15	50		µg/L	50	7/8/2022 6:08:00 AM	R89230
Trichloroethene (TCE)	ND	10	50		µg/L	50	7/8/2022 6:08:00 AM	R89230
Vinyl chloride	ND	16	50		µg/L	50	7/8/2022 6:08:00 AM	R89230
Xylenes, Total	140	19	75		µg/L	50	7/8/2022 6:08:00 AM	R89230
Surr: 1,2-Dichloroethane-d4	103	0	70-130		%Rec	50	7/8/2022 6:08:00 AM	R89230
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	50	7/8/2022 6:08:00 AM	R89230
Surr: Dibromofluoromethane	99.9	0	70-130		%Rec	50	7/8/2022 6:08:00 AM	R89230
Surr: Toluene-d8	98.2	0	70-130		%Rec	50	7/8/2022 6:08:00 AM	R89230

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206G22**
Date Reported: **7/27/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-29-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/29/2022
Lab ID: 2206G22-006B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **BRM**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	7/6/2022 11:58:25 PM	68566

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206G22**
Date Reported: **7/27/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-29-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/29/2022
Lab ID: 2206G22-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	5.2	0.16	0.64		mg/L	10	7/12/2022 4:54:04 PM	68495
Motor Oil Range Organics (MRO)	ND	0.52	0.80	D	mg/L	10	7/12/2022 4:54:04 PM	68495
Surr: DNOP	0	0	42.2-138	S	%Rec	10	7/12/2022 4:54:04 PM	68495
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	7/12/2022 5:57:33 PM	68493
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	7/12/2022 5:57:33 PM	68493
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	7/12/2022 5:57:33 PM	68493
Di-n-octyl phthalate	ND	12	20		µg/L	1	7/12/2022 5:57:33 PM	68493
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	7/12/2022 5:57:33 PM	68493
Diethyl phthalate	ND	6.0	10		µg/L	1	7/12/2022 5:57:33 PM	68493
Dimethyl phthalate	ND	6.0	10		µg/L	1	7/12/2022 5:57:33 PM	68493
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	7/12/2022 5:57:33 PM	68493
2,4-Dinitrophenol	ND	16	20		µg/L	1	7/12/2022 5:57:33 PM	68493
1-Methylnaphthalene	65	4.3	5.0		µg/L	1	7/12/2022 5:57:33 PM	68493
2-Methylnaphthalene	73	4.2	5.0		µg/L	1	7/12/2022 5:57:33 PM	68493
2-Methylphenol	ND	5.0	10		µg/L	1	7/12/2022 5:57:33 PM	68493
3+4-Methylphenol	ND	5.1	10		µg/L	1	7/12/2022 5:57:33 PM	68493
Naphthalene	130	3.2	5.0		µg/L	1	7/12/2022 5:57:33 PM	68493
Phenol	44	18	20		µg/L	1	7/12/2022 5:57:33 PM	68493
Pyridine	ND	14	40		µg/L	1	7/12/2022 5:57:33 PM	68493
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	7/12/2022 5:57:33 PM	68493
Surr: 2-Fluorophenol	10.4	0	29.4-87.7	S	%Rec	1	7/12/2022 5:57:33 PM	68493
Surr: Phenol-d5	29.3	0	28.5-64.7		%Rec	1	7/12/2022 5:57:33 PM	68493
Surr: 2,4,6-Tribromophenol	4.47	0	18.6-129	S	%Rec	1	7/12/2022 5:57:33 PM	68493
Surr: Nitrobenzene-d5	63.1	0	36.9-103		%Rec	1	7/12/2022 5:57:33 PM	68493
Surr: 2-Fluorobiphenyl	58.5	0	38.1-99.9		%Rec	1	7/12/2022 5:57:33 PM	68493
Surr: 4-Terphenyl-d14	75.8	0	48-155		%Rec	1	7/12/2022 5:57:33 PM	68493
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	7/7/2022 7:35:00 AM	68493
Acenaphthene	2.2	0.14	0.30		µg/L	1	7/7/2022 7:35:00 AM	68493
Fluorene	2.9	0.095	0.30		µg/L	1	7/7/2022 7:35:00 AM	68493
Phenanthrene	2.5	0.16	0.30		µg/L	1	7/7/2022 7:35:00 AM	68493
Anthracene	0.30	0.14	0.30		µg/L	1	7/7/2022 7:35:00 AM	68493
Fluoranthene	0.22	0.14	0.30	J	µg/L	1	7/7/2022 7:35:00 AM	68493
Pyrene	ND	0.32	1.0		µg/L	1	7/7/2022 7:35:00 AM	68493
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	7/7/2022 7:35:00 AM	68493
Chrysene	ND	0.25	0.30		µg/L	1	7/7/2022 7:35:00 AM	68493
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	7/7/2022 7:35:00 AM	68493
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	7/7/2022 7:35:00 AM	68493

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206G22**
Date Reported: **7/27/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-29-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/29/2022
Lab ID: 2206G22-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	68.3	0	31.6-100		%Rec	1	7/7/2022 7:35:00 AM	68493
Surr: 2-Fluorobiphenyl	45.7	0	26.7-90.1		%Rec	1	7/7/2022 7:35:00 AM	68493
Surr: 4-Terphenyl-d14	67.6	0	72.3-147	S	%Rec	1	7/7/2022 7:35:00 AM	68493

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206G22**
Date Reported: **7/27/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-29-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/29/2022
Lab ID: 2206G22-006D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	5.6	0.016	0.030	*	mg/L	10	7/11/2022 11:56:06 AM	68545
Beryllium	ND	0.00088	0.0020		mg/L	1	7/11/2022 11:54:43 AM	68545
Cadmium	ND	0.0018	0.0020		mg/L	1	7/11/2022 11:54:43 AM	68545
Chromium	ND	0.0020	0.0060		mg/L	1	7/11/2022 11:54:43 AM	68545
Cobalt	0.0039	0.0035	0.0060	J	mg/L	1	7/11/2022 11:54:43 AM	68545
Nickel	0.055	0.0053	0.010		mg/L	1	7/11/2022 11:54:43 AM	68545
Silver	ND	0.0018	0.0050		mg/L	1	7/11/2022 11:54:43 AM	68545
Vanadium	0.0040	0.0035	0.050	J	mg/L	1	7/11/2022 11:54:43 AM	68545
Zinc	0.0060	0.0039	0.010	J	mg/L	1	7/11/2022 11:54:43 AM	68545
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/7/2022 2:31:02 PM	68545
Arsenic	0.0039	0.00013	0.0010		mg/L	1	7/7/2022 2:31:02 PM	68545
Lead	0.00024	0.000061	0.00050	J	mg/L	1	7/7/2022 2:31:02 PM	68545
Selenium	ND	0.00037	0.0010		mg/L	1	7/7/2022 2:31:02 PM	68545
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/8/2022 1:22:20 PM	68622

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206G22**
Date Reported: **7/27/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-29-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/29/2022
Lab ID: 2206G22-006E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	5.0	0.011	0.020	*	mg/L	10	7/8/2022 9:16:51 AM	A89335
Beryllium	ND	0.00088	0.0020		mg/L	1	7/5/2022 2:23:43 PM	A89290
Cadmium	ND	0.00098	0.0020		mg/L	1	7/5/2022 2:23:43 PM	A89290
Chromium	ND	0.0020	0.0060		mg/L	1	7/5/2022 2:23:43 PM	A89290
Cobalt	ND	0.0024	0.0060		mg/L	1	7/5/2022 2:23:43 PM	A89290
Nickel	0.051	0.0033	0.010		mg/L	1	7/5/2022 2:23:43 PM	A89290
Silver	ND	0.0013	0.0050		mg/L	1	7/5/2022 2:23:43 PM	A89290
Vanadium	0.0033	0.0017	0.050	J	mg/L	1	7/5/2022 2:23:43 PM	A89290
Zinc	0.011	0.0032	0.010		mg/L	1	7/5/2022 2:23:43 PM	A89290
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/1/2022 4:58:19 PM	A89215
Arsenic	0.0034	0.00012	0.0010		mg/L	1	7/1/2022 4:58:19 PM	A89215
Lead	ND	0.000057	0.00050		mg/L	1	7/1/2022 4:58:19 PM	A89215
Selenium	ND	0.00034	0.0010		mg/L	1	7/1/2022 4:58:19 PM	A89215
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/8/2022 1:24:30 PM	68622

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206G22**
Date Reported: **7/27/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB-6-29-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/29/2022 9:45:00 AM
Lab ID: 2206G22-007A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	7/8/2022 6:54:00 AM	R89230
Toluene	ND	0.20	1.0		µg/L	1	7/8/2022 6:54:00 AM	R89230
Ethylbenzene	ND	0.21	1.0		µg/L	1	7/8/2022 6:54:00 AM	R89230
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	7/8/2022 6:54:00 AM	R89230
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	7/8/2022 6:54:00 AM	R89230
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	7/8/2022 6:54:00 AM	R89230
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	7/8/2022 6:54:00 AM	R89230
Acetone	ND	2.5	10		µg/L	1	7/8/2022 6:54:00 AM	R89230
Bromomethane	ND	0.85	3.0		µg/L	1	7/8/2022 6:54:00 AM	R89230
2-Butanone	ND	2.0	10		µg/L	1	7/8/2022 6:54:00 AM	R89230
Carbon disulfide	ND	0.59	10		µg/L	1	7/8/2022 6:54:00 AM	R89230
Chlorobenzene	ND	0.16	1.0		µg/L	1	7/8/2022 6:54:00 AM	R89230
Chloroform	ND	0.13	1.0		µg/L	1	7/8/2022 6:54:00 AM	R89230
Chloromethane	ND	0.41	3.0		µg/L	1	7/8/2022 6:54:00 AM	R89230
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	7/8/2022 6:54:00 AM	R89230
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	7/8/2022 6:54:00 AM	R89230
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	7/8/2022 6:54:00 AM	R89230
Isopropylbenzene	ND	0.18	1.0		µg/L	1	7/8/2022 6:54:00 AM	R89230
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	7/8/2022 6:54:00 AM	R89230
Methylene Chloride	ND	0.50	3.0		µg/L	1	7/8/2022 6:54:00 AM	R89230
n-Butylbenzene	ND	0.25	3.0		µg/L	1	7/8/2022 6:54:00 AM	R89230
n-Propylbenzene	ND	0.18	1.0		µg/L	1	7/8/2022 6:54:00 AM	R89230
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	7/8/2022 6:54:00 AM	R89230
Styrene	ND	0.14	1.0		µg/L	1	7/8/2022 6:54:00 AM	R89230
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	7/8/2022 6:54:00 AM	R89230
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	7/8/2022 6:54:00 AM	R89230
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	7/8/2022 6:54:00 AM	R89230
Vinyl chloride	ND	0.32	1.0		µg/L	1	7/8/2022 6:54:00 AM	R89230
Xylenes, Total	ND	0.37	1.5		µg/L	1	7/8/2022 6:54:00 AM	R89230
Surr: 1,2-Dichloroethane-d4	105	0	70-130		%Rec	1	7/8/2022 6:54:00 AM	R89230
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	7/8/2022 6:54:00 AM	R89230
Surr: Dibromofluoromethane	103	0	70-130		%Rec	1	7/8/2022 6:54:00 AM	R89230
Surr: Toluene-d8	95.9	0	70-130		%Rec	1	7/8/2022 6:54:00 AM	R89230

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206G22**
Date Reported: **7/27/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 2nd Qtr
Collection Date:
Lab ID: 2206G22-008A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
Toluene	ND	0.20	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
Ethylbenzene	ND	0.21	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
Naphthalene	ND	0.50	2.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
Acetone	13	2.5	10		µg/L	1	7/9/2022 10:46:00 AM	R89347
Bromobenzene	ND	0.28	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
Bromodichloromethane	ND	0.20	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
Bromoform	ND	0.31	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
Bromomethane	ND	0.85	3.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
2-Butanone	ND	2.0	10		µg/L	1	7/9/2022 10:46:00 AM	R89347
Carbon disulfide	ND	0.59	10		µg/L	1	7/9/2022 10:46:00 AM	R89347
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
Chlorobenzene	ND	0.16	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
Chloroethane	ND	0.38	2.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
Chloroform	ND	0.13	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
Chloromethane	ND	0.41	3.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
4-Chlorotoluene	ND	0.34	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
Dibromochloromethane	ND	0.28	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
Dibromomethane	ND	0.31	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
Dichlorodifluoromethane	ND	0.40	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
1,2-Dichloropropane	ND	0.20	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206G22**
Date Reported: **7/27/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 2nd Qtr
Collection Date:
Lab ID: 2206G22-008A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Hexachlorobutadiene	ND	0.56	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
2-Hexanone	ND	1.8	10		µg/L	1	7/9/2022 10:46:00 AM	R89347
Isopropylbenzene	ND	0.18	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
4-Methyl-2-pentanone	ND	0.88	10		µg/L	1	7/9/2022 10:46:00 AM	R89347
Methylene Chloride	ND	0.50	3.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
n-Butylbenzene	ND	0.25	3.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
n-Propylbenzene	ND	0.18	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
Styrene	ND	0.14	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
trans-1,2-DCE	ND	0.19	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
1,2,3-Trichlorobenzene	ND	0.25	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
1,1,2-Trichloroethane	ND	0.20	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
Trichlorofluoromethane	ND	0.16	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
Vinyl chloride	ND	0.32	1.0		µg/L	1	7/9/2022 10:46:00 AM	R89347
Xylenes, Total	ND	0.37	1.5		µg/L	1	7/9/2022 10:46:00 AM	R89347
Surr: 1,2-Dichloroethane-d4	109	0	70-130		%Rec	1	7/9/2022 10:46:00 AM	R89347
Surr: 4-Bromofluorobenzene	98.7	0	70-130		%Rec	1	7/9/2022 10:46:00 AM	R89347
Surr: Dibromofluoromethane	106	0	70-130		%Rec	1	7/9/2022 10:46:00 AM	R89347
Surr: Toluene-d8	95.3	0	70-130		%Rec	1	7/9/2022 10:46:00 AM	R89347

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206G22**
Date Reported: **7/27/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 2nd Qtr
Collection Date:
Lab ID: 2206G22-008B
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **BRM**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	7/7/2022 12:13:47 AM	68566

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

ANALYTICAL REPORT

July 15, 2022

Hall Environmental Analysis Laboratory

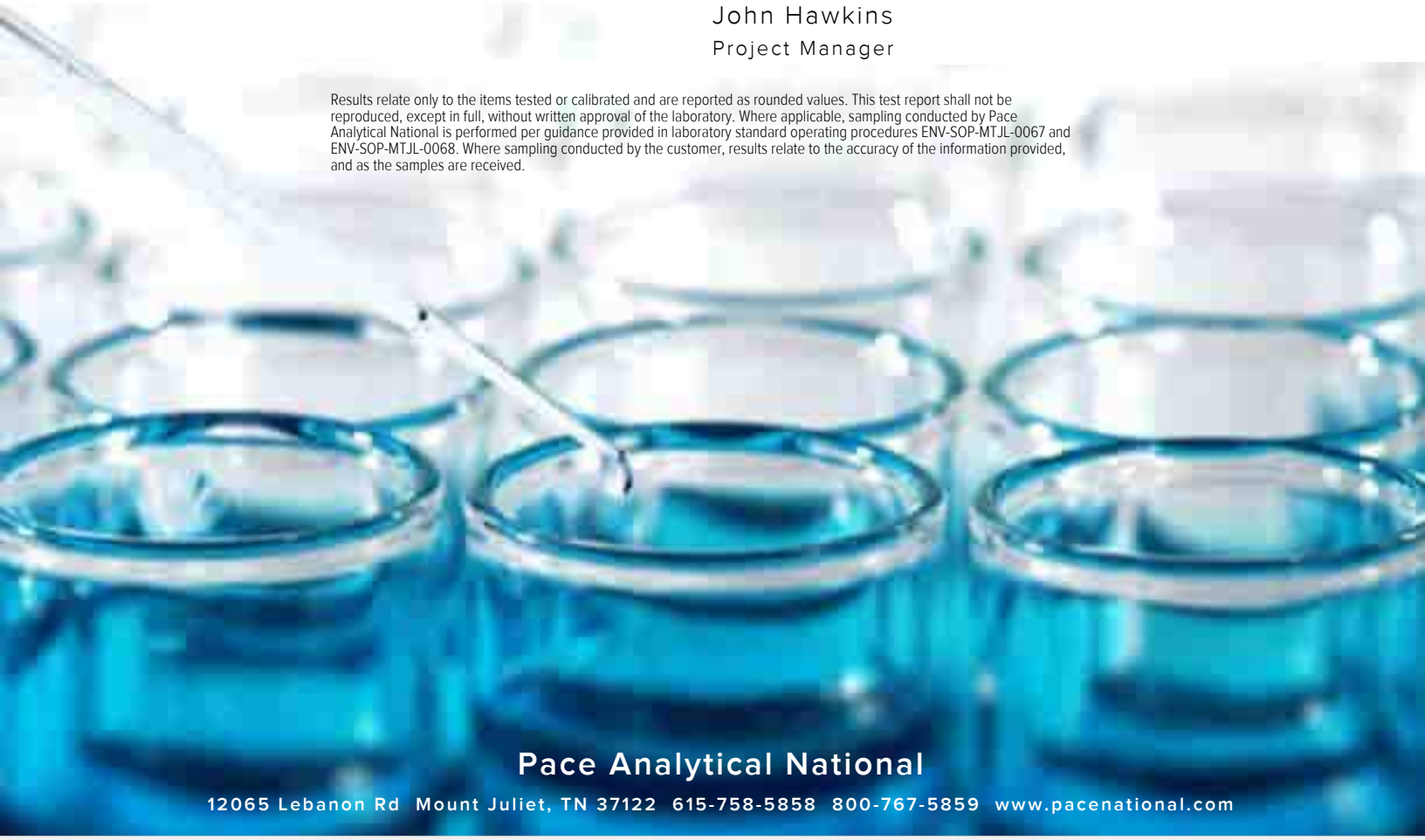
Sample Delivery Group:	L1511782
Samples Received:	07/06/2022
Project Number:	
Description:	

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By:

John Hawkins
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 4

Sr: Sample Results 5

2206G22-001F EB-6-29-22 L1511782-01 5

2206G22-002F MKTF-44 L1511782-02 6

2206G22-003F OW-57 L1511782-03 7

2206G22-004F OW-58 L1511782-04 8

2206G22-005F OW-58A L1511782-05 9

2206G22-006F DUP-6-29-22 L1511782-06 10

Qc: Quality Control Summary 11

Wet Chemistry by Method 4500CN E-2016 11

Gl: Glossary of Terms 13

Al: Accreditations & Locations 14

Sc: Sample Chain of Custody 15

SAMPLE SUMMARY

2206G22-001F EB-6-29-22 L1511782-01 WW

			Collected by	Collected date/time	Received date/time	
				06/29/22 08:00	07/06/22 09:15	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1889913	1	07/06/22 20:55	07/07/22 22:02	CAT	Mt. Juliet, TN

2206G22-002F MKTF-44 L1511782-02 WW

			Collected by	Collected date/time	Received date/time	
				06/29/22 08:30	07/06/22 09:15	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1889913	1	07/06/22 20:55	07/07/22 22:05	CAT	Mt. Juliet, TN

2206G22-003F OW-57 L1511782-03 WW

			Collected by	Collected date/time	Received date/time	
				06/29/22 08:50	07/06/22 09:15	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1893803	1	07/12/22 19:14	07/13/22 10:48	LDT	Mt. Juliet, TN

2206G22-004F OW-58 L1511782-04 WW

			Collected by	Collected date/time	Received date/time	
				06/29/22 09:15	07/06/22 09:15	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1893803	1	07/12/22 19:14	07/13/22 10:54	LDT	Mt. Juliet, TN

2206G22-005F OW-58A L1511782-05 WW

			Collected by	Collected date/time	Received date/time	
				06/29/22 09:45	07/06/22 09:15	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1893803	1	07/12/22 19:14	07/13/22 10:55	LDT	Mt. Juliet, TN

2206G22-006F DUP-6-29-22 L1511782-06 WW

			Collected by	Collected date/time	Received date/time	
				06/29/22 00:00	07/06/22 09:15	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1893803	1	07/12/22 19:14	07/13/22 10:56	LDT	Mt. Juliet, TN

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Received by OCD: 4/21/2023 9:21:57 AM

Collected date/time: 06/29/22 08:00
L1511782

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	07/07/2022 22:02	WG1889913

Released to Imaging: 4/21/2023 9:40:26 AM

Received by OCD: 4/21/2023 9:21:57 AM

Collected date/time: 06/29/22 08:30
L1511782

Wet Chemistry by Method 4500CN E-2016

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Cyanide	ND		0.00500	1	07/07/2022 22:05	WG1889913

Released to Imaging: 4/21/2023 9:40:26 AM

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND	J6 P1	0.00500	1	07/13/2022 10:48	WG1893803

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	07/13/2022 10:54	WG1893803

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.00519		0.00500	1	07/13/2022 10:55	WG1893803

Received by OCD: 4/21/2023 9:21:57 AM

Collected date/time: 06/29/22 00:00
L1511782

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	07/13/2022 10:56	WG1893803

Released to Imaging: 4/21/2023 9:40:26 AM

Method Blank (MB)

(MB) R3812243-1 07/07/22 21:28

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1511095-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1511095-04 07/07/22 21:43 • (DUP) R3812243-6 07/07/22 21:44

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3812243-2 07/07/22 21:29

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.0940	94.0	87.1-120	

L1510887-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1510887-03 07/07/22 21:36 • (MS) R3812243-4 07/07/22 21:37 • (MSD) R3812243-5 07/07/22 21:38

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0974	0.0954	97.4	95.4	1	90.0-110			2.07	20

Method Blank (MB)

(MB) R3814178-1 07/13/22 10:39

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1511782-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1511782-03 07/13/22 10:48 • (DUP) R3814178-3 07/13/22 10:51

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	53.3	P1	20

L1511925-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1511925-02 07/13/22 10:58 • (DUP) R3814178-6 07/13/22 10:59

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	0.00605	ND	1	200	P1	20

Laboratory Control Sample (LCS)

(LCS) R3814178-2 07/13/22 10:40

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.0936	93.6	87.1-120	

L1511782-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1511782-03 07/13/22 10:48 • (MS) R3814178-4 07/13/22 10:52 • (MSD) R3814178-5 07/13/22 10:53

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0948	0.0919	92.8	89.9	1	90.0-110		J6	3.11	20

L1511925-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1511925-02 07/13/22 10:58 • (MS) R3814178-7 07/13/22 11:00 • (MSD) R3814178-8 07/13/22 11:03

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	0.00605	0.0971	0.0935	91.1	87.5	1	90.0-110		J6	3.78	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Received by OCD: 4/21/2023 9:21:57 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

E153

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

SUB CONTRATOR: Pace TN	COMPANY: PACE TN	PHONE: (800) 767-5859	FAX: (615) 758-5859
ADDRESS: 12065 Lebanon Rd		ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: Mt. Juliet, TN 37122			

4511782

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS	
1	2206G22-001F	EB-6-29-22	500AMBHDP F-NAOH	Groundwater	6/29/2022 8:00:00 AM	1	Total Cyanide J and MDL	-01
2	2206G22-002F	MKTF-44	500AMBHDP F-NAOH	Groundwater	6/29/2022 8:30:00 AM	1	Total Cyanide J and MDL	-02
3	2206G22-003F	OW-57	500AMBHDP F-NAOH	Groundwater	6/29/2022 8:50:00 AM	1	Total Cyanide J and MDL	-03
4	2206G22-004F	OW-58	500AMBHDP F-NAOH	Groundwater	6/29/2022 9:15:00 AM	1	Total Cyanide J and MDL	-04
5	2206G22-005F	OW-58A	500AMBHDP F-NAOH	Groundwater	6/29/2022 9:45:00 AM	1	Total Cyanide J and MDL	-05
6	2206G22-006F	DUP-6-29-22	500AMBHDP F-NAOH	Groundwater	6/29/2022	1	Total Cyanide J and MDL	-06

Sample Receipt Checklist

COC Seal Present/Intact: ✓Y N
COC Signed/Accurate: ✓Y N
Bottles arrive intact: ✓Y N
Correct bottles used: ✓Y N
Sufficient volume sent: ✓Y N
RAD Screen <0.5 mR/hr: ✓Y N

If Applicable
VOA Zero Headspace: Y ✓N
Pres.Correct/Check: ✓Y N

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By: CMC	Date: 7/1/2022	Time: 7:26 AM	Received By: Sierra E Blue	Date: 7/6/22	Time: 9:15
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ✓ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY
Temp of samples DRAFT •9 °C Attempt to Cool ?
Comments:

Released to Imaging: 4/21/2023 9:40:26 AM

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206G22**

27-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **MB-68545** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**

Client ID: **PBW** Batch ID: **68545** RunNo: **89314**

Prep Date: **7/5/2022** Analysis Date: **7/7/2022** SeqNo: **3176277** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LCSLL-68545** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**

Client ID: **BatchQC** Batch ID: **68545** RunNo: **89314**

Prep Date: **7/5/2022** Analysis Date: **7/7/2022** SeqNo: **3176278** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0022	0.0030	0.002000	0	108	50	150			J
Beryllium	0.0018	0.0020	0.002000	0	90.2	50	150			J
Cadmium	0.0021	0.0020	0.002000	0	104	50	150			
Chromium	0.0058	0.0060	0.006000	0	97.2	50	150			J
Cobalt	0.0055	0.0060	0.006000	0	91.2	50	150			J
Nickel	0.0066	0.010	0.005000	0	132	50	150			J
Silver	0.0049	0.0050	0.005000	0	98.7	50	150			J
Vanadium	0.0094	0.050	0.01000	0	93.9	50	150			J
Zinc	0.012	0.010	0.01000	0	119	50	150			

Sample ID: **LCS-68545** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**

Client ID: **LCSW** Batch ID: **68545** RunNo: **89314**

Prep Date: **7/5/2022** Analysis Date: **7/7/2022** SeqNo: **3176279** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0030	0.5000	0	95.4	85	115			
Beryllium	0.50	0.0020	0.5000	0	100	85	115			
Cadmium	0.47	0.0020	0.5000	0	94.7	85	115			
Chromium	0.49	0.0060	0.5000	0	97.6	85	115			
Cobalt	0.47	0.0060	0.5000	0	93.9	85	115			
Nickel	0.46	0.010	0.5000	0	92.5	85	115			
Silver	0.096	0.0050	0.1000	0	96.4	85	115			
Vanadium	0.49	0.050	0.5000	0	98.3	85	115			
Zinc	0.45	0.010	0.5000	0	90.8	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206G22**

27-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **MB-C**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **C89417**	RunNo: **89417**
Prep Date:	Analysis Date: **7/12/2022**	SeqNo: **3181584** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								

Sample ID: **LLLCS-C**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **C89417**	RunNo: **89417**
Prep Date:	Analysis Date: **7/12/2022**	SeqNo: **3181585** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0012	0.0030	0.002000	0	60.7	50	150			J

Sample ID: **LCS-C**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **C89417**	RunNo: **89417**
Prep Date:	Analysis Date: **7/12/2022**	SeqNo: **3181586** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0030	0.5000	0	100	85	115			

Sample ID: **2206G22-001DMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **EB-6-29-22**	Batch ID: **68545**	RunNo: **89420**
Prep Date: **7/5/2022**	Analysis Date: **7/11/2022**	SeqNo: **3183471** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.55	0.0030	0.5000	0	110	70	130			
Beryllium	0.55	0.0020	0.5000	0	110	70	130			
Chromium	0.55	0.0060	0.5000	0	109	70	130			
Cobalt	0.53	0.0060	0.5000	0	106	70	130			
Nickel	0.52	0.010	0.5000	0	105	70	130			
Silver	0.10	0.0050	0.1000	0	102	70	130			
Vanadium	0.53	0.050	0.5000	0	105	70	130			
Zinc	0.54	0.010	0.5000	0	107	70	130			

Sample ID: **2206G22-001DMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Metals**
Client ID: **EB-6-29-22**	Batch ID: **68545**	RunNo: **89420**
Prep Date: **7/5/2022**	Analysis Date: **7/11/2022**	SeqNo: **3183475** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.53	0.0030	0.5000	0	107	70	130	3.00	20	
Beryllium	0.54	0.0020	0.5000	0	109	70	130	1.40	20	
Chromium	0.53	0.0060	0.5000	0	107	70	130	2.66	20	
Cobalt	0.52	0.0060	0.5000	0	104	70	130	2.38	20	
Nickel	0.50	0.010	0.5000	0	101	70	130	3.44	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206G22**

27-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **2206G22-001DMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Metals**
Client ID: **EB-6-29-22**	Batch ID: **68545**	RunNo: **89420**
Prep Date: **7/5/2022**	Analysis Date: **7/11/2022**	SeqNo: **3183475** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.10	0.0050	0.1000	0	100	70	130	2.03	20	
Vanadium	0.53	0.050	0.5000	0	105	70	130	0.0403	20	
Zinc	0.51	0.010	0.5000	0	103	70	130	4.43	20	

Sample ID: **2206G22-002DMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **MKTF-44**	Batch ID: **68545**	RunNo: **89420**
Prep Date: **7/5/2022**	Analysis Date: **7/11/2022**	SeqNo: **3183477** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.77	0.0030	0.5000	0.2950	94.0	70	130			
Beryllium	0.49	0.0020	0.5000	0	98.9	70	130			
Cadmium	0.48	0.0020	0.5000	0	95.9	70	130			
Chromium	0.51	0.0060	0.5000	0.01938	97.6	70	130			
Cobalt	0.48	0.0060	0.5000	0.008123	94.9	70	130			
Nickel	0.46	0.010	0.5000	0.008079	91.3	70	130			
Silver	0.092	0.0050	0.1000	0	92.2	70	130			
Vanadium	0.69	0.050	0.5000	0.2122	96.1	70	130			
Zinc	0.58	0.010	0.5000	0.09858	95.9	70	130			

Sample ID: **2206G22-002DMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Metals**
Client ID: **MKTF-44**	Batch ID: **68545**	RunNo: **89420**
Prep Date: **7/5/2022**	Analysis Date: **7/11/2022**	SeqNo: **3183478** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.75	0.0030	0.5000	0.2950	91.7	70	130	1.52	20	
Beryllium	0.48	0.0020	0.5000	0	96.0	70	130	3.00	20	
Cadmium	0.48	0.0020	0.5000	0	96.4	70	130	0.472	20	
Chromium	0.51	0.0060	0.5000	0.01938	98.1	70	130	0.424	20	
Cobalt	0.48	0.0060	0.5000	0.008123	94.4	70	130	0.481	20	
Nickel	0.46	0.010	0.5000	0.008079	90.6	70	130	0.733	20	
Silver	0.092	0.0050	0.1000	0	92.2	70	130	0.0202	20	
Vanadium	0.68	0.050	0.5000	0.2122	92.9	70	130	2.29	20	
Zinc	0.58	0.010	0.5000	0.09858	95.9	70	130	0.0337	20	

Sample ID: **MB-B**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **B89506**	RunNo: **89506**
Prep Date:	Analysis Date: **7/14/2022**	SeqNo: **3185688** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206G22**

27-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **LLLCS-B**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **B89506**	RunNo: **89506**
Prep Date:	Analysis Date: **7/14/2022**	SeqNo: **3185689** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0014	0.0030	0.002000	0	71.4	50	150			J

Sample ID: **LCS-B**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **B89506**	RunNo: **89506**
Prep Date:	Analysis Date: **7/14/2022**	SeqNo: **3185690** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0030	0.5000	0	99.0	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206G22**

27-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **MB-A**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A89290**	RunNo: **89290**
Prep Date:	Analysis Date: **7/5/2022**	SeqNo: **3175457** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS-A**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A89290**	RunNo: **89290**
Prep Date:	Analysis Date: **7/5/2022**	SeqNo: **3175458** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.0021	0.0020	0.002000	0	107	50	150			
Cadmium	0.0020	0.0020	0.002000	0	100	50	150			
Chromium	0.0051	0.0060	0.006000	0	85.8	50	150			J
Cobalt	0.0064	0.0060	0.006000	0	107	50	150			
Nickel	0.0031	0.010	0.005000	0	61.8	50	150			J
Silver	0.0052	0.0050	0.005000	0	104	50	150			
Vanadium	0.010	0.050	0.01000	0	103	50	150			J
Zinc	0.010	0.010	0.01000	0	105	50	150			

Sample ID: **LCS-A**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A89290**	RunNo: **89290**
Prep Date:	Analysis Date: **7/5/2022**	SeqNo: **3175459** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.54	0.0020	0.5000	0	108	85	115			
Cadmium	0.52	0.0020	0.5000	0	103	85	115			
Chromium	0.52	0.0060	0.5000	0	104	85	115			
Cobalt	0.51	0.0060	0.5000	0	102	85	115			
Nickel	0.50	0.010	0.5000	0	101	85	115			
Silver	0.11	0.0050	0.1000	0	105	85	115			
Vanadium	0.53	0.050	0.5000	0	105	85	115			
Zinc	0.53	0.010	0.5000	0	105	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206G22**

27-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **MB-A**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A89335**	RunNo: **89335**
Prep Date:	Analysis Date: **7/8/2022**	SeqNo: **3177557** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								

Sample ID: **LLLCS-A**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A89335**	RunNo: **89335**
Prep Date:	Analysis Date: **7/8/2022**	SeqNo: **3177558** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0022	0.0020	0.002000	0	109	50	150			

Sample ID: **LCS-A**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A89335**	RunNo: **89335**
Prep Date:	Analysis Date: **7/8/2022**	SeqNo: **3177559** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0020	0.5000	0	99.4	85	115			

Sample ID: **2206G22-005EMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **OW-58A**	Batch ID: **C89417**	RunNo: **89417**
Prep Date:	Analysis Date: **7/12/2022**	SeqNo: **3181792** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	3.6	0.010	2.500	1.000	106	70	130			

Sample ID: **2206G22-005EMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **OW-58A**	Batch ID: **C89417**	RunNo: **89417**
Prep Date:	Analysis Date: **7/12/2022**	SeqNo: **3181793** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	3.6	0.010	2.500	1.000	104	70	130	1.44	20	

Sample ID: **MB-C**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **C89417**	RunNo: **89417**
Prep Date:	Analysis Date: **7/12/2022**	SeqNo: **3181994** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206G22**
27-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Qtr

Sample ID: **LLLCS-C**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **C89417**	RunNo: **89417**
Prep Date:	Analysis Date: **7/12/2022**	SeqNo: **3181995** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0012	0.0020	0.002000	0	60.7	50	150			J

Sample ID: **LCS-C**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **C89417**	RunNo: **89417**
Prep Date:	Analysis Date: **7/12/2022**	SeqNo: **3181996** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0020	0.5000	0	100	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206G22**

27-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **MB-68545**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **68545**	RunNo: **89286**
Prep Date: **7/5/2022**	Analysis Date: **7/7/2022**	SeqNo: **3175614** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **MSLCSLL-68545**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **68545**	RunNo: **89286**
Prep Date: **7/5/2022**	Analysis Date: **7/7/2022**	SeqNo: **3175615** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0011	0.0010	0.001000	0	106	50	150			
Arsenic	0.0010	0.0010	0.001000	0	103	50	150			
Lead	0.00050	0.00050	0.0005000	0	99.1	50	150			J
Selenium	0.00096	0.0010	0.001000	0	96.5	50	150			J

Sample ID: **MSLCS-68545**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **68545**	RunNo: **89286**
Prep Date: **7/5/2022**	Analysis Date: **7/7/2022**	SeqNo: **3175616** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	94.5	85	115			
Arsenic	0.025	0.0010	0.02500	0	101	85	115			
Lead	0.012	0.00050	0.01250	0	97.6	85	115			
Selenium	0.022	0.0010	0.02500	0	89.4	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206G22**

27-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A89215**	RunNo: **89215**
Prep Date:	Analysis Date: **7/1/2022**	SeqNo: **3171349** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A89215**	RunNo: **89215**
Prep Date:	Analysis Date: **7/1/2022**	SeqNo: **3171350** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0010	0.0010	0.001000	0	101	50	150			
Arsenic	0.00099	0.0010	0.001000	0	98.9	50	150			J
Lead	0.00054	0.00050	0.0005000	0	107	50	150			
Selenium	0.0013	0.0010	0.001000	0	127	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A89215**	RunNo: **89215**
Prep Date:	Analysis Date: **7/1/2022**	SeqNo: **3171351** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.7	85	115			
Arsenic	0.025	0.0010	0.02500	0	100	85	115			
Lead	0.012	0.00050	0.01250	0	99.4	85	115			
Selenium	0.026	0.0010	0.02500	0	103	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206G22**

27-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **MB-68622**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW**	Batch ID: **68622**	RunNo: **89336**
Prep Date: **7/7/2022**	Analysis Date: **7/8/2022**	SeqNo: **3177690** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-68622**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC**	Batch ID: **68622**	RunNo: **89336**
Prep Date: **7/7/2022**	Analysis Date: **7/8/2022**	SeqNo: **3177691** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00012	0.00020	0.0001500	0	78.0	50	150			J

Sample ID: **LCS-68622**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW**	Batch ID: **68622**	RunNo: **89336**
Prep Date: **7/7/2022**	Analysis Date: **7/8/2022**	SeqNo: **3177692** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.00020	0.005000	0	100	85	115			

Sample ID: **2206G22-005DMS**	SampType: **MS**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **OW-58A**	Batch ID: **68622**	RunNo: **89336**
Prep Date: **7/7/2022**	Analysis Date: **7/8/2022**	SeqNo: **3177751** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0043	0.0010	0.005000	0	85.8	75	125			

Sample ID: **2206G22-005DMSD**	SampType: **MSD**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **OW-58A**	Batch ID: **68622**	RunNo: **89336**
Prep Date: **7/7/2022**	Analysis Date: **7/8/2022**	SeqNo: **3177752** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0043	0.0010	0.005000	0	85.8	75	125	0.0543	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206G22**

27-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **MB-68565**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **68565**	RunNo: **89272**
Prep Date: **7/6/2022**	Analysis Date: **7/6/2022**	SeqNo: **3174554** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-68565**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW**	Batch ID: **68565**	RunNo: **89272**
Prep Date: **7/6/2022**	Analysis Date: **7/6/2022**	SeqNo: **3174555** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.10	0.010	0.1000	0	101	70	130			

Sample ID: **LCSD-68566**	SampType: **LCSD**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSS02**	Batch ID: **68566**	RunNo: **89272**
Prep Date: **7/6/2022**	Analysis Date: **7/6/2022**	SeqNo: **3174557** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.076	0.010	0.1000	0	76.3	70	130	10.9	20	

Sample ID: **MB-68566**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **68566**	RunNo: **89289**
Prep Date: **7/6/2022**	Analysis Date: **7/7/2022**	SeqNo: **3175380** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-68566**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW**	Batch ID: **68566**	RunNo: **89289**
Prep Date: **7/6/2022**	Analysis Date: **7/7/2022**	SeqNo: **3175381** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.10	0.010	0.1000	0	99.7	70	130			

Sample ID: **MB-68566**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **68566**	RunNo: **89289**
Prep Date: **7/6/2022**	Analysis Date: **7/7/2022**	SeqNo: **3175387** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206G22**

27-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **MB-68565**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **68565**	RunNo: **89272**
Prep Date: **7/6/2022**	Analysis Date: **7/6/2022**	SeqNo: **3175397** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206G22**

27-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **MB-68495**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **PBW**	Batch ID: **68495**	RunNo: **89367**
Prep Date: **7/1/2022**	Analysis Date: **7/11/2022**	SeqNo: **3179031** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.023	0.064								J
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.038		0.03750		101	42.2	138			

Sample ID: **LCS-68495**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSW**	Batch ID: **68495**	RunNo: **89367**
Prep Date: **7/1/2022**	Analysis Date: **7/11/2022**	SeqNo: **3180276** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.14	0.064	0.1875	0	75.5	31.7	75.4			S
Surr: DNOP	0.020		0.01875		107	42.2	138			

Sample ID: **LCSD-68495**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02**	Batch ID: **68495**	RunNo: **89367**
Prep Date: **7/1/2022**	Analysis Date: **7/11/2022**	SeqNo: **3180277** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.15	0.064	0.1875	0	78.6	31.7	75.4	3.96	20	S
Surr: DNOP	0.019		0.01875		103	42.2	138	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206G22**

27-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **G89271**	RunNo: **89271**
Prep Date:	Analysis Date: **7/6/2022**	SeqNo: **3174470** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	20		20.00		102	70	130			

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **G89271**	RunNo: **89271**
Prep Date:	Analysis Date: **7/6/2022**	SeqNo: **3174471** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.52	0.050	0.5000	0	103	80	120			
Surr: BFB	40		20.00		202	70	130			S

Sample ID: **2206g22-002ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **MKTF-44**	Batch ID: **G89271**	RunNo: **89271**
Prep Date:	Analysis Date: **7/6/2022**	SeqNo: **3174474** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.54	0.050	0.5000	0	108	70	130			
Surr: BFB	43		20.00		216	70	130			S

Sample ID: **2206g22-002amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **MKTF-44**	Batch ID: **G89271**	RunNo: **89271**
Prep Date:	Analysis Date: **7/6/2022**	SeqNo: **3174475** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.54	0.050	0.5000	0	107	70	130	0.335	20	
Surr: BFB	43		20.00		215	70	130	0	0	S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206G22**

27-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **100ng lcs 2**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R89230**	RunNo: **89230**
Prep Date:	Analysis Date: **7/8/2022**	SeqNo: **3176866** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	97.1	70	130			
Toluene	20	1.0	20.00	0	97.7	70	130			
Chlorobenzene	20	1.0	20.00	0	101	70	130			
1,1-Dichloroethene	17	1.0	20.00	0	85.8	70	130			
Trichloroethene (TCE)	19	1.0	20.00	0	92.6	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		104	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	9.8		10.00		98.3	70	130			

Sample ID: **mb 2**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R89230**	RunNo: **89230**
Prep Date:	Analysis Date: **7/8/2022**	SeqNo: **3176867** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206G22**

27-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **mb 2**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R89230**	RunNo: **89230**
Prep Date:	Analysis Date: **7/8/2022**	SeqNo: **3176867** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	9.8		10.00		97.6	70	130			

Sample ID: **2206G22-002AMS**	SampType: **MS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **MKTF-44**	Batch ID: **R89230**	RunNo: **89230**
Prep Date:	Analysis Date: **7/8/2022**	SeqNo: **3176870** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	99.9	70	130			
Toluene	20	1.0	20.00	0	99.9	70	130			
Chlorobenzene	20	1.0	20.00	0	102	70	130			
1,1-Dichloroethene	18	1.0	20.00	0	90.7	70	130			
Trichloroethene (TCE)	19	1.0	20.00	0	96.3	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		105	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		100	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	9.6		10.00		96.4	70	130			

Sample ID: **2206G22-002AMSD**	SampType: **MSD**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **MKTF-44**	Batch ID: **R89230**	RunNo: **89230**
Prep Date:	Analysis Date: **7/8/2022**	SeqNo: **3176871** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	97.8	70	130	2.14	20	
Toluene	19	1.0	20.00	0	96.7	70	130	3.25	20	
Chlorobenzene	20	1.0	20.00	0	100	70	130	1.54	20	
1,1-Dichloroethene	17	1.0	20.00	0	86.0	70	130	5.28	20	
Trichloroethene (TCE)	19	1.0	20.00	0	93.1	70	130	3.35	20	
Surr: 1,2-Dichloroethane-d4	10		10.00		104	70	130	0	0	
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130	0	0	
Surr: Dibromofluoromethane	10		10.00		102	70	130	0	0	
Surr: Toluene-d8	9.6		10.00		96.4	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206G22**

27-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R89347**	RunNo: **89347**
Prep Date:	Analysis Date: **7/8/2022**	SeqNo: **3178063** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	99.8	70	130			
Toluene	20	1.0	20.00	0	99.0	70	130			
Chlorobenzene	20	1.0	20.00	0	100	70	130			
1,1-Dichloroethene	18	1.0	20.00	0	90.3	70	130			
Trichloroethene (TCE)	19	1.0	20.00	0	95.0	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		108	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	10		10.00		103	70	130			
Surr: Toluene-d8	9.7		10.00		97.3	70	130			

Sample ID: **100ng lcs 2**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R89347**	RunNo: **89347**
Prep Date:	Analysis Date: **7/8/2022**	SeqNo: **3178064** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	98.2	70	130			
Toluene	20	1.0	20.00	0	98.3	70	130			
Chlorobenzene	20	1.0	20.00	0	101	70	130			
1,1-Dichloroethene	17	1.0	20.00	0	87.2	70	130			
Trichloroethene (TCE)	19	1.0	20.00	0	93.5	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	9.8		10.00		97.9	70	130			

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R89347**	RunNo: **89347**
Prep Date:	Analysis Date: **7/8/2022**	SeqNo: **3178065** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206G22**

27-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R89347**	RunNo: **89347**
Prep Date:	Analysis Date: **7/8/2022**	SeqNo: **3178065** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206G22**

27-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R89347**	RunNo: **89347**
Prep Date:	Analysis Date: **7/8/2022**	SeqNo: **3178065** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		110	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	11		10.00		106	70	130			
Surr: Toluene-d8	9.6		10.00		96.0	70	130			

Sample ID: **mb 2**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R89347**	RunNo: **89347**
Prep Date:	Analysis Date: **7/8/2022**	SeqNo: **3178066** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206G22**

27-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **mb 2**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R89347**	RunNo: **89347**
Prep Date:	Analysis Date: **7/8/2022**	SeqNo: **3178066** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206G22**

27-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **mb 2**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R89347**	RunNo: **89347**
Prep Date:	Analysis Date: **7/8/2022**	SeqNo: **3178066** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		100	70	130			
Surr: Dibromofluoromethane	10		10.00		103	70	130			
Surr: Toluene-d8	9.7		10.00		96.5	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206G22**

27-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **MB-68493**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **68493**	RunNo: **89329**
Prep Date: **7/1/2022**	Analysis Date: **7/8/2022**	SeqNo: **3179690** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Anthracene	ND	10								
Benz(a)anthracene	ND	5.0								
Benzo(b)fluoranthene	ND	10								
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	10								
2,4-Dinitrophenol	ND	20								
Fluoranthene	ND	10								
Fluorene	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
1-Methylnaphthalene	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
Naphthalene	ND	5.0								
Phenanthrene	ND	10								
Phenol	ND	20								
Pyrene	ND	10								
Pyridine	ND	40								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	43		200.0		21.7	29.4	87.7			S
Surr: Phenol-d5	33		200.0		16.7	28.5	64.7			S
Surr: 2,4,6-Tribromophenol	64		200.0		32.2	18.6	129			
Surr: Nitrobenzene-d5	26		100.0		26.2	36.9	103			S
Surr: 2-Fluorobiphenyl	28		100.0		27.6	38.1	99.9			S
Surr: 4-Terphenyl-d14	52		100.0		51.7	48	155			

Sample ID: **LCS-68493**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **68493**	RunNo: **89329**
Prep Date: **7/1/2022**	Analysis Date: **7/8/2022**	SeqNo: **3179691** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206G22**

27-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **LCS-68493**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **68493**	RunNo: **89329**
Prep Date: **7/1/2022**	Analysis Date: **7/8/2022**	SeqNo: **3179691** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	63	10	100.0	0	63.3	21.3	104			
1,4-Dichlorobenzene	55	5.0	100.0	0	54.5	15	89.8			
Phenol	83	20	200.0	0	41.5	17	61.1			
Pyrene	75	10	100.0	0	75.1	61	123			
Surr: 2-Fluorophenol	100		200.0		51.7	29.4	87.7			
Surr: Phenol-d5	77		200.0		38.7	28.5	64.7			
Surr: 2,4,6-Tribromophenol	120		200.0		59.8	18.6	129			
Surr: Nitrobenzene-d5	67		100.0		67.4	36.9	103			
Surr: 2-Fluorobiphenyl	64		100.0		63.8	38.1	99.9			
Surr: 4-Terphenyl-d14	78		100.0		77.6	48	155			

Sample ID: **LCSD-68493**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **68493**	RunNo: **89329**
Prep Date: **7/1/2022**	Analysis Date: **7/8/2022**	SeqNo: **3179692** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	37	10	100.0	0	36.8	21.3	104	53.0	45.3	R
1,4-Dichlorobenzene	33	5.0	100.0	0	32.9	15	89.8	49.3	39.6	R
Phenol	47	20	200.0	0	23.4	17	61.1	55.7	42.5	R
Pyrene	55	10	100.0	0	55.4	61	123	30.2	11.8	RS
Surr: 2-Fluorophenol	60		200.0		29.9	29.4	87.7	0	0	
Surr: Phenol-d5	44		200.0		21.9	28.5	64.7	0	0	S
Surr: 2,4,6-Tribromophenol	88		200.0		44.2	18.6	129	0	0	
Surr: Nitrobenzene-d5	39		100.0		39.3	36.9	103	0	0	
Surr: 2-Fluorobiphenyl	36		100.0		36.5	38.1	99.9	0	0	S
Surr: 4-Terphenyl-d14	60		100.0		60.0	48	155	0	0	

Sample ID: **MB-68493**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **68493**	RunNo: **89386**
Prep Date: **7/1/2022**	Analysis Date: **7/12/2022**	SeqNo: **3179969** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Anthracene	ND	10								
Benz(a)anthracene	ND	5.0								
Benzo(b)fluoranthene	ND	10								
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206G22**

27-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **MB-68493**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **68493**	RunNo: **89386**
Prep Date: **7/1/2022**	Analysis Date: **7/12/2022**	SeqNo: **3179969** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	10								
2,4-Dinitrophenol	ND	20								
Fluoranthene	ND	10								
Fluorene	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
1-Methylnaphthalene	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
Naphthalene	ND	5.0								
Phenanthrene	ND	10								
Phenol	ND	20								
Pyrene	ND	10								
Pyridine	ND	40								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	41		200.0		20.7	29.4	87.7			S
Surr: Phenol-d5	33		200.0		16.3	28.5	64.7			S
Surr: 2,4,6-Tribromophenol	65		200.0		32.4	18.6	129			
Surr: Nitrobenzene-d5	28		100.0		28.0	36.9	103			S
Surr: 2-Fluorobiphenyl	27		100.0		26.9	38.1	99.9			S
Surr: 4-Terphenyl-d14	53		100.0		52.6	48	155			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206G22**

27-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **mb-68493**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **68493**	RunNo: **89275**
Prep Date: **7/1/2022**	Analysis Date: **7/6/2022**	SeqNo: **3174754** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.30								
1-Methylnaphthalene	ND	0.30								
2-Methylnaphthalene	ND	0.30								
Acenaphthene	ND	0.30								
Fluorene	ND	0.30								
Phenanthrene	ND	0.30								
Anthracene	ND	0.30								
Fluoranthene	ND	0.30								
Pyrene	ND	1.0								
Benz(a)anthracene	ND	0.30								
Chrysene	ND	0.30								
Benzo(b)fluoranthene	ND	0.30								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	33		100.0		33.4	31.6	100			
Surr: 2,4,6-Tribromophenol	73		200.0		36.7	22	101			
Surr: 2-Fluorobiphenyl	38		100.0		38.0	26.7	90.1			
Surr: 4-Terphenyl-d14	81		100.0		80.5	72.3	147			

Sample ID: **lcs-68493 lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **68493**	RunNo: **89275**
Prep Date: **7/1/2022**	Analysis Date: **7/7/2022**	SeqNo: **3174755** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.98	0.10	2.000	0	49.0	20.2	48.4			S
Naphthalene	1.1	0.30	2.000	0	53.0	21.3	79.9			
1-Methylnaphthalene	1.0	0.30	2.000	0	51.0	22.2	80.3			
2-Methylnaphthalene	0.94	0.30	2.000	0	47.0	20.6	80.1			
Acenaphthene	1.3	0.30	2.000	0	66.0	29.8	82.7			
Fluorene	1.5	0.30	2.000	0	75.0	33.3	86			
Phenanthrene	1.7	0.30	2.000	0	85.0	38.2	93.9			
Anthracene	1.7	0.30	2.000	0	86.0	41.1	95.6			
Fluoranthene	2.0	0.30	2.000	0	98.0	52.9	123			
Pyrene	1.7	1.0	2.000	0	87.0	51	113			
Benz(a)anthracene	2.0	0.30	2.000	0	102	51	147			
Chrysene	1.8	0.30	2.000	0	89.0	55.3	115			
Benzo(b)fluoranthene	1.9	0.30	2.000	0	96.0	44.4	136			
Indeno(1,2,3-cd)pyrene	2.1	0.30	2.000	0	104	31.4	165			
Surr: Nitrobenzene-d5	78		100.0		78.0	31.6	100			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206G22**

27-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **lcs-68493 lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **68493**	RunNo: **89275**
Prep Date: **7/1/2022**	Analysis Date: **7/7/2022**	SeqNo: **3174755** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	97		200.0		48.5	22	101			
Surr: 2-Fluorobiphenyl	72		100.0		71.9	26.7	90.1			
Surr: 4-Terphenyl-d14	83		100.0		83.1	72.3	147			

Sample ID: **lcsd-68493 lf**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02**	Batch ID: **68493**	RunNo: **89275**
Prep Date: **7/1/2022**	Analysis Date: **7/7/2022**	SeqNo: **3174756** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.42	0.10	2.000	0	21.0	20.2	48.4	86.5	30.1	R
Naphthalene	0.60	0.30	2.000	0	30.0	21.3	79.9	87.9	25.6	R
1-Methylnaphthalene	0.64	0.30	2.000	0	32.0	22.2	80.3	80.4	25	R
2-Methylnaphthalene	0.66	0.30	2.000	0	33.0	20.6	80.1	76.6	25	R
Acenaphthene	0.70	0.30	2.000	0	35.0	29.8	82.7	80.3	27.8	R
Fluorene	0.94	0.30	2.000	0	47.0	33.3	86	56.5	26.4	R
Phenanthrene	1.3	0.30	2.000	0	65.0	38.2	93.9	33.3	27.9	R
Anthracene	1.7	0.30	2.000	0	85.0	41.1	95.6	4.60	25.6	
Fluoranthene	2.2	0.30	2.000	0	108	52.9	123	8.70	22.8	
Pyrene	1.7	1.0	2.000	0	87.0	51	113	2.33	20	
Benz(a)anthracene	2.1	0.30	2.000	0	103	51	147	6.00	24.1	
Chrysene	1.2	0.30	2.000	0	62.0	55.3	115	34.7	20	R
Benzo(b)fluoranthene	1.5	0.30	2.000	0	77.0	44.4	136	13.3	24.5	
Indeno(1,2,3-cd)pyrene	2.1	0.30	2.000	0	107	31.4	165	17.3	21.1	
Surr: Nitrobenzene-d5	35		100.0		35.0	31.6	100	0	0	
Surr: 2,4,6-Tribromophenol	80		200.0		39.9	22	101	0	0	
Surr: 2-Fluorobiphenyl	34		100.0		33.9	26.7	90.1	0	0	
Surr: 4-Terphenyl-d14	57		100.0		56.5	72.3	147	0	0	S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **Marathon** Work Order Number: **2206G22** RcptNo: 1

Received By: **Cheyenne Cason** **6/30/2022 7:30:00 AM** Cheyenne

Completed By: **Cheyenne Cason** **6/30/2022 8:08:37 AM** Cheyenne

Reviewed By: KR 6.30.22

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preserved added to bottles? Yes ☑ No ~~☑~~ DAD 6.30.22 NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☑ No ☐ NA ☐
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: 12.6 (<2 or >12 unless noted)
Adjusted? YES
Checked by: DAD 6/30/22

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

16. Additional remarks: For metals analysis added ~0.5mL HNO_3 to sample 005D and ~1.0 mL HNO_3 to 003D For pH <2.. DAD 6/30/22

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.6	Good	Not Present			
2	1.3	Good	Not Present			
3	2.3	Good	Not Present			

Released to Imaging: 4/21/2023 9:40:26 AM
Received by OCD: 4/21/2023 9:21:57 AM

Chain of Custody Record

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Client: Marathon Gallup Refinery	X Standard Rush
Mailing Address: 92 Giant Crossing Road	Project Name: **2022 GW Sampling 2nd Quarter**
Jamestown, NM,87347	Project #: **697-080-001**
Phone #: 808-640-1823	
Email or Fax#:	Project Manager: Lesli Alexander/Mackensie Swift
QA/QC Package: X Standard ☐ Level 4 (Full Validation)	
Accreditation: ☐ Az Compliance ☐ NELAC ☐ Other	Sampler:
EDD (Type)	On Ice: ☒ Yes ☐ No
	# of Coolers: 3 3.6 - 0 = 3.6
	Cooler Temp(including CF): 1.3 - 0 = 1.3
	2.3 - 0 = 2.3

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2206627	See Analyte List	8260B: VOC	8270C: SVOC	8270C SIM: PAH, 1,4 Dioxane	8015: TPH GRO/DRO/MRO	E200.7: Metals	E200.7: Dissolved Metals	E245.1 Mercury	E504.1: EDB	E335.4: Cyanide Subbed		537.1: PFAS	SM 5201B: BOD	410.4: COD	SM9223B E. Coli
6/29	8:00		EB-6-29-22	14		001	X	X	X	X	X	X	X	X	X	X					
6/29	8:30		MKTE-44	14		002	X	X	X	X	X	X	X	X	X	X					
6/29	8:50		OW-57	14		003	X	X	X	X	X	X	X	X	X	X					
6/29	9:15		OW-58	14		004	X	X	X	X	X	X	X	X	X	X					
6/29	9:45		OW-58A	14		005	X	X	X	X	X	X	X	X	X	X					
6/29	—		DUP-6-29-22	14		006	X	X	X	X	X	X	X	X	X	X					
6/29	9:45		FB-6-29-22	3		007		X	X												
			Trip Blank			008															

Date	Time	Relinquished by	Received by	Via	Date	Time
6/29	12:30	Hilario Trejo	CMC courier		6/30/22	0730
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

August 15, 2022

Lesli Alexander

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX (505) 632-3911

RE: 2022 GW Sampling 2nd Quarter OrderNo.: 2206528

Dear Lesli Alexander:

Hall Environmental Analysis Laboratory received 8 sample(s) on 6/9/2022 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued July 12, 2022.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **2206528**
Date: **8/15/2022**

CLIENT: Marathon
Project: 2022 GW Sampling 2nd Quarter

Analytical notes regarding EPA Method 8015D DRO/MRO:
The Laboratory control spike had elevated recovery that was due to laboratory error. The Laboratory control spike duplicate had acceptable recoveries.

Analytical Notes Regarding EPA Method 8270:
Naphthalene, 1-methylnaphthalene and 2-methylnaphthalene may be reported by either EPA Method 8270 or EPA Method 8270SIMS, depending which method needs the least dilution. In this report Naphthalene, 1-methylnaphthalene and 2-methylnaphthalene were reported by EPA Method 8270 instead of EPA Method 8270SIMS for sample OW-63.

Analytical Report
Lab Order: **2206528**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-8-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/8/2022 8:10:00 AM
Lab ID: 2206528-001A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	6/14/2022 7:44:00 PM	A88732
Surr: BFB	94.3	0	70-130		%Rec	1	6/14/2022 7:44:00 PM	A88732
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	6/16/2022 11:37:46 AM	R88822
Toluene	ND	0.20	1.0		µg/L	1	6/16/2022 11:37:46 AM	R88822
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/16/2022 11:37:46 AM	R88822
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	6/16/2022 11:37:46 AM	R88822
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/16/2022 11:37:46 AM	R88822
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/16/2022 11:37:46 AM	R88822
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/16/2022 11:37:46 AM	R88822
Acetone	ND	2.5	10		µg/L	1	6/16/2022 11:37:46 AM	R88822
Bromomethane	ND	0.85	3.0		µg/L	1	6/16/2022 11:37:46 AM	R88822
2-Butanone	ND	2.0	10		µg/L	1	6/16/2022 11:37:46 AM	R88822
Carbon disulfide	ND	0.59	10		µg/L	1	6/16/2022 11:37:46 AM	R88822
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/16/2022 11:37:46 AM	R88822
Chloroform	ND	0.13	1.0		µg/L	1	6/16/2022 11:37:46 AM	R88822
Chloromethane	ND	0.41	3.0		µg/L	1	6/16/2022 11:37:46 AM	R88822
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/16/2022 11:37:46 AM	R88822
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/16/2022 11:37:46 AM	R88822
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/16/2022 11:37:46 AM	R88822
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/16/2022 11:37:46 AM	R88822
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/16/2022 11:37:46 AM	R88822
Methylene Chloride	ND	0.50	3.0		µg/L	1	6/16/2022 11:37:46 AM	R88822
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/16/2022 11:37:46 AM	R88822
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/16/2022 11:37:46 AM	R88822
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	6/16/2022 11:37:46 AM	R88822
Styrene	ND	0.14	1.0		µg/L	1	6/16/2022 11:37:46 AM	R88822
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/16/2022 11:37:46 AM	R88822
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/16/2022 11:37:46 AM	R88822
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/16/2022 11:37:46 AM	R88822
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/16/2022 11:37:46 AM	R88822
Xylenes, Total	ND	0.37	1.5		µg/L	1	6/16/2022 11:37:46 AM	R88822
Surr: 1,2-Dichloroethane-d4	100	0	70-130		%Rec	1	6/16/2022 11:37:46 AM	R88822
Surr: 4-Bromofluorobenzene	94.2	0	70-130		%Rec	1	6/16/2022 11:37:46 AM	R88822
Surr: Dibromofluoromethane	117	0	70-130		%Rec	1	6/16/2022 11:37:46 AM	R88822
Surr: Toluene-d8	94.8	0	70-130		%Rec	1	6/16/2022 11:37:46 AM	R88822

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206528**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-8-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/8/2022 8:10:00 AM
Lab ID: 2206528-001B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	6/14/2022 1:02:48 PM	68078

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206528**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-8-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/8/2022 8:10:00 AM
Lab ID: 2206528-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.044	0.016	0.064	J	mg/L	1	6/15/2022 12:18:16 PM	68038
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	6/15/2022 12:18:16 PM	68038
Surr: DNOP	107	0	42.2-138		%Rec	1	6/15/2022 12:18:16 PM	68038
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	6/22/2022 2:03:18 PM	68135
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	6/22/2022 2:03:18 PM	68135
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	6/22/2022 2:03:18 PM	68135
Di-n-octyl phthalate	ND	12	20		µg/L	1	6/22/2022 2:03:18 PM	68135
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	6/22/2022 2:03:18 PM	68135
Diethyl phthalate	ND	6.0	10		µg/L	1	6/22/2022 2:03:18 PM	68135
Dimethyl phthalate	ND	6.0	10		µg/L	1	6/22/2022 2:03:18 PM	68135
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	6/22/2022 2:03:18 PM	68135
2,4-Dinitrophenol	ND	16	20		µg/L	1	6/22/2022 2:03:18 PM	68135
2-Methylphenol	ND	5.0	10		µg/L	1	6/22/2022 2:03:18 PM	68135
3+4-Methylphenol	ND	5.1	10		µg/L	1	6/22/2022 2:03:18 PM	68135
Phenol	ND	18	20		µg/L	1	6/22/2022 2:03:18 PM	68135
Pyridine	ND	14	60		µg/L	1	6/22/2022 2:03:18 PM	68135
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	6/22/2022 2:03:18 PM	68135
Surr: 2-Fluorophenol	61.0	0	29.4-87.7		%Rec	1	6/22/2022 2:03:18 PM	68135
Surr: Phenol-d5	45.1	0	28.5-64.7		%Rec	1	6/22/2022 2:03:18 PM	68135
Surr: 2,4,6-Tribromophenol	66.9	0	18.6-129		%Rec	1	6/22/2022 2:03:18 PM	68135
Surr: Nitrobenzene-d5	68.5	0	36.9-103		%Rec	1	6/22/2022 2:03:18 PM	68135
Surr: 2-Fluorobiphenyl	68.3	0	38.1-99.9		%Rec	1	6/22/2022 2:03:18 PM	68135
Surr: 4-Terphenyl-d14	87.5	0	48-155		%Rec	1	6/22/2022 2:03:18 PM	68135
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	0.30	0.11	1.0	J	µg/L	1	6/21/2022 4:16:00 PM	68135
Naphthalene	ND	0.20	0.30		µg/L	1	6/21/2022 4:16:00 PM	68135
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	6/21/2022 4:16:00 PM	68135
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	6/21/2022 4:16:00 PM	68135
Acenaphthene	ND	0.14	0.30		µg/L	1	6/21/2022 4:16:00 PM	68135
Fluorene	ND	0.095	0.30		µg/L	1	6/21/2022 4:16:00 PM	68135
Phenanthrene	ND	0.16	0.30		µg/L	1	6/21/2022 4:16:00 PM	68135
Anthracene	ND	0.14	0.30		µg/L	1	6/21/2022 4:16:00 PM	68135
Fluoranthene	ND	0.14	0.30		µg/L	1	6/21/2022 4:16:00 PM	68135
Pyrene	ND	0.32	1.0		µg/L	1	6/21/2022 4:16:00 PM	68135
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	6/21/2022 4:16:00 PM	68135
Chrysene	ND	0.25	0.30		µg/L	1	6/21/2022 4:16:00 PM	68135
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	6/21/2022 4:16:00 PM	68135
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	6/21/2022 4:16:00 PM	68135

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206528**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-8-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/8/2022 8:10:00 AM
Lab ID: 2206528-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	78.1	0	31.6-100		%Rec	1	6/21/2022 4:16:00 PM	68135
Surr: 2-Fluorobiphenyl	72.1	0	26.7-90.1		%Rec	1	6/21/2022 4:16:00 PM	68135
Surr: 4-Terphenyl-d14	112	0	72.3-147		%Rec	1	6/21/2022 4:16:00 PM	68135

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206528**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-8-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/8/2022 8:10:00 AM
Lab ID: 2206528-001D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	ND	0.0016	0.0030		mg/L	1	6/16/2022 4:47:56 PM	68127
Beryllium	ND	0.00088	0.0020		mg/L	1	6/16/2022 4:47:56 PM	68127
Cadmium	ND	0.0018	0.0020		mg/L	1	6/16/2022 4:47:56 PM	68127
Chromium	ND	0.0020	0.0060		mg/L	1	6/16/2022 4:47:56 PM	68127
Cobalt	ND	0.0035	0.0060		mg/L	1	6/16/2022 4:47:56 PM	68127
Nickel	ND	0.0053	0.010		mg/L	1	6/16/2022 4:47:56 PM	68127
Silver	ND	0.0018	0.0050		mg/L	1	6/16/2022 4:47:56 PM	68127
Vanadium	ND	0.0035	0.050		mg/L	1	6/16/2022 4:47:56 PM	68127
Zinc	ND	0.0039	0.010		mg/L	1	6/16/2022 4:47:56 PM	68127
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/20/2022 11:10:49 AM	68127
Arsenic	ND	0.00013	0.0010		mg/L	1	6/20/2022 11:10:49 AM	68127
Lead	ND	0.000061	0.00050		mg/L	1	6/20/2022 11:10:49 AM	68127
Selenium	ND	0.00037	0.0010		mg/L	1	6/20/2022 11:10:49 AM	68127
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/14/2022 1:01:51 PM	68088

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206528**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-8-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/8/2022 8:10:00 AM
Lab ID: 2206528-001E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	ND	0.0011	0.0020		mg/L	1	6/12/2022 11:18:23 AM	B88662
Beryllium	ND	0.00088	0.0020		mg/L	1	6/12/2022 11:18:23 AM	B88662
Cadmium	ND	0.00098	0.0020		mg/L	1	6/12/2022 11:18:23 AM	B88662
Chromium	ND	0.0020	0.0060		mg/L	1	6/12/2022 11:18:23 AM	B88662
Cobalt	ND	0.0024	0.0060		mg/L	1	6/12/2022 11:18:23 AM	B88662
Nickel	ND	0.0033	0.010		mg/L	1	6/12/2022 11:18:23 AM	B88662
Silver	ND	0.0013	0.0050		mg/L	1	6/12/2022 11:18:23 AM	B88662
Vanadium	ND	0.0017	0.050		mg/L	1	6/12/2022 11:18:23 AM	B88662
Zinc	0.0068	0.0032	0.010	J	mg/L	1	6/12/2022 11:18:23 AM	B88662
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/13/2022 11:40:31 AM	A88688
Arsenic	ND	0.00012	0.0010		mg/L	1	6/13/2022 11:40:31 AM	A88688
Lead	ND	0.000057	0.00050		mg/L	1	6/13/2022 11:40:31 AM	A88688
Selenium	ND	0.00034	0.0010		mg/L	1	6/13/2022 11:40:31 AM	A88688
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/14/2022 1:08:15 PM	68088

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206528**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-8-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/8/2022 8:10:00 AM
Lab ID: 2206528-001F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PAC**	
Cyanide	ND	1.80	5.00		ug/L	1	6/22/2022 6:17:00 PM	R89412

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206528**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-63
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/8/2022 8:15:00 AM
Lab ID: 2206528-002A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	26	0.45	2.5		mg/L	50	6/14/2022 8:43:00 PM	A88732
Surr: BFB	105	0	70-130		%Rec	50	6/14/2022 8:43:00 PM	A88732
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	8600	110	500		µg/L	500	6/16/2022 12:06:33 PM	R88822
Toluene	46	10	50	J	µg/L	50	6/16/2022 12:35:22 PM	R88822
Ethylbenzene	1200	11	50		µg/L	50	6/16/2022 12:35:22 PM	R88822
Methyl tert-butyl ether (MTBE)	ND	20	50		µg/L	50	6/16/2022 12:35:22 PM	R88822
1,2,4-Trimethylbenzene	ND	6.1	50		µg/L	50	6/16/2022 12:35:22 PM	R88822
1,3,5-Trimethylbenzene	ND	9.1	50		µg/L	50	6/16/2022 12:35:22 PM	R88822
1,2-Dichloroethane (EDC)	ND	13	50		µg/L	50	6/16/2022 12:35:22 PM	R88822
Acetone	ND	130	500		µg/L	50	6/16/2022 12:35:22 PM	R88822
Bromomethane	ND	43	150		µg/L	50	6/16/2022 12:35:22 PM	R88822
2-Butanone	ND	100	500		µg/L	50	6/16/2022 12:35:22 PM	R88822
Carbon disulfide	ND	30	500		µg/L	50	6/16/2022 12:35:22 PM	R88822
Chlorobenzene	ND	7.8	50		µg/L	50	6/16/2022 12:35:22 PM	R88822
Chloroform	ND	6.7	50		µg/L	50	6/16/2022 12:35:22 PM	R88822
Chloromethane	ND	21	150		µg/L	50	6/16/2022 12:35:22 PM	R88822
cis-1,2-DCE	ND	19	50		µg/L	50	6/16/2022 12:35:22 PM	R88822
1,1-Dichloroethane	ND	14	50		µg/L	50	6/16/2022 12:35:22 PM	R88822
1,1-Dichloroethene	ND	10	50		µg/L	50	6/16/2022 12:35:22 PM	R88822
Isopropylbenzene	57	9.1	50		µg/L	50	6/16/2022 12:35:22 PM	R88822
4-Isopropyltoluene	ND	10	50		µg/L	50	6/16/2022 12:35:22 PM	R88822
Methylene Chloride	ND	25	150		µg/L	50	6/16/2022 12:35:22 PM	R88822
n-Butylbenzene	ND	13	150		µg/L	50	6/16/2022 12:35:22 PM	R88822
n-Propylbenzene	150	9.1	50		µg/L	50	6/16/2022 12:35:22 PM	R88822
sec-Butylbenzene	8.3	7.2	50	J	µg/L	50	6/16/2022 12:35:22 PM	R88822
Styrene	ND	6.8	50		µg/L	50	6/16/2022 12:35:22 PM	R88822
Tetrachloroethene (PCE)	ND	18	50		µg/L	50	6/16/2022 12:35:22 PM	R88822
1,1,1-Trichloroethane	ND	15	50		µg/L	50	6/16/2022 12:35:22 PM	R88822
Trichloroethene (TCE)	ND	10	50		µg/L	50	6/16/2022 12:35:22 PM	R88822
Vinyl chloride	ND	16	50		µg/L	50	6/16/2022 12:35:22 PM	R88822
Xylenes, Total	120	19	75		µg/L	50	6/16/2022 12:35:22 PM	R88822
Surr: 1,2-Dichloroethane-d4	90.0	0	70-130		%Rec	50	6/16/2022 12:35:22 PM	R88822
Surr: 4-Bromofluorobenzene	93.6	0	70-130		%Rec	50	6/16/2022 12:35:22 PM	R88822
Surr: Dibromofluoromethane	107	0	70-130		%Rec	50	6/16/2022 12:35:22 PM	R88822
Surr: Toluene-d8	94.3	0	70-130		%Rec	50	6/16/2022 12:35:22 PM	R88822

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206528**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-63
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/8/2022 8:15:00 AM
Lab ID: 2206528-002B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	6/14/2022 1:17:58 PM	68078

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206528**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-63
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/8/2022 8:15:00 AM
Lab ID: 2206528-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	3.5	0.016	0.064		mg/L	1	6/15/2022 12:42:02 PM	68038
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	6/15/2022 12:42:02 PM	68038
Surr: DNOP	106	0	42.2-138		%Rec	1	6/15/2022 12:42:02 PM	68038
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	6/22/2022 2:44:46 PM	68135
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	6/22/2022 2:44:46 PM	68135
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	6/22/2022 2:44:46 PM	68135
Di-n-octyl phthalate	ND	12	20		µg/L	1	6/22/2022 2:44:46 PM	68135
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	6/22/2022 2:44:46 PM	68135
Diethyl phthalate	ND	6.0	10		µg/L	1	6/22/2022 2:44:46 PM	68135
Dimethyl phthalate	ND	6.0	10		µg/L	1	6/22/2022 2:44:46 PM	68135
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	6/22/2022 2:44:46 PM	68135
2,4-Dinitrophenol	ND	16	20		µg/L	1	6/22/2022 2:44:46 PM	68135
1-Methylnaphthalene	56	4.3	5.0		µg/L	1	6/22/2022 2:44:46 PM	68135
2-Methylnaphthalene	78	4.2	5.0		µg/L	1	6/22/2022 2:44:46 PM	68135
2-Methylphenol	ND	5.0	10		µg/L	1	6/22/2022 2:44:46 PM	68135
3+4-Methylphenol	ND	5.1	10		µg/L	1	6/22/2022 2:44:46 PM	68135
Naphthalene	190	3.2	5.0		µg/L	1	6/22/2022 2:44:46 PM	68135
Phenol	27	18	20		µg/L	1	6/22/2022 2:44:46 PM	68135
Pyridine	ND	14	60		µg/L	1	6/22/2022 2:44:46 PM	68135
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	6/22/2022 2:44:46 PM	68135
Surr: 2-Fluorophenol	52.8	0	29.4-87.7		%Rec	1	6/22/2022 2:44:46 PM	68135
Surr: Phenol-d5	39.7	0	28.5-64.7		%Rec	1	6/22/2022 2:44:46 PM	68135
Surr: 2,4,6-Tribromophenol	72.9	0	18.6-129		%Rec	1	6/22/2022 2:44:46 PM	68135
Surr: Nitrobenzene-d5	62.5	0	36.9-103		%Rec	1	6/22/2022 2:44:46 PM	68135
Surr: 2-Fluorobiphenyl	58.4	0	38.1-99.9		%Rec	1	6/22/2022 2:44:46 PM	68135
Surr: 4-Terphenyl-d14	81.6	0	48-155		%Rec	1	6/22/2022 2:44:46 PM	68135
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	6/21/2022 5:00:00 PM	68135
Acenaphthene	0.70	0.14	0.30		µg/L	1	6/21/2022 5:00:00 PM	68135
Fluorene	1.3	0.095	0.30		µg/L	1	6/21/2022 5:00:00 PM	68135
Phenanthrene	0.84	0.16	0.30		µg/L	1	6/21/2022 5:00:00 PM	68135
Anthracene	ND	0.14	0.30		µg/L	1	6/21/2022 5:00:00 PM	68135
Fluoranthene	ND	0.14	0.30		µg/L	1	6/21/2022 5:00:00 PM	68135
Pyrene	ND	0.32	1.0		µg/L	1	6/21/2022 5:00:00 PM	68135
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	6/21/2022 5:00:00 PM	68135
Chrysene	ND	0.25	0.30		µg/L	1	6/21/2022 5:00:00 PM	68135
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	6/21/2022 5:00:00 PM	68135
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	6/21/2022 5:00:00 PM	68135

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206528**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-63
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/8/2022 8:15:00 AM
Lab ID: 2206528-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	67.3	0	31.6-100		%Rec	1	6/21/2022 5:00:00 PM	68135
Surr: 2-Fluorobiphenyl	55.4	0	26.7-90.1		%Rec	1	6/21/2022 5:00:00 PM	68135
Surr: 4-Terphenyl-d14	74.6	0	72.3-147		%Rec	1	6/21/2022 5:00:00 PM	68135

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206528**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-63
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/8/2022 8:15:00 AM
Lab ID: 2206528-002D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	4.7	0.016	0.030	*	mg/L	10	6/16/2022 5:28:30 PM	68127
Beryllium	ND	0.00088	0.0020		mg/L	1	6/16/2022 4:52:55 PM	68127
Cadmium	ND	0.0018	0.0020		mg/L	1	6/16/2022 4:52:55 PM	68127
Chromium	ND	0.0020	0.0060		mg/L	1	6/16/2022 4:52:55 PM	68127
Cobalt	ND	0.0035	0.0060		mg/L	1	6/16/2022 4:52:55 PM	68127
Nickel	0.029	0.0053	0.010		mg/L	1	6/16/2022 4:52:55 PM	68127
Silver	ND	0.0018	0.0050		mg/L	1	6/16/2022 4:52:55 PM	68127
Vanadium	ND	0.0035	0.050		mg/L	1	6/16/2022 4:52:55 PM	68127
Zinc	ND	0.0039	0.010		mg/L	1	6/16/2022 4:52:55 PM	68127
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/20/2022 11:18:10 AM	68127
Arsenic	0.0088	0.00013	0.0010		mg/L	1	6/20/2022 11:18:10 AM	68127
Lead	0.000076	0.000061	0.00050	J	mg/L	1	6/20/2022 11:18:10 AM	68127
Selenium	ND	0.00037	0.0010		mg/L	1	6/20/2022 11:18:10 AM	68127
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/14/2022 1:10:24 PM	68088

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206528**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-63
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/8/2022 8:15:00 AM
Lab ID: 2206528-002E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	4.1	0.0056	0.010	*	mg/L	5	6/12/2022 11:23:05 AM	B88662
Beryllium	ND	0.00088	0.0020		mg/L	1	6/12/2022 11:21:39 AM	B88662
Cadmium	ND	0.00098	0.0020		mg/L	1	6/12/2022 11:21:39 AM	B88662
Chromium	ND	0.0020	0.0060		mg/L	1	6/12/2022 11:21:39 AM	B88662
Cobalt	ND	0.0024	0.0060		mg/L	1	6/12/2022 11:21:39 AM	B88662
Nickel	0.028	0.0033	0.010		mg/L	1	6/12/2022 11:21:39 AM	B88662
Silver	ND	0.0013	0.0050		mg/L	1	6/12/2022 11:21:39 AM	B88662
Vanadium	0.0027	0.0017	0.050	J	mg/L	1	6/12/2022 11:21:39 AM	B88662
Zinc	0.014	0.0032	0.010		mg/L	1	6/12/2022 11:21:39 AM	B88662
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	0.00061	0.00044	0.0010	J	mg/L	1	6/13/2022 11:43:13 AM	A88688
Arsenic	0.0068	0.00012	0.0010		mg/L	1	6/13/2022 11:43:13 AM	A88688
Lead	ND	0.000057	0.00050		mg/L	1	6/13/2022 11:43:13 AM	A88688
Selenium	ND	0.00034	0.0010		mg/L	1	6/13/2022 11:43:13 AM	A88688
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/14/2022 1:12:33 PM	68088

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206528**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-63
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/8/2022 8:15:00 AM
Lab ID: 2206528-002F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PAC**	
Cyanide	11.2	1.80	5.00		ug/L	1	6/22/2022 6:19:00 PM	R89412

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206528**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-64
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/8/2022 8:50:00 AM
Lab ID: 2206528-003A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.53	0.0090	0.050		mg/L	1	6/14/2022 9:03:00 PM	A88732
Surr: BFB	288	0	70-130	S	%Rec	1	6/14/2022 9:03:00 PM	A88732
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	12	0.23	1.0		µg/L	1	6/16/2022 1:04:13 PM	R88822
Toluene	ND	0.20	1.0		µg/L	1	6/16/2022 1:04:13 PM	R88822
Ethylbenzene	47	0.21	1.0		µg/L	1	6/16/2022 1:04:13 PM	R88822
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	6/16/2022 1:04:13 PM	R88822
1,2,4-Trimethylbenzene	47	0.12	1.0		µg/L	1	6/16/2022 1:04:13 PM	R88822
1,3,5-Trimethylbenzene	2.0	0.18	1.0		µg/L	1	6/16/2022 1:04:13 PM	R88822
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/16/2022 1:04:13 PM	R88822
Acetone	ND	2.5	10		µg/L	1	6/16/2022 1:04:13 PM	R88822
Bromomethane	ND	0.85	3.0		µg/L	1	6/16/2022 1:04:13 PM	R88822
2-Butanone	ND	2.0	10		µg/L	1	6/16/2022 1:04:13 PM	R88822
Carbon disulfide	ND	0.59	10		µg/L	1	6/16/2022 1:04:13 PM	R88822
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/16/2022 1:04:13 PM	R88822
Chloroform	ND	0.13	1.0		µg/L	1	6/16/2022 1:04:13 PM	R88822
Chloromethane	ND	0.41	3.0		µg/L	1	6/16/2022 1:04:13 PM	R88822
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/16/2022 1:04:13 PM	R88822
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/16/2022 1:04:13 PM	R88822
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/16/2022 1:04:13 PM	R88822
Isopropylbenzene	16	0.18	1.0		µg/L	1	6/16/2022 1:04:13 PM	R88822
4-Isopropyltoluene	1.0	0.20	1.0		µg/L	1	6/16/2022 1:04:13 PM	R88822
Methylene Chloride	ND	0.50	3.0		µg/L	1	6/16/2022 1:04:13 PM	R88822
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/16/2022 1:04:13 PM	R88822
n-Propylbenzene	6.2	0.18	1.0		µg/L	1	6/16/2022 1:04:13 PM	R88822
sec-Butylbenzene	3.1	0.14	1.0		µg/L	1	6/16/2022 1:04:13 PM	R88822
Styrene	ND	0.14	1.0		µg/L	1	6/16/2022 1:04:13 PM	R88822
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/16/2022 1:04:13 PM	R88822
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/16/2022 1:04:13 PM	R88822
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/16/2022 1:04:13 PM	R88822
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/16/2022 1:04:13 PM	R88822
Xylenes, Total	9.2	0.37	1.5		µg/L	1	6/16/2022 1:04:13 PM	R88822
Surr: 1,2-Dichloroethane-d4	94.3	0	70-130		%Rec	1	6/16/2022 1:04:13 PM	R88822
Surr: 4-Bromofluorobenzene	89.5	0	70-130		%Rec	1	6/16/2022 1:04:13 PM	R88822
Surr: Dibromofluoromethane	107	0	70-130		%Rec	1	6/16/2022 1:04:13 PM	R88822
Surr: Toluene-d8	94.4	0	70-130		%Rec	1	6/16/2022 1:04:13 PM	R88822

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206528**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-64
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/8/2022 8:50:00 AM
Lab ID: 2206528-003B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	6/14/2022 1:33:15 PM	68078

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206528**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-64
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/8/2022 8:50:00 AM
Lab ID: 2206528-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.40	0.016	0.064		mg/L	1	6/15/2022 1:05:52 PM	68038
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	6/15/2022 1:05:52 PM	68038
Surr: DNOP	125	0	42.2-138		%Rec	1	6/15/2022 1:05:52 PM	68038
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	6/28/2022 9:42:40 AM	68135
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	6/28/2022 9:42:40 AM	68135
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	6/28/2022 9:42:40 AM	68135
Di-n-octyl phthalate	ND	12	20		µg/L	1	6/28/2022 9:42:40 AM	68135
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	6/28/2022 9:42:40 AM	68135
Diethyl phthalate	ND	6.0	10		µg/L	1	6/28/2022 9:42:40 AM	68135
Dimethyl phthalate	ND	6.0	10		µg/L	1	6/28/2022 9:42:40 AM	68135
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	6/28/2022 9:42:40 AM	68135
2,4-Dinitrophenol	ND	16	20		µg/L	1	6/28/2022 9:42:40 AM	68135
2-Methylphenol	ND	5.0	10		µg/L	1	6/28/2022 9:42:40 AM	68135
3+4-Methylphenol	ND	5.1	10		µg/L	1	6/28/2022 9:42:40 AM	68135
Phenol	ND	18	20		µg/L	1	6/28/2022 9:42:40 AM	68135
Pyridine	ND	14	60		µg/L	1	6/28/2022 9:42:40 AM	68135
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	6/28/2022 9:42:40 AM	68135
Surr: 2-Fluorophenol	48.3	0	29.4-87.7		%Rec	1	6/28/2022 9:42:40 AM	68135
Surr: Phenol-d5	37.4	0	28.5-64.7		%Rec	1	6/28/2022 9:42:40 AM	68135
Surr: 2,4,6-Tribromophenol	70.1	0	18.6-129		%Rec	1	6/28/2022 9:42:40 AM	68135
Surr: Nitrobenzene-d5	65.8	0	36.9-103		%Rec	1	6/28/2022 9:42:40 AM	68135
Surr: 2-Fluorobiphenyl	69.4	0	38.1-99.9		%Rec	1	6/28/2022 9:42:40 AM	68135
Surr: 4-Terphenyl-d14	83.6	0	48-155		%Rec	1	6/28/2022 9:42:40 AM	68135
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	6/21/2022 5:43:00 PM	68135
Naphthalene	2.3	0.20	0.30		µg/L	1	6/21/2022 5:43:00 PM	68135
1-Methylnaphthalene	1.4	0.15	0.30		µg/L	1	6/21/2022 5:43:00 PM	68135
2-Methylnaphthalene	0.36	0.14	0.30		µg/L	1	6/21/2022 5:43:00 PM	68135
Acenaphthene	0.16	0.14	0.30	J	µg/L	1	6/21/2022 5:43:00 PM	68135
Fluorene	0.38	0.095	0.30		µg/L	1	6/21/2022 5:43:00 PM	68135
Phenanthrene	0.76	0.16	0.30		µg/L	1	6/21/2022 5:43:00 PM	68135
Anthracene	0.22	0.14	0.30	J	µg/L	1	6/21/2022 5:43:00 PM	68135
Fluoranthene	0.50	0.14	0.30		µg/L	1	6/21/2022 5:43:00 PM	68135
Pyrene	ND	0.32	1.0		µg/L	1	6/21/2022 5:43:00 PM	68135
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	6/21/2022 5:43:00 PM	68135
Chrysene	ND	0.25	0.30		µg/L	1	6/21/2022 5:43:00 PM	68135
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	6/21/2022 5:43:00 PM	68135
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	6/21/2022 5:43:00 PM	68135

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206528**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-64
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/8/2022 8:50:00 AM
Lab ID: 2206528-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	72.6	0	31.6-100		%Rec	1	6/21/2022 5:43:00 PM	68135
Surr: 2-Fluorobiphenyl	61.5	0	26.7-90.1		%Rec	1	6/21/2022 5:43:00 PM	68135
Surr: 4-Terphenyl-d14	76.9	0	72.3-147		%Rec	1	6/21/2022 5:43:00 PM	68135

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206528**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-64
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/8/2022 8:50:00 AM
Lab ID: 2206528-003D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	0.29	0.0016	0.0030		mg/L	1	6/16/2022 4:54:21 PM	68127
Beryllium	ND	0.00088	0.0020		mg/L	1	6/16/2022 4:54:21 PM	68127
Cadmium	ND	0.0018	0.0020		mg/L	1	6/16/2022 4:54:21 PM	68127
Chromium	0.0033	0.0020	0.0060	J	mg/L	1	6/16/2022 4:54:21 PM	68127
Cobalt	ND	0.0035	0.0060		mg/L	1	6/16/2022 4:54:21 PM	68127
Nickel	ND	0.0053	0.010		mg/L	1	6/16/2022 4:54:21 PM	68127
Silver	ND	0.0018	0.0050		mg/L	1	6/16/2022 4:54:21 PM	68127
Vanadium	0.0080	0.0035	0.050	J	mg/L	1	6/16/2022 4:54:21 PM	68127
Zinc	0.0057	0.0039	0.010	J	mg/L	1	6/16/2022 4:54:21 PM	68127
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/20/2022 11:20:37 AM	68127
Arsenic	0.0026	0.00063	0.0050	J	mg/L	5	6/20/2022 5:56:29 PM	68127
Lead	0.00077	0.000061	0.00050		mg/L	1	6/20/2022 11:20:37 AM	68127
Selenium	ND	0.0019	0.0050		mg/L	5	6/20/2022 5:56:29 PM	68127
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/14/2022 1:14:42 PM	68088

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206528**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-64
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/8/2022 8:50:00 AM
Lab ID: 2206528-003E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.23	0.0011	0.0020		mg/L	1	6/12/2022 11:24:32 AM	B88662
Beryllium	ND	0.00088	0.0020		mg/L	1	6/12/2022 11:24:32 AM	B88662
Cadmium	ND	0.00098	0.0020		mg/L	1	6/12/2022 11:24:32 AM	B88662
Chromium	ND	0.0020	0.0060		mg/L	1	6/12/2022 11:24:32 AM	B88662
Cobalt	ND	0.0024	0.0060		mg/L	1	6/12/2022 11:24:32 AM	B88662
Nickel	ND	0.0033	0.010		mg/L	1	6/12/2022 11:24:32 AM	B88662
Silver	ND	0.0013	0.0050		mg/L	1	6/12/2022 11:24:32 AM	B88662
Vanadium	0.0035	0.0017	0.050	J	mg/L	1	6/12/2022 11:24:32 AM	B88662
Zinc	0.0054	0.0032	0.010	J	mg/L	1	6/12/2022 11:24:32 AM	B88662
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/13/2022 11:45:54 AM	A88688
Arsenic	0.0020	0.00012	0.0010		mg/L	1	6/13/2022 11:45:54 AM	A88688
Lead	0.000080	0.000057	0.00050	J	mg/L	1	6/13/2022 11:45:54 AM	A88688
Selenium	ND	0.00034	0.0010		mg/L	1	6/13/2022 11:45:54 AM	A88688
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/14/2022 1:16:51 PM	68088

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206528**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-64
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/8/2022 8:50:00 AM
Lab ID: 2206528-003F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PAC**	
Cyanide	ND	1.80	5.00		ug/L	1	6/22/2022 6:20:00 PM	R89412

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206528**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-10
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/8/2022 9:20:00 AM
Lab ID: 2206528-004A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.012	0.0090	0.050	J	mg/L	1	6/14/2022 9:23:00 PM	A88732
Surr: BFB	92.7	0	70-130		%Rec	1	6/14/2022 9:23:00 PM	A88732
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	6/16/2022 2:31:08 PM	R88822
Toluene	ND	0.20	1.0		µg/L	1	6/16/2022 2:31:08 PM	R88822
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/16/2022 2:31:08 PM	R88822
Methyl tert-butyl ether (MTBE)	7.1	0.39	1.0		µg/L	1	6/16/2022 2:31:08 PM	R88822
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/16/2022 2:31:08 PM	R88822
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/16/2022 2:31:08 PM	R88822
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/16/2022 2:31:08 PM	R88822
Acetone	ND	2.5	10		µg/L	1	6/16/2022 2:31:08 PM	R88822
Bromomethane	ND	0.85	3.0		µg/L	1	6/16/2022 2:31:08 PM	R88822
2-Butanone	ND	2.0	10		µg/L	1	6/16/2022 2:31:08 PM	R88822
Carbon disulfide	ND	0.59	10		µg/L	1	6/16/2022 2:31:08 PM	R88822
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/16/2022 2:31:08 PM	R88822
Chloroform	ND	0.13	1.0		µg/L	1	6/16/2022 2:31:08 PM	R88822
Chloromethane	ND	0.41	3.0		µg/L	1	6/16/2022 2:31:08 PM	R88822
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/16/2022 2:31:08 PM	R88822
1,1-Dichloroethane	1.0	0.27	1.0		µg/L	1	6/16/2022 2:31:08 PM	R88822
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/16/2022 2:31:08 PM	R88822
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/16/2022 2:31:08 PM	R88822
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/16/2022 2:31:08 PM	R88822
Methylene Chloride	47	5.0	30		µg/L	10	6/21/2022 3:10:06 PM	A88912
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/16/2022 2:31:08 PM	R88822
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/16/2022 2:31:08 PM	R88822
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	6/16/2022 2:31:08 PM	R88822
Styrene	ND	0.14	1.0		µg/L	1	6/16/2022 2:31:08 PM	R88822
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/16/2022 2:31:08 PM	R88822
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/16/2022 2:31:08 PM	R88822
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/16/2022 2:31:08 PM	R88822
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/16/2022 2:31:08 PM	R88822
Xylenes, Total	ND	0.37	1.5		µg/L	1	6/16/2022 2:31:08 PM	R88822
Surr: 1,2-Dichloroethane-d4	99.0	0	70-130		%Rec	1	6/16/2022 2:31:08 PM	R88822
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	6/16/2022 2:31:08 PM	R88822
Surr: Dibromofluoromethane	120	0	70-130		%Rec	1	6/16/2022 2:31:08 PM	R88822
Surr: Toluene-d8	89.3	0	70-130		%Rec	1	6/16/2022 2:31:08 PM	R88822

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206528**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-10
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/8/2022 9:20:00 AM
Lab ID: 2206528-004B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	6/14/2022 2:03:38 PM	68078

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206528**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-10
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/8/2022 9:20:00 AM
Lab ID: 2206528-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.12	0.016	0.064		mg/L	1	6/15/2022 1:29:46 PM	68038
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	6/15/2022 1:29:46 PM	68038
Surr: DNOP	97.2	0	42.2-138		%Rec	1	6/15/2022 1:29:46 PM	68038
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	6/28/2022 10:24:07 AM	68135
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	6/28/2022 10:24:07 AM	68135
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	6/28/2022 10:24:07 AM	68135
Di-n-octyl phthalate	ND	12	20		µg/L	1	6/28/2022 10:24:07 AM	68135
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	6/28/2022 10:24:07 AM	68135
Diethyl phthalate	ND	6.0	10		µg/L	1	6/28/2022 10:24:07 AM	68135
Dimethyl phthalate	ND	6.0	10		µg/L	1	6/28/2022 10:24:07 AM	68135
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	6/28/2022 10:24:07 AM	68135
2,4-Dinitrophenol	ND	16	20		µg/L	1	6/28/2022 10:24:07 AM	68135
2-Methylphenol	ND	5.0	10		µg/L	1	6/28/2022 10:24:07 AM	68135
3+4-Methylphenol	ND	5.1	10		µg/L	1	6/28/2022 10:24:07 AM	68135
Phenol	ND	18	20		µg/L	1	6/28/2022 10:24:07 AM	68135
Pyridine	ND	14	60		µg/L	1	6/28/2022 10:24:07 AM	68135
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	6/28/2022 10:24:07 AM	68135
Surr: 2-Fluorophenol	60.0	0	29.4-87.7		%Rec	1	6/28/2022 10:24:07 AM	68135
Surr: Phenol-d5	45.1	0	28.5-64.7		%Rec	1	6/28/2022 10:24:07 AM	68135
Surr: 2,4,6-Tribromophenol	70.3	0	18.6-129		%Rec	1	6/28/2022 10:24:07 AM	68135
Surr: Nitrobenzene-d5	73.0	0	36.9-103		%Rec	1	6/28/2022 10:24:07 AM	68135
Surr: 2-Fluorobiphenyl	73.5	0	38.1-99.9		%Rec	1	6/28/2022 10:24:07 AM	68135
Surr: 4-Terphenyl-d14	87.8	0	48-155		%Rec	1	6/28/2022 10:24:07 AM	68135
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	3.3	0.11	1.0		µg/L	1	6/21/2022 6:28:00 PM	68135
Naphthalene	ND	0.20	0.30		µg/L	1	6/21/2022 6:28:00 PM	68135
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	6/21/2022 6:28:00 PM	68135
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	6/21/2022 6:28:00 PM	68135
Acenaphthene	ND	0.14	0.30		µg/L	1	6/21/2022 6:28:00 PM	68135
Fluorene	ND	0.095	0.30		µg/L	1	6/21/2022 6:28:00 PM	68135
Phenanthrene	ND	0.16	0.30		µg/L	1	6/21/2022 6:28:00 PM	68135
Anthracene	ND	0.14	0.30		µg/L	1	6/21/2022 6:28:00 PM	68135
Fluoranthene	ND	0.14	0.30		µg/L	1	6/21/2022 6:28:00 PM	68135
Pyrene	ND	0.32	1.0		µg/L	1	6/21/2022 6:28:00 PM	68135
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	6/21/2022 6:28:00 PM	68135
Chrysene	ND	0.25	0.30		µg/L	1	6/21/2022 6:28:00 PM	68135
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	6/21/2022 6:28:00 PM	68135
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	6/21/2022 6:28:00 PM	68135

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206528**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-10
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/8/2022 9:20:00 AM
Lab ID: 2206528-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	80.8	0	31.6-100		%Rec	1	6/21/2022 6:28:00 PM	68135
Surr: 2-Fluorobiphenyl	68.6	0	26.7-90.1		%Rec	1	6/21/2022 6:28:00 PM	68135
Surr: 4-Terphenyl-d14	88.1	0	72.3-147		%Rec	1	6/21/2022 6:28:00 PM	68135

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206528**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-10
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/8/2022 9:20:00 AM
Lab ID: 2206528-004D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	0.057	0.0016	0.0030		mg/L	1	6/16/2022 4:55:47 PM	68127
Beryllium	ND	0.00088	0.0020		mg/L	1	6/16/2022 4:55:47 PM	68127
Cadmium	ND	0.0018	0.0020		mg/L	1	6/16/2022 4:55:47 PM	68127
Chromium	ND	0.0020	0.0060		mg/L	1	6/16/2022 4:55:47 PM	68127
Cobalt	ND	0.0035	0.0060		mg/L	1	6/16/2022 4:55:47 PM	68127
Nickel	ND	0.0053	0.010		mg/L	1	6/16/2022 4:55:47 PM	68127
Silver	ND	0.0018	0.0050		mg/L	1	6/16/2022 4:55:47 PM	68127
Vanadium	0.0061	0.0035	0.050	J	mg/L	1	6/16/2022 4:55:47 PM	68127
Zinc	0.0081	0.0039	0.010	J	mg/L	1	6/16/2022 4:55:47 PM	68127
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/20/2022 11:27:56 AM	68127
Arsenic	0.0011	0.00013	0.0010		mg/L	1	6/20/2022 11:27:56 AM	68127
Lead	0.00021	0.000061	0.00050	J	mg/L	1	6/20/2022 11:27:56 AM	68127
Selenium	0.013	0.00037	0.0010		mg/L	1	6/20/2022 11:27:56 AM	68127
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/14/2022 1:19:01 PM	68088

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206528**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-10
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/8/2022 9:20:00 AM
Lab ID: 2206528-004E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.046	0.0011	0.0020		mg/L	1	6/12/2022 11:27:58 AM	B88662
Beryllium	ND	0.00088	0.0020		mg/L	1	6/12/2022 11:27:58 AM	B88662
Cadmium	ND	0.00098	0.0020		mg/L	1	6/12/2022 11:27:58 AM	B88662
Chromium	ND	0.0020	0.0060		mg/L	1	6/12/2022 11:27:58 AM	B88662
Cobalt	0.0039	0.0024	0.0060	J	mg/L	1	6/12/2022 11:27:58 AM	B88662
Nickel	ND	0.0033	0.010		mg/L	1	6/12/2022 11:27:58 AM	B88662
Silver	ND	0.0013	0.0050		mg/L	1	6/12/2022 11:27:58 AM	B88662
Vanadium	0.0055	0.0017	0.050	J	mg/L	1	6/12/2022 11:27:58 AM	B88662
Zinc	0.0056	0.0032	0.010	J	mg/L	1	6/12/2022 11:27:58 AM	B88662
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/13/2022 11:48:35 AM	A88688
Arsenic	0.00065	0.00012	0.0010	J	mg/L	1	6/13/2022 11:48:35 AM	A88688
Lead	0.000080	0.000057	0.00050	J	mg/L	1	6/13/2022 11:48:35 AM	A88688
Selenium	0.010	0.00034	0.0010		mg/L	1	6/13/2022 11:48:35 AM	A88688
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/14/2022 1:21:12 PM	68088

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206528**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-10
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/8/2022 9:20:00 AM
Lab ID: 2206528-004F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PAC**	
Cyanide	ND	1.80	5.00		ug/L	1	6/22/2022 6:21:00 PM	R89412

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206528**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB-6-8-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/8/2022 9:20:00 AM
Lab ID: 2206528-005A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	6/16/2022 3:00:12 PM	R88822
Toluene	ND	0.20	1.0		µg/L	1	6/16/2022 3:00:12 PM	R88822
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/16/2022 3:00:12 PM	R88822
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	6/16/2022 3:00:12 PM	R88822
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/16/2022 3:00:12 PM	R88822
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/16/2022 3:00:12 PM	R88822
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/16/2022 3:00:12 PM	R88822
Acetone	ND	2.5	10		µg/L	1	6/16/2022 3:00:12 PM	R88822
Bromomethane	ND	0.85	3.0		µg/L	1	6/16/2022 3:00:12 PM	R88822
2-Butanone	ND	2.0	10		µg/L	1	6/16/2022 3:00:12 PM	R88822
Carbon disulfide	ND	0.59	10		µg/L	1	6/16/2022 3:00:12 PM	R88822
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/16/2022 3:00:12 PM	R88822
Chloroform	ND	0.13	1.0		µg/L	1	6/16/2022 3:00:12 PM	R88822
Chloromethane	ND	0.41	3.0		µg/L	1	6/16/2022 3:00:12 PM	R88822
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/16/2022 3:00:12 PM	R88822
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/16/2022 3:00:12 PM	R88822
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/16/2022 3:00:12 PM	R88822
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/16/2022 3:00:12 PM	R88822
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/16/2022 3:00:12 PM	R88822
Methylene Chloride	ND	0.50	3.0		µg/L	1	6/16/2022 3:00:12 PM	R88822
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/16/2022 3:00:12 PM	R88822
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/16/2022 3:00:12 PM	R88822
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	6/16/2022 3:00:12 PM	R88822
Styrene	ND	0.14	1.0		µg/L	1	6/16/2022 3:00:12 PM	R88822
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/16/2022 3:00:12 PM	R88822
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/16/2022 3:00:12 PM	R88822
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/16/2022 3:00:12 PM	R88822
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/16/2022 3:00:12 PM	R88822
Xylenes, Total	ND	0.37	1.5		µg/L	1	6/16/2022 3:00:12 PM	R88822
Surr: 1,2-Dichloroethane-d4	97.2	0	70-130		%Rec	1	6/16/2022 3:00:12 PM	R88822
Surr: 4-Bromofluorobenzene	97.0	0	70-130		%Rec	1	6/16/2022 3:00:12 PM	R88822
Surr: Dibromofluoromethane	122	0	70-130		%Rec	1	6/16/2022 3:00:12 PM	R88822
Surr: Toluene-d8	91.0	0	70-130		%Rec	1	6/16/2022 3:00:12 PM	R88822

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206528**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-8-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/8/2022
Lab ID: 2206528-006A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.012	0.0090	0.050	J	mg/L	1	6/14/2022 9:43:00 PM	A88732
Surr: BFB	94.1	0	70-130		%Rec	1	6/14/2022 9:43:00 PM	A88732
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	6/16/2022 3:29:17 PM	R88822
Toluene	ND	0.20	1.0		µg/L	1	6/16/2022 3:29:17 PM	R88822
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/16/2022 3:29:17 PM	R88822
Methyl tert-butyl ether (MTBE)	7.3	0.39	1.0		µg/L	1	6/16/2022 3:29:17 PM	R88822
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/16/2022 3:29:17 PM	R88822
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/16/2022 3:29:17 PM	R88822
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/16/2022 3:29:17 PM	R88822
Acetone	ND	2.5	10		µg/L	1	6/16/2022 3:29:17 PM	R88822
Bromomethane	ND	0.85	3.0		µg/L	1	6/16/2022 3:29:17 PM	R88822
2-Butanone	ND	2.0	10		µg/L	1	6/16/2022 3:29:17 PM	R88822
Carbon disulfide	ND	0.59	10		µg/L	1	6/16/2022 3:29:17 PM	R88822
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/16/2022 3:29:17 PM	R88822
Chloroform	ND	0.13	1.0		µg/L	1	6/16/2022 3:29:17 PM	R88822
Chloromethane	ND	0.41	3.0		µg/L	1	6/16/2022 3:29:17 PM	R88822
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/16/2022 3:29:17 PM	R88822
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/16/2022 3:29:17 PM	R88822
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/16/2022 3:29:17 PM	R88822
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/16/2022 3:29:17 PM	R88822
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/16/2022 3:29:17 PM	R88822
Methylene Chloride	ND	0.50	3.0		µg/L	1	6/16/2022 3:29:17 PM	R88822
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/16/2022 3:29:17 PM	R88822
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/16/2022 3:29:17 PM	R88822
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	6/16/2022 3:29:17 PM	R88822
Styrene	ND	0.14	1.0		µg/L	1	6/16/2022 3:29:17 PM	R88822
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/16/2022 3:29:17 PM	R88822
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/16/2022 3:29:17 PM	R88822
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/16/2022 3:29:17 PM	R88822
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/16/2022 3:29:17 PM	R88822
Xylenes, Total	ND	0.37	1.5		µg/L	1	6/16/2022 3:29:17 PM	R88822
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%Rec	1	6/16/2022 3:29:17 PM	R88822
Surr: 4-Bromofluorobenzene	96.9	0	70-130		%Rec	1	6/16/2022 3:29:17 PM	R88822
Surr: Dibromofluoromethane	126	0	70-130		%Rec	1	6/16/2022 3:29:17 PM	R88822
Surr: Toluene-d8	89.9	0	70-130		%Rec	1	6/16/2022 3:29:17 PM	R88822

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206528**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-8-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/8/2022
Lab ID: 2206528-006B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	6/14/2022 2:18:51 PM	68078

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206528**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-8-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/8/2022
Lab ID: 2206528-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.091	0.016	0.064		mg/L	1	6/15/2022 1:53:30 PM	68038
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	6/15/2022 1:53:30 PM	68038
Surr: DNOP	97.0	0	42.2-138		%Rec	1	6/15/2022 1:53:30 PM	68038
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	6/28/2022 11:05:41 AM	68135
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	6/28/2022 11:05:41 AM	68135
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	6/28/2022 11:05:41 AM	68135
Di-n-octyl phthalate	ND	12	20		µg/L	1	6/28/2022 11:05:41 AM	68135
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	6/28/2022 11:05:41 AM	68135
Diethyl phthalate	ND	6.0	10		µg/L	1	6/28/2022 11:05:41 AM	68135
Dimethyl phthalate	ND	6.0	10		µg/L	1	6/28/2022 11:05:41 AM	68135
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	6/28/2022 11:05:41 AM	68135
2,4-Dinitrophenol	ND	16	20		µg/L	1	6/28/2022 11:05:41 AM	68135
2-Methylphenol	ND	5.0	10		µg/L	1	6/28/2022 11:05:41 AM	68135
3+4-Methylphenol	ND	5.1	10		µg/L	1	6/28/2022 11:05:41 AM	68135
Phenol	ND	18	20		µg/L	1	6/28/2022 11:05:41 AM	68135
Pyridine	ND	14	60		µg/L	1	6/28/2022 11:05:41 AM	68135
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	6/28/2022 11:05:41 AM	68135
Surr: 2-Fluorophenol	54.8	0	29.4-87.7		%Rec	1	6/28/2022 11:05:41 AM	68135
Surr: Phenol-d5	41.2	0	28.5-64.7		%Rec	1	6/28/2022 11:05:41 AM	68135
Surr: 2,4,6-Tribromophenol	66.8	0	18.6-129		%Rec	1	6/28/2022 11:05:41 AM	68135
Surr: Nitrobenzene-d5	68.1	0	36.9-103		%Rec	1	6/28/2022 11:05:41 AM	68135
Surr: 2-Fluorobiphenyl	68.6	0	38.1-99.9		%Rec	1	6/28/2022 11:05:41 AM	68135
Surr: 4-Terphenyl-d14	83.7	0	48-155		%Rec	1	6/28/2022 11:05:41 AM	68135
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	3.1	0.11	1.0		µg/L	1	6/21/2022 7:14:00 PM	68135
Naphthalene	ND	0.20	0.30		µg/L	1	6/21/2022 7:14:00 PM	68135
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	6/21/2022 7:14:00 PM	68135
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	6/21/2022 7:14:00 PM	68135
Acenaphthene	ND	0.14	0.30		µg/L	1	6/21/2022 7:14:00 PM	68135
Fluorene	ND	0.095	0.30		µg/L	1	6/21/2022 7:14:00 PM	68135
Phenanthrene	ND	0.16	0.30		µg/L	1	6/21/2022 7:14:00 PM	68135
Anthracene	ND	0.14	0.30		µg/L	1	6/21/2022 7:14:00 PM	68135
Fluoranthene	ND	0.14	0.30		µg/L	1	6/21/2022 7:14:00 PM	68135
Pyrene	0.60	0.32	1.0	J	µg/L	1	6/21/2022 7:14:00 PM	68135
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	6/21/2022 7:14:00 PM	68135
Chrysene	ND	0.25	0.30		µg/L	1	6/21/2022 7:14:00 PM	68135
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	6/21/2022 7:14:00 PM	68135
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	6/21/2022 7:14:00 PM	68135

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206528**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-8-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/8/2022
Lab ID: 2206528-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	79.2	0	31.6-100		%Rec	1	6/21/2022 7:14:00 PM	68135
Surr: 2-Fluorobiphenyl	68.2	0	26.7-90.1		%Rec	1	6/21/2022 7:14:00 PM	68135
Surr: 4-Terphenyl-d14	90.3	0	72.3-147		%Rec	1	6/21/2022 7:14:00 PM	68135

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206528**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-8-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/8/2022
Lab ID: 2206528-006D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	0.055	0.0016	0.0030		mg/L	1	6/16/2022 4:57:29 PM	68127
Beryllium	ND	0.00088	0.0020		mg/L	1	6/16/2022 4:57:29 PM	68127
Cadmium	ND	0.0018	0.0020		mg/L	1	6/16/2022 4:57:29 PM	68127
Chromium	ND	0.0020	0.0060		mg/L	1	6/16/2022 4:57:29 PM	68127
Cobalt	ND	0.0035	0.0060		mg/L	1	6/16/2022 4:57:29 PM	68127
Nickel	ND	0.0053	0.010		mg/L	1	6/16/2022 4:57:29 PM	68127
Silver	ND	0.0018	0.0050		mg/L	1	6/16/2022 4:57:29 PM	68127
Vanadium	0.0067	0.0035	0.050	J	mg/L	1	6/16/2022 4:57:29 PM	68127
Zinc	0.0071	0.0039	0.010	J	mg/L	1	6/16/2022 4:57:29 PM	68127
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/20/2022 11:30:23 AM	68127
Arsenic	0.0011	0.00013	0.0010		mg/L	1	6/20/2022 11:30:23 AM	68127
Lead	0.00021	0.000061	0.00050	J	mg/L	1	6/20/2022 11:30:23 AM	68127
Selenium	0.012	0.00037	0.0010		mg/L	1	6/20/2022 11:30:23 AM	68127
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/14/2022 1:23:20 PM	68088

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206528**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-8-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/8/2022
Lab ID: 2206528-006E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.045	0.0011	0.0020		mg/L	1	6/12/2022 11:36:09 AM	B88662
Beryllium	ND	0.00088	0.0020		mg/L	1	6/12/2022 11:36:09 AM	B88662
Cadmium	ND	0.00098	0.0020		mg/L	1	6/12/2022 11:36:09 AM	B88662
Chromium	ND	0.0020	0.0060		mg/L	1	6/12/2022 11:36:09 AM	B88662
Cobalt	0.0028	0.0024	0.0060	J	mg/L	1	6/12/2022 11:36:09 AM	B88662
Nickel	ND	0.0033	0.010		mg/L	1	6/12/2022 11:36:09 AM	B88662
Silver	ND	0.0013	0.0050		mg/L	1	6/12/2022 11:36:09 AM	B88662
Vanadium	0.0063	0.0017	0.050	J	mg/L	1	6/12/2022 11:36:09 AM	B88662
Zinc	0.0066	0.0032	0.010	J	mg/L	1	6/12/2022 11:36:09 AM	B88662
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/13/2022 11:51:17 AM	A88688
Arsenic	0.00067	0.00012	0.0010	J	mg/L	1	6/13/2022 11:51:17 AM	A88688
Lead	0.000074	0.000057	0.00050	J	mg/L	1	6/13/2022 11:51:17 AM	A88688
Selenium	0.011	0.00034	0.0010		mg/L	1	6/13/2022 11:51:17 AM	A88688
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/14/2022 1:25:27 PM	68088

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206528**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-8-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/8/2022
Lab ID: 2206528-006F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PAC**	
Cyanide	ND	1.80	5.00		ug/L	1	6/22/2022 6:24:00 PM	R89412

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206528**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 2nd Quarter
Collection Date:
Lab ID: 2206528-007A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	6/16/2022 3:58:25 PM	R88822
Toluene	ND	0.20	1.0		µg/L	1	6/16/2022 3:58:25 PM	R88822
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/16/2022 3:58:25 PM	R88822
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	6/16/2022 3:58:25 PM	R88822
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/16/2022 3:58:25 PM	R88822
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/16/2022 3:58:25 PM	R88822
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/16/2022 3:58:25 PM	R88822
Acetone	ND	2.5	10		µg/L	1	6/16/2022 3:58:25 PM	R88822
Bromomethane	ND	0.85	3.0		µg/L	1	6/16/2022 3:58:25 PM	R88822
2-Butanone	ND	2.0	10		µg/L	1	6/16/2022 3:58:25 PM	R88822
Carbon disulfide	ND	0.59	10		µg/L	1	6/16/2022 3:58:25 PM	R88822
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/16/2022 3:58:25 PM	R88822
Chloroform	ND	0.13	1.0		µg/L	1	6/16/2022 3:58:25 PM	R88822
Chloromethane	ND	0.41	3.0		µg/L	1	6/16/2022 3:58:25 PM	R88822
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/16/2022 3:58:25 PM	R88822
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/16/2022 3:58:25 PM	R88822
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/16/2022 3:58:25 PM	R88822
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/16/2022 3:58:25 PM	R88822
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/16/2022 3:58:25 PM	R88822
Methylene Chloride	ND	0.50	3.0		µg/L	1	6/16/2022 3:58:25 PM	R88822
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/16/2022 3:58:25 PM	R88822
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/16/2022 3:58:25 PM	R88822
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	6/16/2022 3:58:25 PM	R88822
Styrene	ND	0.14	1.0		µg/L	1	6/16/2022 3:58:25 PM	R88822
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/16/2022 3:58:25 PM	R88822
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/16/2022 3:58:25 PM	R88822
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/16/2022 3:58:25 PM	R88822
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/16/2022 3:58:25 PM	R88822
Xylenes, Total	ND	0.37	1.5		µg/L	1	6/16/2022 3:58:25 PM	R88822
Surr: 1,2-Dichloroethane-d4	98.8	0	70-130		%Rec	1	6/16/2022 3:58:25 PM	R88822
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	6/16/2022 3:58:25 PM	R88822
Surr: Dibromofluoromethane	124	0	70-130		%Rec	1	6/16/2022 3:58:25 PM	R88822
Surr: Toluene-d8	88.5	0	70-130		%Rec	1	6/16/2022 3:58:25 PM	R88822

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206528**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 2nd Quarter
Collection Date:
Lab ID: 2206528-007B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	6/14/2022 2:34:06 PM	68078

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

ANALYTICAL REPORT

June 23, 2022

Hall Environmental Analysis Laboratory

Sample Delivery Group: L1504798

Samples Received: 06/14/2022

Project Number:

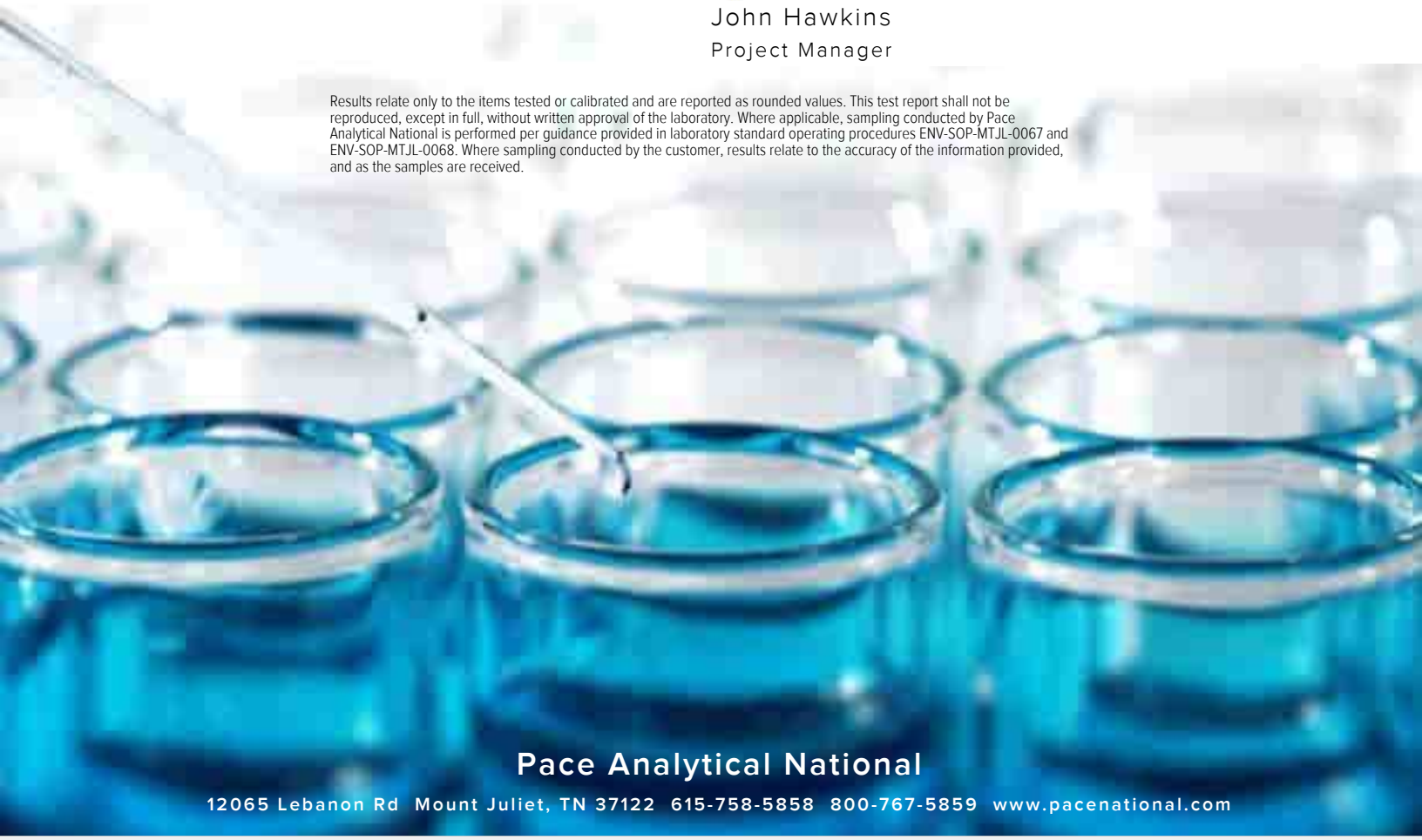
Description:

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By:

John Hawkins
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 4

Sr: Sample Results 5

2206528-001F EB-6-8-22 L1504798-01 5

2206528-002F OW-63 L1504798-02 6

2206528-003F OW-64 L1504798-03 7

2206528-004F OW-10 L1504798-04 8

2206528-006F DUP-6-8-22 L1504798-05 9

Qc: Quality Control Summary 10

Wet Chemistry by Method 4500CN E-2016 10

Gl: Glossary of Terms 11

Al: Accreditations & Locations 12

Sc: Sample Chain of Custody 13

SAMPLE SUMMARY

2206528-001F EB-6-8-22 L1504798-01 WW

Collected by	Collected date/time	Received date/time
	06/08/22 08:10	06/14/22 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1882735	1	06/22/22 07:02	06/22/22 18:17	LDT	Mt. Juliet, TN

2206528-002F OW-63 L1504798-02 WW

Collected by	Collected date/time	Received date/time
	06/08/22 08:15	06/14/22 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1882735	1	06/22/22 07:02	06/22/22 18:19	LDT	Mt. Juliet, TN

2206528-003F OW-64 L1504798-03 WW

Collected by	Collected date/time	Received date/time
	06/08/22 08:50	06/14/22 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1882735	1	06/22/22 07:02	06/22/22 18:20	LDT	Mt. Juliet, TN

2206528-004F OW-10 L1504798-04 WW

Collected by	Collected date/time	Received date/time
	06/08/22 09:20	06/14/22 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1882735	1	06/22/22 07:02	06/22/22 18:21	LDT	Mt. Juliet, TN

2206528-006F DUP-6-8-22 L1504798-05 WW

Collected by	Collected date/time	Received date/time
	06/08/22 00:00	06/14/22 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1882735	1	06/22/22 07:02	06/22/22 18:24	LDT	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	U		1.80	5.00	1	06/22/2022 18:17	WG1882735

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	11.2		1.80	5.00	1	06/22/2022 18:19	WG1882735

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	U		1.80	5.00	1	06/22/2022 18:20	WG1882735

Received by OCD: 4/21/2023 9:21:57 AM

2206528-004F GW-10
Collected date/time: 06/08/22 09:20
L1504798

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	U		1.80	5.00	1	06/22/2022 18:21	WG1882735

Released to Imaging: 4/21/2023 9:40:26 AM

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	U		1.80	5.00	1	06/22/2022 18:24	WG1882735

Method Blank (MB)

(MB) R3806296-1 06/22/22 17:47

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Cyanide	U		1.80	5.00

L1504409-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1504409-01 06/22/22 18:08 • (DUP) R3806296-7 06/22/22 18:12

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	U	U	1	0.000		20

L1504798-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1504798-01 06/22/22 18:17 • (DUP) R3806296-8 06/22/22 18:18

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3806296-2 06/22/22 17:48

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	100	107	107	87.1-120	

L1503089-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1503089-02 06/22/22 17:53 • (MS) R3806296-3 06/22/22 17:54 • (MSD) R3806296-4 06/22/22 17:55

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	100	U	56.8	67.5	56.8	67.5	1	90.0-110	J6	J6	17.2	20

L1503588-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1503588-02 06/22/22 18:02 • (MS) R3806296-5 06/22/22 18:03 • (MSD) R3806296-6 06/22/22 18:04

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	100	U	93.5	99.2	93.5	99.2	1	90.0-110			5.92	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Received by OCD: 4/21/2023 9:21:57 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

F123

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

SUB CONTRATOR:	Pace TN	COMPANY: PACE TN	PHONE: (800) 767-5859	FAX: (615) 758-5859	
ADDRESS:	12065 Lebanon Rd		ACCOUNT #:	EMAIL:	
CITY, STATE, ZIP:	Mt. Juliet, TN 37122				

L1504798

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS	
1	2206528-001F	EB-6-8-22	500AMBHDP F-NAOH	Groundwater	6/8/2022 8:10:00 AM	1	Total Cyanide	J and MDL
2	2206528-002F	OW-63	500AMBHDP F-NAOH	Groundwater	6/8/2022 8:15:00 AM	1	Total Cyanide	
3	2206528-003F	OW-64	500AMBHDP F-NAOH	Groundwater	6/8/2022 8:50:00 AM	1	Total Cyanide	
4	2206528-004F	OW-10	500AMBHDP F-NAOH	Groundwater	6/8/2022 9:20:00 AM	1	Total Cyanide	
5	2206528-006F	DUP-6-8-22	500AMBHDP F-NAOH	Groundwater	6/8/2022	1	Total Cyanide	

CMC 6/10/22

Sample Receipt Checklist

COC Seal Present/Intact: ✓ Y N
COC Signed/Accurate: ✓ Y N
Bottles arrive intact: ✓ Y N
Correct bottles used: ✓ Y N
Sufficient volume sent: ✓ Y N
RAD Screen <0.5 mR/hr: ✓ Y N

If Applicable
VOA Zero Headspace: ✓ Y N
Pres.Correct/Check: ✓ Y N

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By: CMC	Date: 6/10/2022	Time: 12:55 PM	Received By:	Date: 6/14/22	Time: 845
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☒ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY
Temp of samples 2.7 to 2.7 °C DRH7 Attempt to Cool ? _____
Comments: _____

Released to Imaging: 4/21/2023 9:40:26 AM

July 08, 2022

Vista Work Order No. 2206101

Mr. Andy Freeman
Hall Environmental Analytical Laboratory
4901 Hawkins NE
Albuquerque, NM 87109

Dear Mr. Freeman,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on June 10, 2022 under your Project Name '2206528'.

Vista Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at jfox@vista-analytical.com.

Thank you for choosing Vista as part of your analytical support team.

Sincerely,

Jamie Fox
Laboratory Director

Vista Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAP for those applicable test methods. Results relate only to the samples as received by the laboratory. This report should not be reproduced except in full without the written approval of Vista.

Vista Work Order No. 2206101
Case Narrative

Sample Condition on Receipt:

Two aqueous samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology. The samples were received in good condition and within the recommended temperature requirements.

Analytical Notes:

PFAS Isotope Dilution Method

Sample "OW-63" contained particulate and was centrifuged prior to extraction.

The samples were extracted and analyzed for a selected list of PFAS using Vista's PFAS Isotope Dilution Method. The results for PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Results for all other analytes include the linear isomers only.

Holding Times

The samples were extracted and analyzed within the hold times.

Quality Control

The Initial Calibration and Continuing Calibration Verifications met the acceptance criteria.

A Method Blank and Ongoing Precision and Recovery (OPR) sample were extracted and analyzed with the preparation batch. No analytes were detected in the Method Blank above the Reporting Limit. The OPR recoveries were within the method acceptance criteria.

The labeled standard recoveries for all QC and field samples were within the acceptance criteria.

TABLE OF CONTENTS

Case Narrative..... 1

Table of Contents..... 3

Sample Inventory..... 4

Analytical Results..... 5

Qualifiers..... 14

Certifications..... 15

Sample Receipt..... 18

Sample Inventory Report

Vista
an Enthalpy Analytical Laboratory

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
2206101-01	OW-63	08-Jun-22 08:15	10-Jun-22 08:58	HDPE Bottle, 250 mL
2206101-02	Equipment Blank-PFAS	08-Jun-22 08:15	10-Jun-22 08:58	HDPE Bottle, 250 mL

Released to Imaging: 4/21/2023 9:40:26 AM

ANALYTICAL RESULTS

Sample ID: Method Blank — **PFAS Isotope Dilution Method**

Client Data
Name: Hall Environmental Analytical Laboratory
Project: 2206528
Matrix: Aqueous

Laboratory Data
Lab Sample: B22F113-BLK1
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	2.00		B22F113	28-Jun-22	0.250 L	30-Jun-22 07:54	1
PFPeA	2706-90-3	ND	2.00		B22F113	28-Jun-22	0.250 L	30-Jun-22 07:54	1
PFBS	375-73-5	ND	2.00		B22F113	28-Jun-22	0.250 L	30-Jun-22 07:54	1
4:2 FTS	757124-72-4	ND	2.00		B22F113	28-Jun-22	0.250 L	30-Jun-22 07:54	1
PFHxA	307-24-4	ND	2.00		B22F113	28-Jun-22	0.250 L	30-Jun-22 07:54	1
PFPeS	2706-91-4	ND	2.00		B22F113	28-Jun-22	0.250 L	30-Jun-22 07:54	1
PFHpA	375-85-9	ND	2.00		B22F113	28-Jun-22	0.250 L	30-Jun-22 07:54	1
PFHxS	355-46-4	ND	2.00		B22F113	28-Jun-22	0.250 L	30-Jun-22 07:54	1
6:2 FTS	27619-97-2	ND	2.00		B22F113	28-Jun-22	0.250 L	30-Jun-22 07:54	1
PFOA	335-67-1	ND	2.00		B22F113	28-Jun-22	0.250 L	30-Jun-22 07:54	1
PFHpS	375-92-8	ND	2.00		B22F113	28-Jun-22	0.250 L	30-Jun-22 07:54	1
PFNA	375-95-1	ND	2.00		B22F113	28-Jun-22	0.250 L	30-Jun-22 07:54	1
PFOSA	754-91-6	ND	2.00		B22F113	28-Jun-22	0.250 L	30-Jun-22 07:54	1
PFOS	1763-23-1	ND	2.00		B22F113	28-Jun-22	0.250 L	30-Jun-22 07:54	1
PFDA	335-76-2	ND	2.00		B22F113	28-Jun-22	0.250 L	30-Jun-22 07:54	1
8:2 FTS	39108-34-4	ND	2.00		B22F113	28-Jun-22	0.250 L	30-Jun-22 07:54	1
PFNS	68259-12-1	ND	2.00		B22F113	28-Jun-22	0.250 L	30-Jun-22 07:54	1
MeFOSAA	2355-31-9	ND	2.00		B22F113	28-Jun-22	0.250 L	30-Jun-22 07:54	1
EtFOSAA	2991-50-6	ND	2.00		B22F113	28-Jun-22	0.250 L	30-Jun-22 07:54	1
PFUnA	2058-94-8	ND	2.00		B22F113	28-Jun-22	0.250 L	30-Jun-22 07:54	1
PFDS	335-77-3	ND	2.00		B22F113	28-Jun-22	0.250 L	30-Jun-22 07:54	1
PFDoA	307-55-1	ND	2.00		B22F113	28-Jun-22	0.250 L	30-Jun-22 07:54	1
PFTrDA	72629-94-8	ND	2.00		B22F113	28-Jun-22	0.250 L	30-Jun-22 07:54	1
PFTeDA	376-06-7	ND	2.00		B22F113	28-Jun-22	0.250 L	30-Jun-22 07:54	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	76.2	25 - 150		B22F113	28-Jun-22	0.250 L	30-Jun-22 07:54	1
13C3-PFPeA	IS	86.0	25 - 150		B22F113	28-Jun-22	0.250 L	30-Jun-22 07:54	1
13C3-PFBS	IS	72.6	25 - 150		B22F113	28-Jun-22	0.250 L	30-Jun-22 07:54	1
13C2-4:2 FTS	IS	89.5	25 - 150		B22F113	28-Jun-22	0.250 L	30-Jun-22 07:54	1
13C2-PFHxA	IS	81.6	25 - 150		B22F113	28-Jun-22	0.250 L	30-Jun-22 07:54	1
13C4-PFHpA	IS	71.4	25 - 150		B22F113	28-Jun-22	0.250 L	30-Jun-22 07:54	1
13C3-PFHxS	IS	76.2	25 - 150		B22F113	28-Jun-22	0.250 L	30-Jun-22 07:54	1
13C2-6:2 FTS	IS	84.6	25 - 150		B22F113	28-Jun-22	0.250 L	30-Jun-22 07:54	1
13C2-PFOA	IS	88.9	25 - 150		B22F113	28-Jun-22	0.250 L	30-Jun-22 07:54	1
13C5-PFNA	IS	78.7	25 - 150		B22F113	28-Jun-22	0.250 L	30-Jun-22 07:54	1
13C8-PFOSA	IS	43.2	10 - 150		B22F113	28-Jun-22	0.250 L	30-Jun-22 07:54	1
13C8-PFOS	IS	78.4	25 - 150		B22F113	28-Jun-22	0.250 L	30-Jun-22 07:54	1
13C2-PFDA	IS	76.5	25 - 150		B22F113	28-Jun-22	0.250 L	30-Jun-22 07:54	1

Vista
an Eurofins Analytical Laboratory

Sample ID: Method Blank

PFAS Isotope Dilution Method

Client Data

Name: Hall Environmental Analytical Laboratory
Project: 2206528
Matrix: Aqueous

Laboratory Data

Lab Sample: B22F113-BLK1
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-8:2 FTS	IS	60.4	25 - 150		B22F113	28-Jun-22	0.250 L	30-Jun-22 07:54	1
d3-MeFOSAA	IS	69.3	25 - 150		B22F113	28-Jun-22	0.250 L	30-Jun-22 07:54	1
d5-EtFOSAA	IS	59.5	25 - 150		B22F113	28-Jun-22	0.250 L	30-Jun-22 07:54	1
13C2-PFUnA	IS	62.3	25 - 150		B22F113	28-Jun-22	0.250 L	30-Jun-22 07:54	1
13C2-PFDoA	IS	59.4	25 - 150		B22F113	28-Jun-22	0.250 L	30-Jun-22 07:54	1
13C2-PFTeDA	IS	60.1	20 - 150		B22F113	28-Jun-22	0.250 L	30-Jun-22 07:54	1

RL - Reporting limit

Results reported to RL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

Vista
an Enthalpy Analytical observatory

Sample ID: OPR

PFAS Isotope Dilution Method

Client Data

Name: Hall Environmental Analytical Laboratory
Project: 2206528

Matrix: Aqueous

Laboratory Data

Lab Sample: B22F113-BS1

Column: BEH C18

Analyte	CAS Number	Amt Found (ng/L)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	46.9	40.0	117	65 - 135		B22F113	28-Jun-22	0.250 L	30-Jun-22 08:05	1
PFPeA	2706-90-3	34.4	40.0	85.9	65 - 135		B22F113	28-Jun-22	0.250 L	30-Jun-22 08:05	1
PFBS	375-73-5	37.5	40.0	93.7	65 - 135		B22F113	28-Jun-22	0.250 L	30-Jun-22 08:05	1
4:2 FTS	757124-72-4	44.8	40.0	112	60 - 145		B22F113	28-Jun-22	0.250 L	30-Jun-22 08:05	1
PFHxA	307-24-4	42.5	40.0	106	65 - 135		B22F113	28-Jun-22	0.250 L	30-Jun-22 08:05	1
PFPeS	2706-91-4	40.6	40.0	101	65 - 135		B22F113	28-Jun-22	0.250 L	30-Jun-22 08:05	1
PFHpA	375-85-9	38.4	40.0	96.0	65 - 135		B22F113	28-Jun-22	0.250 L	30-Jun-22 08:05	1
PFHxS	355-46-4	37.6	40.0	94.1	65 - 135		B22F113	28-Jun-22	0.250 L	30-Jun-22 08:05	1
6:2 FTS	27619-97-2	41.9	40.0	105	60 - 140		B22F113	28-Jun-22	0.250 L	30-Jun-22 08:05	1
PFOA	335-67-1	35.3	40.0	88.2	65 - 135		B22F113	28-Jun-22	0.250 L	30-Jun-22 08:05	1
PFHpS	375-92-8	42.7	40.0	107	65 - 135		B22F113	28-Jun-22	0.250 L	30-Jun-22 08:05	1
PFNA	375-95-1	43.6	40.0	109	65 - 135		B22F113	28-Jun-22	0.250 L	30-Jun-22 08:05	1
PFOSA	754-91-6	41.8	40.0	105	65 - 140		B22F113	28-Jun-22	0.250 L	30-Jun-22 08:05	1
PFOS	1763-23-1	40.5	40.0	101	65 - 140		B22F113	28-Jun-22	0.250 L	30-Jun-22 08:05	1
PFDA	335-76-2	40.5	40.0	101	65 - 135		B22F113	28-Jun-22	0.250 L	30-Jun-22 08:05	1
8:2 FTS	39108-34-4	36.8	40.0	92.1	65 - 135		B22F113	28-Jun-22	0.250 L	30-Jun-22 08:05	1
PFNS	68259-12-1	34.9	40.0	87.2	65 - 135		B22F113	28-Jun-22	0.250 L	30-Jun-22 08:05	1
MeFOSAA	2355-31-9	43.2	40.0	108	65 - 135		B22F113	28-Jun-22	0.250 L	30-Jun-22 08:05	1
EtFOSAA	2991-50-6	36.5	40.0	91.3	65 - 135		B22F113	28-Jun-22	0.250 L	30-Jun-22 08:05	1
PFUnA	2058-94-8	37.9	40.0	94.9	65 - 140		B22F113	28-Jun-22	0.250 L	30-Jun-22 08:05	1
PFDS	335-77-3	30.8	40.0	76.9	50 - 150		B22F113	28-Jun-22	0.250 L	30-Jun-22 08:05	1
PFDoA	307-55-1	38.6	40.0	96.6	65 - 135		B22F113	28-Jun-22	0.250 L	30-Jun-22 08:05	1
PFTrDA	72629-94-8	41.7	40.0	104	60 - 140		B22F113	28-Jun-22	0.250 L	30-Jun-22 08:05	1
PFTeDA	376-06-7	35.1	40.0	87.9	65 - 135		B22F113	28-Jun-22	0.250 L	30-Jun-22 08:05	1

Labeled Standards	Type	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	79.4	25 - 150		B22F113	28-Jun-22	0.250 L	30-Jun-22 08:05	1
13C3-PFPeA	IS	88.4	25 - 150		B22F113	28-Jun-22	0.250 L	30-Jun-22 08:05	1
13C3-PFBS	IS	72.0	25 - 150		B22F113	28-Jun-22	0.250 L	30-Jun-22 08:05	1
13C2-4:2 FTS	IS	94.4	25 - 150		B22F113	28-Jun-22	0.250 L	30-Jun-22 08:05	1
13C2-PFHxA	IS	81.4	25 - 150		B22F113	28-Jun-22	0.250 L	30-Jun-22 08:05	1
13C4-PFHpA	IS	70.4	25 - 150		B22F113	28-Jun-22	0.250 L	30-Jun-22 08:05	1
13C3-PFHxS	IS	80.1	25 - 150		B22F113	28-Jun-22	0.250 L	30-Jun-22 08:05	1
13C2-6:2 FTS	IS	83.7	25 - 150		B22F113	28-Jun-22	0.250 L	30-Jun-22 08:05	1
13C2-PFOA	IS	95.4	25 - 150		B22F113	28-Jun-22	0.250 L	30-Jun-22 08:05	1
13C5-PFNA	IS	80.9	25 - 150		B22F113	28-Jun-22	0.250 L	30-Jun-22 08:05	1

Sample ID: OPR **PFAS Isotope Dilution Method**

Client Data

Name: Hall Environmental Analytical Laboratory
Project: 2206528
Matrix: Aqueous

Laboratory Data

Lab Sample: B22F113-BS1
Column: BEH C18

Labeled Standards	Type	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C8-PFOSA	IS	51.6	10 - 150		B22F113	28-Jun-22	0.250 L	30-Jun-22 08:05	1
13C8-PFOS	IS	81.9	25 - 150		B22F113	28-Jun-22	0.250 L	30-Jun-22 08:05	1
13C2-PFDA	IS	73.3	25 - 150		B22F113	28-Jun-22	0.250 L	30-Jun-22 08:05	1
13C2-8:2 FTS	IS	62.6	25 - 150		B22F113	28-Jun-22	0.250 L	30-Jun-22 08:05	1
d3-MeFOSAA	IS	61.8	25 - 150		B22F113	28-Jun-22	0.250 L	30-Jun-22 08:05	1
d5-EtFOSAA	IS	65.8	25 - 150		B22F113	28-Jun-22	0.250 L	30-Jun-22 08:05	1
13C2-PFUnA	IS	61.9	25 - 150		B22F113	28-Jun-22	0.250 L	30-Jun-22 08:05	1
13C2-PFDoA	IS	56.0	25 - 150		B22F113	28-Jun-22	0.250 L	30-Jun-22 08:05	1
13C2-PFTeDA	IS	58.4	20 - 150		B22F113	28-Jun-22	0.250 L	30-Jun-22 08:05	1

Vista
an Enthalpy Analytical company

Sample ID: OW-63 **PFAS Isotope Dilution Method**

Client Data

Name: Hall Environmental Analytical Laboratory
Project: 2206528
Location: 2206528-002I
Matrix: Aqueous
Date Collected: 08-Jun-22 08:15

Laboratory Data

Lab Sample: 2206101-01
Date Received: 10-Jun-22 08:58
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	2.08		B22F113	28-Jun-22	0.240 L	30-Jun-22 08:25	1
PFPeA	2706-90-3	445	2.08		B22F113	28-Jun-22	0.240 L	30-Jun-22 08:25	1
PFBS	375-73-5	40.2	2.08		B22F113	28-Jun-22	0.240 L	30-Jun-22 08:25	1
4:2 FTS	757124-72-4	ND	2.08		B22F113	28-Jun-22	0.240 L	30-Jun-22 08:25	1
PFHxA	307-24-4	442	2.08		B22F113	28-Jun-22	0.240 L	30-Jun-22 08:25	1
PFPeS	2706-91-4	53.3	2.08		B22F113	28-Jun-22	0.240 L	30-Jun-22 08:25	1
PFHpA	375-85-9	128	2.08		B22F113	28-Jun-22	0.240 L	30-Jun-22 08:25	1
PFHxS	355-46-4	232	2.08		B22F113	28-Jun-22	0.240 L	30-Jun-22 08:25	1
6:2 FTS	27619-97-2	712	2.08		B22F113	28-Jun-22	0.240 L	30-Jun-22 08:25	1
PFOA	335-67-1	110	2.08		B22F113	28-Jun-22	0.240 L	30-Jun-22 08:25	1
PFHpS	375-92-8	13.2	2.08		B22F113	28-Jun-22	0.240 L	30-Jun-22 08:25	1
PFNA	375-95-1	604	2.08		B22F113	28-Jun-22	0.240 L	30-Jun-22 08:25	1
PFOSA	754-91-6	ND	2.08		B22F113	28-Jun-22	0.240 L	30-Jun-22 08:25	1
PFOS	1763-23-1	360	2.08		B22F113	28-Jun-22	0.240 L	30-Jun-22 08:25	1
PFDA	335-76-2	13.2	2.08		B22F113	28-Jun-22	0.240 L	30-Jun-22 08:25	1
8:2 FTS	39108-34-4	71.7	2.08		B22F113	28-Jun-22	0.240 L	30-Jun-22 08:25	1
PFNS	68259-12-1	ND	2.08		B22F113	28-Jun-22	0.240 L	30-Jun-22 08:25	1
MeFOSAA	2355-31-9	ND	2.08		B22F113	28-Jun-22	0.240 L	30-Jun-22 08:25	1
EtFOSAA	2991-50-6	ND	2.08		B22F113	28-Jun-22	0.240 L	30-Jun-22 08:25	1
PFUnA	2058-94-8	103	2.08		B22F113	28-Jun-22	0.240 L	30-Jun-22 08:25	1
PFDS	335-77-3	ND	2.08		B22F113	28-Jun-22	0.240 L	30-Jun-22 08:25	1
PFDoA	307-55-1	ND	2.08		B22F113	28-Jun-22	0.240 L	30-Jun-22 08:25	1
PFTrDA	72629-94-8	ND	2.08		B22F113	28-Jun-22	0.240 L	30-Jun-22 08:25	1
PFTeDA	376-06-7	ND	2.08		B22F113	28-Jun-22	0.240 L	30-Jun-22 08:25	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	48.3	25 - 150		B22F113	28-Jun-22	0.240 L	30-Jun-22 08:25	1
13C3-PFPeA	IS	93.8	25 - 150		B22F113	28-Jun-22	0.240 L	30-Jun-22 08:25	1
13C3-PFBS	IS	57.5	25 - 150		B22F113	28-Jun-22	0.240 L	30-Jun-22 08:25	1
13C2-4:2 FTS	IS	75.8	25 - 150		B22F113	28-Jun-22	0.240 L	30-Jun-22 08:25	1
13C2-PFHxA	IS	72.6	25 - 150		B22F113	28-Jun-22	0.240 L	30-Jun-22 08:25	1
13C4-PFHpA	IS	60.4	25 - 150		B22F113	28-Jun-22	0.240 L	30-Jun-22 08:25	1
13C3-PFHxS	IS	73.3	25 - 150		B22F113	28-Jun-22	0.240 L	30-Jun-22 08:25	1
13C2-6:2 FTS	IS	89.6	25 - 150		B22F113	28-Jun-22	0.240 L	30-Jun-22 08:25	1
13C2-PFOA	IS	97.8	25 - 150		B22F113	28-Jun-22	0.240 L	30-Jun-22 08:25	1
13C5-PFNA	IS	68.5	25 - 150		B22F113	28-Jun-22	0.240 L	30-Jun-22 08:25	1
13C8-PFOSA	IS	49.1	10 - 150		B22F113	28-Jun-22	0.240 L	30-Jun-22 08:25	1
13C8-PFOS	IS	77.9	25 - 150		B22F113	28-Jun-22	0.240 L	30-Jun-22 08:25	1

Sample ID: OW-63

PFAS Isotope Dilution Method

Client Data

Name: Hall Environmental Analytical Laboratory
Project: 2206528
Location: 2206528-002I
Matrix: Aqueous
Date Collected: 08-Jun-22 08:15

Laboratory Data

Lab Sample: 2206101-01
Date Received: 10-Jun-22 08:58
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFDA	IS	72.3	25 - 150		B22F113	28-Jun-22	0.240 L	30-Jun-22 08:25	1
13C2-8:2 FTS	IS	67.1	25 - 150		B22F113	28-Jun-22	0.240 L	30-Jun-22 08:25	1
d3-MeFOSAA	IS	72.0	25 - 150		B22F113	28-Jun-22	0.240 L	30-Jun-22 08:25	1
d5-EtFOSAA	IS	68.4	25 - 150		B22F113	28-Jun-22	0.240 L	30-Jun-22 08:25	1
13C2-PFUnA	IS	62.6	25 - 150		B22F113	28-Jun-22	0.240 L	30-Jun-22 08:25	1
13C2-PFDoA	IS	58.8	25 - 150		B22F113	28-Jun-22	0.240 L	30-Jun-22 08:25	1
13C2-PFTeDA	IS	42.9	20 - 150		B22F113	28-Jun-22	0.240 L	30-Jun-22 08:25	1

RL - Reporting limit

Results reported to RL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

Vista
an Enthalpy Analytical company

Sample ID: Equipment Blank-PFAS

PFAS Isotope Dilution Method

Client Data

Name: Hall Environmental Analytical Laboratory
Project: 2206528
Location: 2206528-008A
Matrix: Aqueous
Date Collected: 08-Jun-22 08:15

Laboratory Data

Lab Sample: 2206101-02
Date Received: 10-Jun-22 08:58
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	2.04		B22F113	28-Jun-22	0.246 L	30-Jun-22 08:36	1
PFPeA	2706-90-3	ND	2.04		B22F113	28-Jun-22	0.246 L	30-Jun-22 08:36	1
PFBS	375-73-5	ND	2.04		B22F113	28-Jun-22	0.246 L	30-Jun-22 08:36	1
4:2 FTS	757124-72-4	ND	2.04		B22F113	28-Jun-22	0.246 L	30-Jun-22 08:36	1
PFHxA	307-24-4	ND	2.04		B22F113	28-Jun-22	0.246 L	30-Jun-22 08:36	1
PFPeS	2706-91-4	ND	2.04		B22F113	28-Jun-22	0.246 L	30-Jun-22 08:36	1
PFHpA	375-85-9	ND	2.04		B22F113	28-Jun-22	0.246 L	30-Jun-22 08:36	1
PFHxS	355-46-4	ND	2.04		B22F113	28-Jun-22	0.246 L	30-Jun-22 08:36	1
6:2 FTS	27619-97-2	ND	2.04		B22F113	28-Jun-22	0.246 L	30-Jun-22 08:36	1
PFOA	335-67-1	ND	2.04		B22F113	28-Jun-22	0.246 L	30-Jun-22 08:36	1
PFHpS	375-92-8	ND	2.04		B22F113	28-Jun-22	0.246 L	30-Jun-22 08:36	1
PFNA	375-95-1	ND	2.04		B22F113	28-Jun-22	0.246 L	30-Jun-22 08:36	1
PFOSA	754-91-6	ND	2.04		B22F113	28-Jun-22	0.246 L	30-Jun-22 08:36	1
PFOS	1763-23-1	ND	2.04		B22F113	28-Jun-22	0.246 L	30-Jun-22 08:36	1
PFDA	335-76-2	ND	2.04		B22F113	28-Jun-22	0.246 L	30-Jun-22 08:36	1
8:2 FTS	39108-34-4	ND	2.04		B22F113	28-Jun-22	0.246 L	30-Jun-22 08:36	1
PFNS	68259-12-1	ND	2.04		B22F113	28-Jun-22	0.246 L	30-Jun-22 08:36	1
MeFOSAA	2355-31-9	ND	2.04		B22F113	28-Jun-22	0.246 L	30-Jun-22 08:36	1
EtFOSAA	2991-50-6	ND	2.04		B22F113	28-Jun-22	0.246 L	30-Jun-22 08:36	1
PFUnA	2058-94-8	ND	2.04		B22F113	28-Jun-22	0.246 L	30-Jun-22 08:36	1
PFDS	335-77-3	ND	2.04		B22F113	28-Jun-22	0.246 L	30-Jun-22 08:36	1
PFDoA	307-55-1	ND	2.04		B22F113	28-Jun-22	0.246 L	30-Jun-22 08:36	1
PFTrDA	72629-94-8	ND	2.04		B22F113	28-Jun-22	0.246 L	30-Jun-22 08:36	1
PFTeDA	376-06-7	ND	2.04		B22F113	28-Jun-22	0.246 L	30-Jun-22 08:36	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	79.0	25 - 150		B22F113	28-Jun-22	0.246 L	30-Jun-22 08:36	1
13C3-PFPeA	IS	87.4	25 - 150		B22F113	28-Jun-22	0.246 L	30-Jun-22 08:36	1
13C3-PFBS	IS	75.8	25 - 150		B22F113	28-Jun-22	0.246 L	30-Jun-22 08:36	1
13C2-4:2 FTS	IS	107	25 - 150		B22F113	28-Jun-22	0.246 L	30-Jun-22 08:36	1
13C2-PFHxA	IS	77.3	25 - 150		B22F113	28-Jun-22	0.246 L	30-Jun-22 08:36	1
13C4-PFHpA	IS	71.3	25 - 150		B22F113	28-Jun-22	0.246 L	30-Jun-22 08:36	1
13C3-PFHxS	IS	84.6	25 - 150		B22F113	28-Jun-22	0.246 L	30-Jun-22 08:36	1
13C2-6:2 FTS	IS	87.0	25 - 150		B22F113	28-Jun-22	0.246 L	30-Jun-22 08:36	1
13C2-PFOA	IS	91.4	25 - 150		B22F113	28-Jun-22	0.246 L	30-Jun-22 08:36	1
13C5-PFNA	IS	82.6	25 - 150		B22F113	28-Jun-22	0.246 L	30-Jun-22 08:36	1
13C8-PFOSA	IS	58.3	10 - 150		B22F113	28-Jun-22	0.246 L	30-Jun-22 08:36	1
13C8-PFOS	IS	72.3	25 - 150		B22F113	28-Jun-22	0.246 L	30-Jun-22 08:36	1

Sample ID: Equipment Blank-PFAS

PFAS Isotope Dilution Method

Client Data

Name:	Hall Environmental Analytical Laboratory	Matrix:	Aqueous
Project:	2206528	Date Collected:	08-Jun-22 08:15
Location:	2206528-008A		

Laboratory Data

Lab Sample:	2206101-02	Column:	BEH C18
Date Received:	10-Jun-22 08:58		

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFDA	IS	77.7	25 - 150		B22F113	28-Jun-22	0.246 L	30-Jun-22 08:36	1
13C2-8:2 FTS	IS	64.4	25 - 150		B22F113	28-Jun-22	0.246 L	30-Jun-22 08:36	1
d3-MeFOSAA	IS	77.5	25 - 150		B22F113	28-Jun-22	0.246 L	30-Jun-22 08:36	1
d5-EtFOSAA	IS	72.8	25 - 150		B22F113	28-Jun-22	0.246 L	30-Jun-22 08:36	1
13C2-PFUnA	IS	65.5	25 - 150		B22F113	28-Jun-22	0.246 L	30-Jun-22 08:36	1
13C2-PFDoA	IS	67.4	25 - 150		B22F113	28-Jun-22	0.246 L	30-Jun-22 08:36	1
13C2-PFTeDA	IS	68.7	20 - 150		B22F113	28-Jun-22	0.246 L	30-Jun-22 08:36	1

RL - Reporting limit

Results reported to RL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank
Conc.	Concentration
CRS	Cleanup Recovery Standard
D	Dilution
DL	Detection Limit
E	The associated compound concentration exceeded the calibration range of the instrument
H	Recovery and/or RPD was outside laboratory acceptance limits
I	Chemical Interference
IS	Internal Standard
J	The amount detected is below the Reporting Limit/LOQ
LOD	Limit of Detection
LOQ	Limit of Quantitation
M	Estimated Maximum Possible Concentration (CA Region 2 projects only)
MDL	Method Detection Limit
NA	Not applicable
ND	Not Detected
OPR	Ongoing Precision and Recovery sample
P	The reported concentration may include contribution from chlorinated diphenyl ether(s).
Q	The ion transition ratio is outside of the acceptance criteria.
RL	Reporting Limit
RL	For 537.1, the reported RLs are the MRLs.
TEQ	Toxic Equivalency, sum of the toxic equivalency factors (TEF) multiplied by the sample concentrations.
TEQMax	TEQ calculation that uses the detection limit as the concentration for non-detects
TEQMin	TEQ calculation that uses zero as the concentration for non-detects
TEQRisk	TEQ calculation that uses ½ the detection limit as the concentration for non-detects
U	Not Detected (specific projects only)
*	See Cover Letter

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

Vista Analytical Laboratory Certifications

Accrediting Authority	Certificate Number
Alaska Department of Environmental Conservation	17-013
Arkansas Department of Environmental Quality	21-023-0
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Department of Health	E87777
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2020018
Massachusetts Department of Environmental Protection	M-CA413
Michigan Department of Environmental Quality	9932
Minnesota Department of Health	2211390
New Hampshire Environmental Accreditation Program	207721
New Jersey Department of Environmental Protection	CA003
New York Department of Health	11411
Ohio Environmental Protection Agency	87778
Oregon Laboratory Accreditation Program	4042-021
Pennsylvania Department of Environmental Protection	018
Texas Commission on Environmental Quality	T104704189-22-13
Vermont Department of Health	VT-4042
Virginia Department of General Services	11276
Washington Department of Ecology	C584
Wisconsin Department of Natural Resources	998036160

Current certificates and lists of licensed parameters are located in the Quality Assurance office and are available upon request.

NELAP Accredited Test Methods

MATRIX: Air	
Description of Test	**Method**
Determination of Polychlorinated p- Dioxins & Polychlorinated Dibenzofurans	EPA 23
Polychlorinated Dibenzodioxins in Ambient Air by GC/HRMS	EPA TO-9A

MATRIX: Biological Tissue	
Description of Test	**Method**
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	PFAS Isotope Dilution
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Drinking Water	
Description of Test	**Method**
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613/1613B
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	PFAS Isotope Dilution
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537.1
Determination of Per- and Polyfluoroalkyl Substances in Drinking Water by Isotope Dilution Anion Exchange Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry	EPA 533
Perfluorooctanesulonate (PFOS) and Perfluorooctanoate (PFOA) - Method for Unfiltered Samples Using Solid Phase Extraction and Liquid Chromatography/Mass Spectrometry	ISO 25101 2009

MATRIX: Non-Potable Water	
Description of Test	**Method**
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	PFAS Isotope Dilution
Dioxin by GC/HRMS	EPA 613
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Solids	
Description of Test	**Method**
Tetra-Octa Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	PFAS Isotope Dilution
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

Released to Imaging: 4/21/2023 9:40:26 AM

Received by OCD: 4/21/2023 9:21:57 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

2206101

1.1°C

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

COMPANY: Vista Analytical Labor	Vista Analytical Laboratory	PHONE: (916) 673-1520	
ADDRESS: 1104 Windfield Way		ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: El Dorado Hills, CA 95762			

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# BOTTLES	ANALYTICAL COMMENTS
1	2206526-002I	OW-63	250HDPE	Aqueous	6/8/2022 8:15:00 AM	1	24 compound PFAS testing unchlorinated sample - 3 and MDL
2	2206526-008A	Equipment Blank- PFAS	250HDPE	Aqueous	6/8/2022 8:15:00 AM	1	24 compound PFAS testing unchlorinated sample - 3 and MDL

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By:	Date: 6/9/2022	Time: 1:15 PM	Received By: Kelsie Underwood	Date: 6/10/22	Time: 0850
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard RUSH 1st BD 2nd BD 3rd BD

REPORT TRANSMITTAL DESIRED: HARDCOPY (additional cost) FAX EMAIL ONLINE

FOR LAB USE ONLY

Temp of samples: °C Intact Cool

Comments:

Released to Imaging: 4/21/2023 9:40:26 AM

Vista Analytical Laboratory

Sample Log-In Checklist

Page # 1 of 1

Vista Work Order #: 2206121 TAT 5d

Samples Arrival:	**Date/Time** 06/10/22 0858		**Initials:** KW		**Location:** WR-2 **Shelf/Rack:** N/A		
Delivered By:	(FedEx)	UPS	On Trac	GLS	DHL	Hand Delivered	Other
Preservation:	Ice	(Blue Ice)		Techni Ice	Dry Ice	None	
Temp °C: 1.2 (uncorrected) **Temp °C:** 1.1 (corrected)	**Probe used:** Y / (N)			**Thermometer ID:** IR-3			

	YES	NO	NA
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Airbill / Trk # 7770 9099 1501	✓		
Shipping Documentation Present?	✓		
Shipping Container: Vista / (Client) / Retain / (Return) / Dispose	✓		
Chain of Custody / Sample Documentation Present?	✓		
Chain of Custody / Sample Documentation Complete?	✓		
Holding Time Acceptable?	✓		

Logged In:	**Date/Time** 06/13/22 0735	**Initials:** KW	**Location:** R-13 **Shelf/Rack:** A-4
COC Anomaly/Sample Acceptance Form completed?		✓	✓

Comments:

Released to Imaging: 4/21/2023 9:40:26 AM

CoC/Label Reconciliation Report WO# 2206101

Lab Number	CoC Sample ID		Sample Area	Sample Date/Time		Container	Bottle Qty	Sample Comments
2206101-01	A [illegible]	☑	[illegible]	[illegible]	☑	40DPE Bottle, 250 mL	Aqueous	
2206101-02	A Equipment Blank PFAS	☑	[illegible]	[illegible]	☑	40DPE Bottle, 250 mL	Aqueous	

Checkmarks indicate that information on the COC reconciled with the sample label.
Any discrepancies are noted in the following columns.

	Yes	No	NA
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Adequate Sample Volume?	✓		
Container Type Appropriate for Analysis(es)	✓		

Comments: ① ESS Trizma label
② no headspace volume

Preservation Documented: Na2S2O3 (Trizma) NaOH/ZnOAc Nitric Other

Verified by/Date: [illegible]

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206528**

15-Aug-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB-68127** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**

Client ID: **PBW** Batch ID: **68127** RunNo: **88823**

Prep Date: **6/15/2022** Analysis Date: **6/16/2022** SeqNo: **3153628** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LCSLL-68127** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**

Client ID: **BatchQC** Batch ID: **68127** RunNo: **88823**

Prep Date: **6/15/2022** Analysis Date: **6/16/2022** SeqNo: **3153629** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0019	0.0030	0.002000	0	93.1	50	150			J
Beryllium	0.0021	0.0020	0.002000	0	104	50	150			
Cadmium	0.0022	0.0020	0.002000	0	111	50	150			
Chromium	0.0067	0.0060	0.006000	0	111	50	150			
Cobalt	0.0080	0.0060	0.006000	0	133	50	150			
Nickel	0.0050	0.010	0.005000	0	99.4	50	150			J
Silver	0.0054	0.0050	0.005000	0	108	50	150			
Vanadium	0.0097	0.050	0.01000	0	96.8	50	150			J
Zinc	0.011	0.010	0.01000	0	106	50	150			

Sample ID: **LCS-68127** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**

Client ID: **LCSW** Batch ID: **68127** RunNo: **88823**

Prep Date: **6/15/2022** Analysis Date: **6/16/2022** SeqNo: **3153630** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0030	0.5000	0	101	85	115			
Beryllium	0.52	0.0020	0.5000	0	105	85	115			
Cadmium	0.49	0.0020	0.5000	0	97.9	85	115			
Chromium	0.50	0.0060	0.5000	0	99.1	85	115			
Cobalt	0.49	0.0060	0.5000	0	97.1	85	115			
Nickel	0.48	0.010	0.5000	0	96.0	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			
Vanadium	0.50	0.050	0.5000	0	99.9	85	115			
Zinc	0.48	0.010	0.5000	0	96.6	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206528**

15-Aug-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **2206528-001DMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **EB-6-8-22**	Batch ID: **68127**	RunNo: **88823**
Prep Date: **6/15/2022**	Analysis Date: **6/16/2022**	SeqNo: **3153642** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.53	0.0030	0.5000	0	106	70	130			
Beryllium	0.53	0.0020	0.5000	0	106	70	130			
Cadmium	0.52	0.0020	0.5000	0	103	70	130			
Chromium	0.52	0.0060	0.5000	0	104	70	130			
Cobalt	0.52	0.0060	0.5000	0	103	70	130			
Nickel	0.51	0.010	0.5000	0	102	70	130			
Silver	0.11	0.0050	0.1000	0	108	70	130			
Vanadium	0.52	0.050	0.5000	0	105	70	130			
Zinc	0.52	0.010	0.5000	0	105	70	130			

Sample ID: **2206528-001DMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Metals**
Client ID: **EB-6-8-22**	Batch ID: **68127**	RunNo: **88823**
Prep Date: **6/15/2022**	Analysis Date: **6/16/2022**	SeqNo: **3153643** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0030	0.5000	0	101	70	130	4.88	20	
Beryllium	0.53	0.0020	0.5000	0	106	70	130	0.580	20	
Cadmium	0.49	0.0020	0.5000	0	98.1	70	130	5.06	20	
Chromium	0.49	0.0060	0.5000	0	98.3	70	130	5.41	20	
Cobalt	0.49	0.0060	0.5000	0	98.8	70	130	4.25	20	
Nickel	0.48	0.010	0.5000	0	96.9	70	130	5.12	20	
Silver	0.10	0.0050	0.1000	0	102	70	130	5.10	20	
Vanadium	0.50	0.050	0.5000	0	101	70	130	3.57	20	
Zinc	0.50	0.010	0.5000	0	99.5	70	130	4.97	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206528**

15-Aug-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**

Client ID: **PBW** Batch ID: **B88662** RunNo: **88662**

Prep Date: Analysis Date: **6/12/2022** SeqNo: **3146923** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**

Client ID: **BatchQC** Batch ID: **B88662** RunNo: **88662**

Prep Date: Analysis Date: **6/12/2022** SeqNo: **3146924** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0017	0.0020	0.002000	0	87.2	50	150			J
Beryllium	0.0021	0.0020	0.002000	0	103	50	150			
Cadmium	0.0019	0.0020	0.002000	0	96.0	50	150			J
Chromium	0.0067	0.0060	0.006000	0	112	50	150			
Cobalt	0.0072	0.0060	0.006000	0	120	50	150			
Nickel	0.0055	0.010	0.005000	0	111	50	150			J
Silver	0.0055	0.0050	0.005000	0	110	50	150			
Vanadium	0.011	0.050	0.01000	0	114	50	150			J
Zinc	0.014	0.010	0.01000	0	144	50	150			

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**

Client ID: **LCSW** Batch ID: **B88662** RunNo: **88662**

Prep Date: Analysis Date: **6/12/2022** SeqNo: **3146925** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.55	0.0020	0.5000	0	110	85	115			
Beryllium	0.52	0.0020	0.5000	0	105	85	115			
Cadmium	0.53	0.0020	0.5000	0	107	85	115			
Chromium	0.54	0.0060	0.5000	0	108	85	115			
Cobalt	0.54	0.0060	0.5000	0	107	85	115			
Nickel	0.52	0.010	0.5000	0	104	85	115			
Silver	0.11	0.0050	0.1000	0	111	85	115			
Vanadium	0.56	0.050	0.5000	0	111	85	115			
Zinc	0.56	0.010	0.5000	0	111	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206528**

15-Aug-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB-68127**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **68127**	RunNo: **88865**
Prep Date: **6/15/2022**	Analysis Date: **6/20/2022**	SeqNo: **3155291** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **MSLCSLL-68127**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **68127**	RunNo: **88865**
Prep Date: **6/15/2022**	Analysis Date: **6/20/2022**	SeqNo: **3155292** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00096	0.0010	0.001000	0	96.0	50	150			J
Arsenic	0.0011	0.0010	0.001000	0	105	50	150			
Lead	0.00051	0.00050	0.0005000	0	102	50	150			
Selenium	0.00084	0.0010	0.001000	0	84.1	50	150			J

Sample ID: **MSLCS-68127**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **68127**	RunNo: **88865**
Prep Date: **6/15/2022**	Analysis Date: **6/20/2022**	SeqNo: **3155293** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.6	85	115			
Arsenic	0.025	0.0010	0.02500	0	101	85	115			
Lead	0.012	0.00050	0.01250	0	97.5	85	115			
Selenium	0.024	0.0010	0.02500	0	97.4	85	115			

Sample ID: **2206528-003DMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Metals**
Client ID: **OW-64**	Batch ID: **68127**	RunNo: **88865**
Prep Date: **6/15/2022**	Analysis Date: **6/20/2022**	SeqNo: **3155350** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.028	0.0010	0.02500	0	110	70	130			
Lead	0.010	0.00050	0.01250	0.0007734	76.9	70	130			

Sample ID: **2206528-003DMSDL**	SampType: **MSD**	TestCode: **EPA 200.8: Metals**
Client ID: **OW-64**	Batch ID: **68127**	RunNo: **88865**
Prep Date: **6/15/2022**	Analysis Date: **6/20/2022**	SeqNo: **3155351** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.027	0.0010	0.02500	0	106	70	130	3.40	20	
Lead	0.010	0.00050	0.01250	0.0007734	77.1	70	130	0.289	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206528**

15-Aug-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **2206528-003DMSLL** SampType: **MS** TestCode: **EPA 200.8: Metals**

Client ID: **OW-64** Batch ID: **68127** RunNo: **88865**

Prep Date: **6/15/2022** Analysis Date: **6/20/2022** SeqNo: **3156050** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.029	0.0050	0.02500	0.002555	107	70	130			
Selenium	0.024	0.0050	0.02500	0	96.8	70	130			

Sample ID: **2206528-003DMSDL** SampType: **MSD** TestCode: **EPA 200.8: Metals**

Client ID: **OW-64** Batch ID: **68127** RunNo: **88865**

Prep Date: **6/15/2022** Analysis Date: **6/20/2022** SeqNo: **3156051** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.030	0.0050	0.02500	0.002555	109	70	130	1.78	20	
Selenium	0.026	0.0050	0.02500	0	103	70	130	5.87	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206528**

15-Aug-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A88688**	RunNo: **88688**
Prep Date:	Analysis Date: **6/13/2022**	SeqNo: **3148253** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A88688**	RunNo: **88688**
Prep Date:	Analysis Date: **6/13/2022**	SeqNo: **3148254** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0011	0.0010	0.001000	0	110	50	150			
Arsenic	0.0011	0.0010	0.001000	0	105	50	150			
Lead	0.00053	0.00050	0.0005000	0	105	50	150			
Selenium	0.00087	0.0010	0.001000	0	86.6	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A88688**	RunNo: **88688**
Prep Date:	Analysis Date: **6/13/2022**	SeqNo: **3148255** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	102	85	115			
Arsenic	0.025	0.0010	0.02500	0	98.0	85	115			
Lead	0.012	0.00050	0.01250	0	96.5	85	115			
Selenium	0.024	0.0010	0.02500	0	96.5	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206528**
15-Aug-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB-68088**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **PBW**	Batch ID: **68088**	RunNo: **88725**							
Prep Date: **6/14/2022**	Analysis Date: **6/14/2022**	SeqNo: **3150004**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-68088**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **BatchQC**	Batch ID: **68088**	RunNo: **88725**							
Prep Date: **6/14/2022**	Analysis Date: **6/14/2022**	SeqNo: **3150005**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00019	0.00020	0.0001500	0	124	50	150			J

Sample ID: **LCS-68088**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **LCSW**	Batch ID: **68088**	RunNo: **88725**							
Prep Date: **6/14/2022**	Analysis Date: **6/14/2022**	SeqNo: **3150006**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0052	0.00020	0.005000	0	104	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206528**

15-Aug-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB-68078**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **68078**	RunNo: **88730**
Prep Date: **6/14/2022**	Analysis Date: **6/14/2022**	SeqNo: **3150157** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **MB-68078**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **68078**	RunNo: **88730**
Prep Date: **6/14/2022**	Analysis Date: **6/14/2022**	SeqNo: **3150158** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-68078**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW**	Batch ID: **68078**	RunNo: **88730**
Prep Date: **6/14/2022**	Analysis Date: **6/14/2022**	SeqNo: **3150159** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.12	0.010	0.1000	0	119	70	130			

Sample ID: **LCSD-68078**	SampType: **LCSD**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSS02**	Batch ID: **68078**	RunNo: **88730**
Prep Date: **6/14/2022**	Analysis Date: **6/14/2022**	SeqNo: **3150161** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.12	0.010	0.1000	0	117	70	130	1.67	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206528**

15-Aug-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB-68038**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **PBW**	Batch ID: **68038**	RunNo: **88762**
Prep Date: **6/10/2022**	Analysis Date: **6/15/2022**	SeqNo: **3152581** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.029	0.064								J
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.038		0.03750		101	42.2	138			

Sample ID: **LCS-68038**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSW**	Batch ID: **68038**	RunNo: **88762**
Prep Date: **6/10/2022**	Analysis Date: **6/15/2022**	SeqNo: **3152583** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	1.2	0.064	0.1875	0	642	31.7	75.4			S
Surr: DNOP	0.015		0.01875		81.2	42.2	138			

Sample ID: **LCSD-68038**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02**	Batch ID: **68038**	RunNo: **88762**
Prep Date: **6/10/2022**	Analysis Date: **6/15/2022**	SeqNo: **3152801** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.15	0.064	0.1875	0	77.6	31.7	75.4	157	20	RS
Surr: DNOP	0.019		0.01875		99.9	42.2	138	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206528**

15-Aug-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **A88732**	RunNo: **88732**
Prep Date:	Analysis Date: **6/14/2022**	SeqNo: **3150185** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.48	0.050	0.5000	0	96.2	80	120			
Surr: BFB	40		20.00		199	70	130			S

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **A88732**	RunNo: **88732**
Prep Date:	Analysis Date: **6/14/2022**	SeqNo: **3150186** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	19		20.00		97.4	70	130			

Sample ID: **2206528-001AMS**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **EB-6-8-22**	Batch ID: **A88732**	RunNo: **88732**
Prep Date:	Analysis Date: **6/14/2022**	SeqNo: **3150188** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.47	0.050	0.5000	0	94.2	70	130			
Surr: BFB	39		20.00		194	70	130			S

Sample ID: **2206528-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **EB-6-8-22**	Batch ID: **A88732**	RunNo: **88732**
Prep Date:	Analysis Date: **6/14/2022**	SeqNo: **3150189** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.45	0.050	0.5000	0	90.2	70	130	4.38	20	
Surr: BFB	37		20.00		187	70	130	0	0	S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206528**

15-Aug-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R88822**	RunNo: **88822**
Prep Date:	Analysis Date: **6/16/2022**	SeqNo: **3153564** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	102	70	130			
Toluene	20	1.0	20.00	0	98.9	70	130			
Chlorobenzene	20	1.0	20.00	0	101	70	130			
1,1-Dichloroethene	20	1.0	20.00	0	102	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	102	70	130			
Surr: 1,2-Dichloroethane-d4	9.5		10.00		94.9	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.0	70	130			
Surr: Dibromofluoromethane	11		10.00		114	70	130			
Surr: Toluene-d8	9.1		10.00		90.6	70	130			

Sample ID: **2206528-003ams**	SampType: **MS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **OW-64**	Batch ID: **R88822**	RunNo: **88822**
Prep Date:	Analysis Date: **6/16/2022**	SeqNo: **3153570** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	32	1.0	20.00	12.08	98.8	70	130			
Toluene	20	1.0	20.00	0	101	70	130			
Chlorobenzene	20	1.0	20.00	0	102	70	130			
1,1-Dichloroethene	18	1.0	20.00	0	92.0	70	130			
Trichloroethene (TCE)	22	1.0	20.00	0	112	70	130			
Surr: 1,2-Dichloroethane-d4	9.4		10.00		93.9	70	130			
Surr: 4-Bromofluorobenzene	9.2		10.00		91.7	70	130			
Surr: Dibromofluoromethane	11		10.00		112	70	130			
Surr: Toluene-d8	9.2		10.00		92.1	70	130			

Sample ID: **2206528-003amsd**	SampType: **MSD**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **OW-64**	Batch ID: **R88822**	RunNo: **88822**
Prep Date:	Analysis Date: **6/16/2022**	SeqNo: **3153571** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	29	1.0	20.00	12.08	84.4	70	130	9.48	20	
Toluene	19	1.0	20.00	0	93.6	70	130	7.40	20	
Chlorobenzene	19	1.0	20.00	0	95.5	70	130	6.20	20	
1,1-Dichloroethene	16	1.0	20.00	0	82.0	70	130	11.5	20	
Trichloroethene (TCE)	20	1.0	20.00	0	102	70	130	9.39	20	
Surr: 1,2-Dichloroethane-d4	9.2		10.00		92.1	70	130	0	0	
Surr: 4-Bromofluorobenzene	9.0		10.00		90.4	70	130	0	0	
Surr: Dibromofluoromethane	11		10.00		110	70	130	0	0	
Surr: Toluene-d8	9.5		10.00		94.7	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206528**

15-Aug-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R88822**	RunNo: **88822**
Prep Date:	Analysis Date: **6/16/2022**	SeqNo: **3153586** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		99.6	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		97.7	70	130			
Surr: Dibromofluoromethane	11		10.00		113	70	130			
Surr: Toluene-d8	9.5		10.00		94.8	70	130			

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **A88912**	RunNo: **88912**
Prep Date:	Analysis Date: **6/21/2022**	SeqNo: **3157839** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206528**

15-Aug-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **A88912**	RunNo: **88912**
Prep Date:	Analysis Date: **6/21/2022**	SeqNo: **3157839** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	9.6		10.00		96.0	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	9.6		10.00		95.6	70	130			
Surr: Toluene-d8	9.4		10.00		93.7	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **A88912**	RunNo: **88912**
Prep Date:	Analysis Date: **6/21/2022**	SeqNo: **3157862** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methylene Chloride	ND	3.0								
Surr: 1,2-Dichloroethane-d4	9.9		10.00		98.9	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	9.8		10.00		97.7	70	130			
Surr: Toluene-d8	10		10.00		103	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206528**

15-Aug-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **mb-68135**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **68135**	RunNo: **89063**
Prep Date: **6/15/2022**	Analysis Date: **6/22/2022**	SeqNo: **3163448** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Anthracene	ND	10								
Benz(a)anthracene	ND	5.0								
Benzo(b)fluoranthene	ND	10								
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	10								
2,4-Dinitrophenol	ND	20								
Fluoranthene	ND	10								
Fluorene	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
1-Methylnaphthalene	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
Naphthalene	ND	5.0								
Phenanthrene	ND	10								
Phenol	ND	20								
Pyrene	ND	10								
Pyridine	ND	40								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	120		200.0		60.0	29.4	87.7			
Surr: Phenol-d5	94		200.0		46.9	28.5	64.7			
Surr: 2,4,6-Tribromophenol	130		200.0		64.4	18.6	129			
Surr: Nitrobenzene-d5	76		100.0		75.7	36.9	103			
Surr: 2-Fluorobiphenyl	76		100.0		76.4	38.1	99.9			
Surr: 4-Terphenyl-d14	95		100.0		94.8	48	155			

Sample ID: **lcs-68135**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **68135**	RunNo: **89063**
Prep Date: **6/15/2022**	Analysis Date: **6/22/2022**	SeqNo: **3163449** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206528**

15-Aug-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **lcs-68135**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **68135**	RunNo: **89063**
Prep Date: **6/15/2022**	Analysis Date: **6/22/2022**	SeqNo: **3163449** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	73	10	100.0	0	72.6	21.3	104			
1,4-Dichlorobenzene	65	5.0	100.0	0	64.7	15	89.8			
Phenol	95	20	200.0	0	47.3	17	61.1			
Pyrene	100	10	100.0	0	103	61	123			
Surr: 2-Fluorophenol	110		200.0		56.5	29.4	87.7			
Surr: Phenol-d5	90		200.0		44.9	28.5	64.7			
Surr: 2,4,6-Tribromophenol	150		200.0		73.2	18.6	129			
Surr: Nitrobenzene-d5	74		100.0		74.5	36.9	103			
Surr: 2-Fluorobiphenyl	71		100.0		71.0	38.1	99.9			
Surr: 4-Terphenyl-d14	110		100.0		105	48	155			

Sample ID: **lcsd-68135**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **68135**	RunNo: **89063**
Prep Date: **6/15/2022**	Analysis Date: **6/22/2022**	SeqNo: **3163450** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	76	10	100.0	0	76.2	21.3	104	4.75	45.3	
1,4-Dichlorobenzene	68	5.0	100.0	0	68.3	15	89.8	5.40	39.6	
Phenol	97	20	200.0	0	48.4	17	61.1	2.29	42.5	
Pyrene	100	10	100.0	0	102	61	123	0.461	11.8	
Surr: 2-Fluorophenol	120		200.0		57.6	29.4	87.7	0	0	
Surr: Phenol-d5	90		200.0		45.2	28.5	64.7	0	0	
Surr: 2,4,6-Tribromophenol	150		200.0		73.9	18.6	129	0	0	
Surr: Nitrobenzene-d5	75		100.0		75.2	36.9	103	0	0	
Surr: 2-Fluorobiphenyl	74		100.0		73.6	38.1	99.9	0	0	
Surr: 4-Terphenyl-d14	100		100.0		103	48	155	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206528**

15-Aug-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **mb-68135**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **68135**	RunNo: **88923**
Prep Date: **6/15/2022**	Analysis Date: **6/21/2022**	SeqNo: **3157888** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.30								
1-Methylnaphthalene	ND	0.30								
2-Methylnaphthalene	ND	0.30								
Acenaphthene	ND	0.30								
Fluorene	ND	0.30								
Phenanthrene	ND	0.30								
Anthracene	ND	0.30								
Fluoranthene	ND	0.30								
Pyrene	ND	1.0								
Benz(a)anthracene	ND	0.30								
Chrysene	ND	0.30								
Benzo(b)fluoranthene	ND	0.30								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	81		100.0		81.2	31.6	100			
Surr: 2,4,6-Tribromophenol	88		200.0		44.2	22	101			
Surr: 2-Fluorobiphenyl	76		100.0		76.5	26.7	90.1			
Surr: 4-Terphenyl-d14	120		100.0		120	72.3	147			

Sample ID: **lcs-68135 lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **68135**	RunNo: **88923**
Prep Date: **6/15/2022**	Analysis Date: **6/21/2022**	SeqNo: **3157889** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.82	0.10	2.000	0	41.0	20.2	48.4			
Naphthalene	1.3	0.30	2.000	0	66.0	21.3	79.9			
1-Methylnaphthalene	1.3	0.30	2.000	0	65.0	22.2	80.3			
2-Methylnaphthalene	1.3	0.30	2.000	0	65.0	20.6	80.1			
Acenaphthene	1.4	0.30	2.000	0	70.0	29.8	82.7			
Fluorene	1.5	0.30	2.000	0	75.0	33.3	86			
Phenanthrene	1.5	0.30	2.000	0	76.0	38.2	93.9			
Anthracene	1.7	0.30	2.000	0	83.0	41.1	95.6			
Fluoranthene	2.0	0.30	2.000	0	99.0	52.9	123			
Pyrene	1.7	1.0	2.000	0	84.0	51	113			
Benz(a)anthracene	2.1	0.30	2.000	0	105	51	147			
Chrysene	1.6	0.30	2.000	0	81.0	55.3	115			
Benzo(b)fluoranthene	1.7	0.30	2.000	0	86.0	44.4	136			
Indeno(1,2,3-cd)pyrene	1.5	0.30	2.000	0	74.0	31.4	165			
Surr: Nitrobenzene-d5	80		100.0		80.4	31.6	100			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206528**

15-Aug-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **lcs-68135 lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **68135**	RunNo: **88923**
Prep Date: **6/15/2022**	Analysis Date: **6/21/2022**	SeqNo: **3157889** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	88		200.0		44.0	22	101			
Surr: 2-Fluorobiphenyl	73		100.0		73.3	26.7	90.1			
Surr: 4-Terphenyl-d14	98		100.0		97.7	72.3	147			

Sample ID: **lcsd-68135 lf**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02**	Batch ID: **68135**	RunNo: **88923**
Prep Date: **6/15/2022**	Analysis Date: **6/21/2022**	SeqNo: **3157890** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.80	0.10	2.000	0	40.0	20.2	48.4	2.47	30.1	
Naphthalene	1.3	0.30	2.000	0	64.0	21.3	79.9	3.08	25.6	
1-Methylnaphthalene	1.3	0.30	2.000	0	64.0	22.2	80.3	1.55	25	
2-Methylnaphthalene	1.3	0.30	2.000	0	64.0	20.6	80.1	1.55	25	
Acenaphthene	1.4	0.30	2.000	0	70.0	29.8	82.7	0	27.8	
Fluorene	1.5	0.30	2.000	0	77.0	33.3	86	2.63	26.4	
Phenanthrene	1.6	0.30	2.000	0	80.0	38.2	93.9	5.13	27.9	
Anthracene	1.8	0.30	2.000	0	88.0	41.1	95.6	5.85	25.6	
Fluoranthene	2.1	0.30	2.000	0	104	52.9	123	4.93	22.8	
Pyrene	1.8	1.0	2.000	0	90.0	51	113	6.90	20	
Benz(a)anthracene	2.2	0.30	2.000	0	111	51	147	5.56	24.1	
Chrysene	1.7	0.30	2.000	0	84.0	55.3	115	3.64	20	
Benzo(b)fluoranthene	1.8	0.30	2.000	0	89.0	44.4	136	3.43	24.5	
Indeno(1,2,3-cd)pyrene	1.5	0.30	2.000	0	74.0	31.4	165	0	21.1	
Surr: Nitrobenzene-d5	79		100.0		78.6	31.6	100	0	0	
Surr: 2,4,6-Tribromophenol	89		200.0		44.5	22	101	0	0	
Surr: 2-Fluorobiphenyl	72		100.0		72.4	26.7	90.1	0	0	
Surr: 4-Terphenyl-d14	98		100.0		98.2	72.3	147	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Marathon Work Order Number: 2206528 RcptNo: 1

Received By: Cheyenne Cason 6/9/2022 7:20:00 AM

Completed By: Desiree Dominguez 6/9/2022 11:45:40 AM

Reviewed By: CMC 6/9/22
CMC 6/10/22

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☑ No ☐ NA ☐
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: 10 5 (<2 or >12 unless noted)
Adjusted? yes
Checked by: KPG 6·10·22

Pres TMC 6/9/22 6/10/22

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

16. Additional remarks: Added 0.5ml of HNO_3 to sample 0003F for pH <2 - KPG 6·10·22

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.5	Good				
2	3.9	Good				
3	3.8	Good				

Received by OCD: 4/21/2023 9:21:57 AM

Chain of Custody Record

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Client:	Marathon Gallup Refinery
Mailing Address:	92 Giant Crossing Road Jamestown, NM,87347
Phone #:	808-640-1823
Email or Fax#:	
QA/QC Package:	Standard ☐ Level 4 (Full Validation)
Accreditation:	☐ Az Compliance NELAC ☐ Other
EDD (Type)	

X Standard Rush

Project Name: **2022 GW Sampling 2nd Quarter**

Project #: **697-080-001**

Project Manager: Lesli Alexander/Mackensie Swift

Sampler:

On Ice: ☒ Yes ☐ No

#of Coolers: 3 DAD 6.9.22

Cooler Temp(including CF): See Checklist

HEAL No. 2206528

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.	See Analyte List	8260B: VOC	8270C: SVOC	8270C SIM: PAH, 1,4 Dioxane	8015: TPH GRO/DRO/MRO	E200.7: Metals	E200.7: Dissolved Metals	E245.1 Mercury	E504.1: EDB	E335.4: Cyanide Subbed		537.1: PFAS	SM 5201B: BOD	410.4: COD	SM9223B E. Coli
6-8	8:10		EB-6-8-22	14		-001	X	X	X	X	X	X	X	X	X	X					
6-8	8:15		OW-63	14		-002	X	X	X	X	X	X	X	X	X	X		X			
6-8	8:50		OW-64	14		-003	X	X	X	X	X	X	X	X	X	X			4/6		
6-8	9:20		OW-10	14		-004	X	X	X	X	X	X	X	X	X	X					
6-8	9:20		FB-6-8-22	3		-005	X	X										X	DAD 6/9/22	DAD 6.9.22	
6-8	—		DUP-6-8-22	14		-006	X	X	X	X	X	X	X	X	X	X					
			TRIP Blank DAD 6/9/22			-007															
			~~Equipment Blank~~ Equipment Blank			008												X	DAD 6.9.22			
			4/6/22	DAD 6.9.22														4/6/9			

	Time	Relinquished by	Received by	Via	Date	Time
8	7:00	Hilario Trejo		Courier	6/9/22	0720
	Time:	Relinquished by:	Received by:	Via:	Date	Time

① 3.4 +0.1 = 3.5°c
② 3.8 +0.1 = 3.9°c
③ 3.7 +0.1 = 3.8°c

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Released to Imaging: 4/21/2023 9:40:26 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

July 08, 2022

Lesli Alexander

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX: (505) 632-3911

RE: 2022 GW Sampling 2nd Qtr OrderNo.: 2206602

Dear Lesli Alexander:

Hall Environmental Analysis Laboratory received 10 sample(s) on 6/10/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **2206602**
Date: **7/8/2022**

CLIENT: Marathon
Project: 2022 GW Sampling 2nd Qtr

Analytical notes Regarding EPA Method 8270:
Sample OW-29 had poor surrogate recoveries due to the emulsive nature of the sample.

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-9-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/9/2022 9:00:00 AM
Lab ID: 2206602-001A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	6/15/2022 1:39:00 AM	C88732
Surr: BFB	95.1	0	70-130		%Rec	1	6/15/2022 1:39:00 AM	C88732
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	6/16/2022 4:27:39 PM	R88822
Toluene	ND	0.20	1.0		µg/L	1	6/16/2022 4:27:39 PM	R88822
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/16/2022 4:27:39 PM	R88822
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	6/16/2022 4:27:39 PM	R88822
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/16/2022 4:27:39 PM	R88822
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/16/2022 4:27:39 PM	R88822
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/16/2022 4:27:39 PM	R88822
Acetone	ND	2.5	10		µg/L	1	6/16/2022 4:27:39 PM	R88822
Bromomethane	ND	0.85	3.0		µg/L	1	6/16/2022 4:27:39 PM	R88822
2-Butanone	ND	2.0	10		µg/L	1	6/16/2022 4:27:39 PM	R88822
Carbon disulfide	ND	0.59	10		µg/L	1	6/16/2022 4:27:39 PM	R88822
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/16/2022 4:27:39 PM	R88822
Chloroform	ND	0.13	1.0		µg/L	1	6/16/2022 4:27:39 PM	R88822
Chloromethane	ND	0.41	3.0		µg/L	1	6/16/2022 4:27:39 PM	R88822
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/16/2022 4:27:39 PM	R88822
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/16/2022 4:27:39 PM	R88822
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/16/2022 4:27:39 PM	R88822
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/16/2022 4:27:39 PM	R88822
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/16/2022 4:27:39 PM	R88822
Methylene Chloride	370	5.0	30		µg/L	10	6/22/2022 12:57:30 PM	A88962
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/16/2022 4:27:39 PM	R88822
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/16/2022 4:27:39 PM	R88822
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	6/16/2022 4:27:39 PM	R88822
Styrene	ND	0.14	1.0		µg/L	1	6/16/2022 4:27:39 PM	R88822
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/16/2022 4:27:39 PM	R88822
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/16/2022 4:27:39 PM	R88822
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/16/2022 4:27:39 PM	R88822
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/16/2022 4:27:39 PM	R88822
Xylenes, Total	ND	0.37	1.5		µg/L	1	6/16/2022 4:27:39 PM	R88822
Surr: 1,2-Dichloroethane-d4	98.7	0	70-130		%Rec	1	6/16/2022 4:27:39 PM	R88822
Surr: 4-Bromofluorobenzene	99.5	0	70-130		%Rec	1	6/16/2022 4:27:39 PM	R88822
Surr: Dibromofluoromethane	125	0	70-130		%Rec	1	6/16/2022 4:27:39 PM	R88822
Surr: Toluene-d8	87.8	0	70-130		%Rec	1	6/16/2022 4:27:39 PM	R88822

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-9-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/9/2022 9:00:00 AM
Lab ID: 2206602-001B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	6/14/2022 2:49:21 PM	68078

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-9-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/9/2022 9:00:00 AM
Lab ID: 2206602-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.017	0.016	0.064	J	mg/L	1	6/20/2022 6:08:32 PM	68123
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	6/20/2022 6:08:32 PM	68123
Surr: DNOP	89.2	0	42.2-138		%Rec	1	6/20/2022 6:08:32 PM	68123
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	6/28/2022 11:47:20 AM	68135
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	6/28/2022 11:47:20 AM	68135
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	6/28/2022 11:47:20 AM	68135
Di-n-octyl phthalate	ND	12	20		µg/L	1	6/28/2022 11:47:20 AM	68135
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	6/28/2022 11:47:20 AM	68135
Diethyl phthalate	ND	6.0	10		µg/L	1	6/28/2022 11:47:20 AM	68135
Dimethyl phthalate	ND	6.0	10		µg/L	1	6/28/2022 11:47:20 AM	68135
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	6/28/2022 11:47:20 AM	68135
2,4-Dinitrophenol	ND	16	20		µg/L	1	6/28/2022 11:47:20 AM	68135
2-Methylphenol	ND	5.0	10		µg/L	1	6/28/2022 11:47:20 AM	68135
3+4-Methylphenol	ND	5.1	10		µg/L	1	6/28/2022 11:47:20 AM	68135
Phenol	ND	18	20		µg/L	1	6/28/2022 11:47:20 AM	68135
Pyridine	ND	14	60		µg/L	1	6/28/2022 11:47:20 AM	68135
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	6/28/2022 11:47:20 AM	68135
Surr: 2-Fluorophenol	57.9	0	29.4-87.7		%Rec	1	6/28/2022 11:47:20 AM	68135
Surr: Phenol-d5	44.4	0	28.5-64.7		%Rec	1	6/28/2022 11:47:20 AM	68135
Surr: 2,4,6-Tribromophenol	66.9	0	18.6-129		%Rec	1	6/28/2022 11:47:20 AM	68135
Surr: Nitrobenzene-d5	74.8	0	36.9-103		%Rec	1	6/28/2022 11:47:20 AM	68135
Surr: 2-Fluorobiphenyl	71.7	0	38.1-99.9		%Rec	1	6/28/2022 11:47:20 AM	68135
Surr: 4-Terphenyl-d14	93.3	0	48-155		%Rec	1	6/28/2022 11:47:20 AM	68135
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	6/21/2022 8:01:00 PM	68135
Naphthalene	ND	0.20	0.30		µg/L	1	6/21/2022 8:01:00 PM	68135
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	6/21/2022 8:01:00 PM	68135
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	6/21/2022 8:01:00 PM	68135
Acenaphthene	ND	0.14	0.30		µg/L	1	6/21/2022 8:01:00 PM	68135
Fluorene	ND	0.095	0.30		µg/L	1	6/21/2022 8:01:00 PM	68135
Phenanthrene	ND	0.16	0.30		µg/L	1	6/21/2022 8:01:00 PM	68135
Anthracene	ND	0.14	0.30		µg/L	1	6/21/2022 8:01:00 PM	68135
Fluoranthene	ND	0.14	0.30		µg/L	1	6/21/2022 8:01:00 PM	68135
Pyrene	ND	0.32	1.0		µg/L	1	6/21/2022 8:01:00 PM	68135
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	6/21/2022 8:01:00 PM	68135
Chrysene	ND	0.25	0.30		µg/L	1	6/21/2022 8:01:00 PM	68135
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	6/21/2022 8:01:00 PM	68135
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	6/21/2022 8:01:00 PM	68135

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-9-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/9/2022 9:00:00 AM
Lab ID: 2206602-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	81.7	0	31.6-100		%Rec	1	6/21/2022 8:01:00 PM	68135
Surr: 2-Fluorobiphenyl	71.7	0	26.7-90.1		%Rec	1	6/21/2022 8:01:00 PM	68135
Surr: 4-Terphenyl-d14	103	0	72.3-147		%Rec	1	6/21/2022 8:01:00 PM	68135

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-9-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/9/2022 9:00:00 AM
Lab ID: 2206602-001D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	ND	0.0016	0.0030		mg/L	1	6/16/2022 4:59:12 PM	68127
Beryllium	ND	0.00088	0.0020		mg/L	1	6/16/2022 4:59:12 PM	68127
Cadmium	ND	0.0018	0.0020		mg/L	1	6/16/2022 4:59:12 PM	68127
Chromium	ND	0.0020	0.0060		mg/L	1	6/16/2022 4:59:12 PM	68127
Cobalt	ND	0.0035	0.0060		mg/L	1	6/16/2022 4:59:12 PM	68127
Nickel	ND	0.0053	0.010		mg/L	1	6/16/2022 4:59:12 PM	68127
Silver	ND	0.0018	0.0050		mg/L	1	6/16/2022 4:59:12 PM	68127
Vanadium	ND	0.0035	0.050		mg/L	1	6/16/2022 4:59:12 PM	68127
Zinc	ND	0.0039	0.010		mg/L	1	6/16/2022 4:59:12 PM	68127
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/20/2022 11:32:50 AM	68127
Arsenic	ND	0.00013	0.0010		mg/L	1	6/20/2022 11:32:50 AM	68127
Lead	ND	0.000061	0.00050		mg/L	1	6/20/2022 11:32:50 AM	68127
Selenium	ND	0.00037	0.0010		mg/L	1	6/20/2022 11:32:50 AM	68127
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/14/2022 1:49:00 PM	68089

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-9-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/9/2022 9:00:00 AM
Lab ID: 2206602-001E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	ND	0.0011	0.0020		mg/L	1	6/15/2022 6:48:54 PM	B88784
Beryllium	ND	0.00088	0.0020		mg/L	1	6/15/2022 6:48:54 PM	B88784
Cadmium	ND	0.00098	0.0020		mg/L	1	6/15/2022 6:48:54 PM	B88784
Chromium	ND	0.0020	0.0060		mg/L	1	6/15/2022 6:48:54 PM	B88784
Cobalt	ND	0.0024	0.0060		mg/L	1	6/15/2022 6:48:54 PM	B88784
Nickel	ND	0.0033	0.010		mg/L	1	6/15/2022 6:48:54 PM	B88784
Silver	ND	0.0013	0.0050		mg/L	1	6/15/2022 6:48:54 PM	B88784
Vanadium	ND	0.0017	0.050		mg/L	1	6/15/2022 6:48:54 PM	B88784
Zinc	0.0065	0.0032	0.010	J	mg/L	1	6/15/2022 6:48:54 PM	B88784
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/13/2022 12:45:06 PM	C88688
Arsenic	ND	0.00012	0.0010		mg/L	1	6/13/2022 12:45:06 PM	C88688
Lead	ND	0.000057	0.00050		mg/L	1	6/13/2022 2:32:41 PM	C88688
Selenium	ND	0.00034	0.0010		mg/L	1	6/13/2022 12:45:06 PM	C88688
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/14/2022 1:51:09 PM	68089

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5C
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/9/2022 9:30:00 AM
Lab ID: 2206602-002A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.023	0.0090	0.050	J	mg/L	1	6/15/2022 2:37:00 AM	C88732
Surr: BFB	95.3	0	70-130		%Rec	1	6/15/2022 2:37:00 AM	C88732
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	6/16/2022 4:56:52 PM	R88822
Toluene	ND	0.20	1.0		µg/L	1	6/16/2022 4:56:52 PM	R88822
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/16/2022 4:56:52 PM	R88822
Methyl tert-butyl ether (MTBE)	26	0.39	1.0		µg/L	1	6/16/2022 4:56:52 PM	R88822
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/16/2022 4:56:52 PM	R88822
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/16/2022 4:56:52 PM	R88822
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/16/2022 4:56:52 PM	R88822
Acetone	ND	2.5	10		µg/L	1	6/16/2022 4:56:52 PM	R88822
Bromomethane	ND	0.85	3.0		µg/L	1	6/16/2022 4:56:52 PM	R88822
2-Butanone	ND	2.0	10		µg/L	1	6/16/2022 4:56:52 PM	R88822
Carbon disulfide	ND	0.59	10		µg/L	1	6/16/2022 4:56:52 PM	R88822
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/16/2022 4:56:52 PM	R88822
Chloroform	ND	0.13	1.0		µg/L	1	6/16/2022 4:56:52 PM	R88822
Chloromethane	ND	0.41	3.0		µg/L	1	6/16/2022 4:56:52 PM	R88822
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/16/2022 4:56:52 PM	R88822
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/16/2022 4:56:52 PM	R88822
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/16/2022 4:56:52 PM	R88822
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/16/2022 4:56:52 PM	R88822
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/16/2022 4:56:52 PM	R88822
Methylene Chloride	ND	0.50	3.0		µg/L	1	6/16/2022 4:56:52 PM	R88822
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/16/2022 4:56:52 PM	R88822
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/16/2022 4:56:52 PM	R88822
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	6/16/2022 4:56:52 PM	R88822
Styrene	ND	0.14	1.0		µg/L	1	6/16/2022 4:56:52 PM	R88822
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/16/2022 4:56:52 PM	R88822
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/16/2022 4:56:52 PM	R88822
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/16/2022 4:56:52 PM	R88822
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/16/2022 4:56:52 PM	R88822
Xylenes, Total	ND	0.37	1.5		µg/L	1	6/16/2022 4:56:52 PM	R88822
Surr: 1,2-Dichloroethane-d4	104	0	70-130		%Rec	1	6/16/2022 4:56:52 PM	R88822
Surr: 4-Bromofluorobenzene	98.9	0	70-130		%Rec	1	6/16/2022 4:56:52 PM	R88822
Surr: Dibromofluoromethane	123	0	70-130		%Rec	1	6/16/2022 4:56:52 PM	R88822
Surr: Toluene-d8	85.8	0	70-130		%Rec	1	6/16/2022 4:56:52 PM	R88822

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5C
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/9/2022 9:30:00 AM
Lab ID: 2206602-002B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	6/14/2022 3:04:36 PM	68078

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5C
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/9/2022 9:30:00 AM
Lab ID: 2206602-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.078	0.016	0.064		mg/L	1	6/20/2022 6:32:47 PM	68123
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	6/20/2022 6:32:47 PM	68123
Surr: DNOP	92.1	0	42.2-138		%Rec	1	6/20/2022 6:32:47 PM	68123
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	6/28/2022 12:29:03 PM	68135
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	6/28/2022 12:29:03 PM	68135
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	6/28/2022 12:29:03 PM	68135
Di-n-octyl phthalate	ND	12	20		µg/L	1	6/28/2022 12:29:03 PM	68135
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	6/28/2022 12:29:03 PM	68135
Diethyl phthalate	ND	6.0	10		µg/L	1	6/28/2022 12:29:03 PM	68135
Dimethyl phthalate	ND	6.0	10		µg/L	1	6/28/2022 12:29:03 PM	68135
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	6/28/2022 12:29:03 PM	68135
2,4-Dinitrophenol	ND	16	20		µg/L	1	6/28/2022 12:29:03 PM	68135
2-Methylphenol	ND	5.0	10		µg/L	1	6/28/2022 12:29:03 PM	68135
3+4-Methylphenol	ND	5.1	10		µg/L	1	6/28/2022 12:29:03 PM	68135
Phenol	ND	18	20		µg/L	1	6/28/2022 12:29:03 PM	68135
Pyridine	ND	14	60		µg/L	1	6/28/2022 12:29:03 PM	68135
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	6/28/2022 12:29:03 PM	68135
Surr: 2-Fluorophenol	57.5	0	29.4-87.7		%Rec	1	6/28/2022 12:29:03 PM	68135
Surr: Phenol-d5	44.4	0	28.5-64.7		%Rec	1	6/28/2022 12:29:03 PM	68135
Surr: 2,4,6-Tribromophenol	67.9	0	18.6-129		%Rec	1	6/28/2022 12:29:03 PM	68135
Surr: Nitrobenzene-d5	72.1	0	36.9-103		%Rec	1	6/28/2022 12:29:03 PM	68135
Surr: 2-Fluorobiphenyl	74.2	0	38.1-99.9		%Rec	1	6/28/2022 12:29:03 PM	68135
Surr: 4-Terphenyl-d14	91.9	0	48-155		%Rec	1	6/28/2022 12:29:03 PM	68135
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	3.9	0.11	1.0		µg/L	1	6/21/2022 8:48:00 PM	68135
Naphthalene	ND	0.20	0.30		µg/L	1	6/21/2022 8:48:00 PM	68135
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	6/21/2022 8:48:00 PM	68135
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	6/21/2022 8:48:00 PM	68135
Acenaphthene	ND	0.14	0.30		µg/L	1	6/21/2022 8:48:00 PM	68135
Fluorene	ND	0.095	0.30		µg/L	1	6/21/2022 8:48:00 PM	68135
Phenanthrene	ND	0.16	0.30		µg/L	1	6/21/2022 8:48:00 PM	68135
Anthracene	ND	0.14	0.30		µg/L	1	6/21/2022 8:48:00 PM	68135
Fluoranthene	ND	0.14	0.30		µg/L	1	6/21/2022 8:48:00 PM	68135
Pyrene	ND	0.32	1.0		µg/L	1	6/21/2022 8:48:00 PM	68135
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	6/21/2022 8:48:00 PM	68135
Chrysene	ND	0.25	0.30		µg/L	1	6/21/2022 8:48:00 PM	68135
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	6/21/2022 8:48:00 PM	68135
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	6/21/2022 8:48:00 PM	68135

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5C
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/9/2022 9:30:00 AM
Lab ID: 2206602-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	79.0	0	31.6-100		%Rec	1	6/21/2022 8:48:00 PM	68135
Surr: 2-Fluorobiphenyl	70.2	0	26.7-90.1		%Rec	1	6/21/2022 8:48:00 PM	68135
Surr: 4-Terphenyl-d14	96.8	0	72.3-147		%Rec	1	6/21/2022 8:48:00 PM	68135

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5C
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/9/2022 9:30:00 AM
Lab ID: 2206602-002D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	0.24	0.0016	0.0030		mg/L	1	6/16/2022 5:00:48 PM	68127
Beryllium	ND	0.00088	0.0020		mg/L	1	6/16/2022 5:00:48 PM	68127
Cadmium	ND	0.0018	0.0020		mg/L	1	6/16/2022 5:00:48 PM	68127
Chromium	0.0064	0.0020	0.0060		mg/L	1	6/16/2022 5:00:48 PM	68127
Cobalt	0.0040	0.0035	0.0060	J	mg/L	1	6/16/2022 5:00:48 PM	68127
Nickel	ND	0.0053	0.010		mg/L	1	6/16/2022 5:00:48 PM	68127
Silver	ND	0.0018	0.0050		mg/L	1	6/16/2022 5:00:48 PM	68127
Vanadium	0.0089	0.0035	0.050	J	mg/L	1	6/16/2022 5:00:48 PM	68127
Zinc	0.0065	0.0039	0.010	J	mg/L	1	6/16/2022 5:00:48 PM	68127
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	6/20/2022 12:36:54 PM	68127
Arsenic	0.00076	0.00063	0.0050	J	mg/L	5	6/20/2022 12:36:54 PM	68127
Lead	0.0014	0.00031	0.0025	J	mg/L	5	6/20/2022 12:36:54 PM	68127
Selenium	ND	0.0019	0.0050		mg/L	5	6/20/2022 12:36:54 PM	68127
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00019	0.000091	0.00020	J	mg/L	1	6/14/2022 1:53:18 PM	68089

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5C
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/9/2022 9:30:00 AM
Lab ID: 2206602-002E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.099	0.0011	0.0020		mg/L	1	6/14/2022 6:11:37 PM	A88751
Beryllium	ND	0.00088	0.0020		mg/L	1	6/14/2022 6:11:37 PM	A88751
Cadmium	ND	0.00098	0.0020		mg/L	1	6/14/2022 6:11:37 PM	A88751
Chromium	ND	0.0020	0.0060		mg/L	1	6/14/2022 6:11:37 PM	A88751
Cobalt	0.0029	0.0024	0.0060	J	mg/L	1	6/14/2022 6:11:37 PM	A88751
Nickel	ND	0.0033	0.010		mg/L	1	6/14/2022 6:11:37 PM	A88751
Silver	ND	0.0013	0.0050		mg/L	1	6/14/2022 6:11:37 PM	A88751
Vanadium	0.0026	0.0017	0.050	J	mg/L	1	6/14/2022 6:11:37 PM	A88751
Zinc	0.0086	0.0032	0.010	J	mg/L	1	6/15/2022 6:55:29 PM	B88784
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	6/13/2022 2:40:45 PM	C88688
Arsenic	0.00055	0.00012	0.0010	J	mg/L	1	6/13/2022 12:53:09 PM	C88688
Lead	ND	0.00028	0.0025		mg/L	5	6/13/2022 2:40:45 PM	C88688
Selenium	0.00040	0.00034	0.0010	J	mg/L	1	6/13/2022 12:53:09 PM	C88688
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/14/2022 2:55:04 PM	68089

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-50
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/9/2022 10:30:00 AM
Lab ID: 2206602-003A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.051	0.0090	0.050		mg/L	1	6/15/2022 2:57:00 AM	C88732
Surr: BFB	93.8	0	70-130		%Rec	1	6/15/2022 2:57:00 AM	C88732
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	6/16/2022 5:26:07 PM	R88822
Toluene	ND	0.20	1.0		µg/L	1	6/16/2022 5:26:07 PM	R88822
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/16/2022 5:26:07 PM	R88822
Methyl tert-butyl ether (MTBE)	66	0.39	1.0		µg/L	1	6/16/2022 5:26:07 PM	R88822
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/16/2022 5:26:07 PM	R88822
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/16/2022 5:26:07 PM	R88822
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/16/2022 5:26:07 PM	R88822
Acetone	ND	2.5	10		µg/L	1	6/16/2022 5:26:07 PM	R88822
Bromomethane	ND	0.85	3.0		µg/L	1	6/16/2022 5:26:07 PM	R88822
2-Butanone	ND	2.0	10		µg/L	1	6/16/2022 5:26:07 PM	R88822
Carbon disulfide	ND	0.59	10		µg/L	1	6/16/2022 5:26:07 PM	R88822
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/16/2022 5:26:07 PM	R88822
Chloroform	ND	0.13	1.0		µg/L	1	6/16/2022 5:26:07 PM	R88822
Chloromethane	ND	0.41	3.0		µg/L	1	6/16/2022 5:26:07 PM	R88822
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/16/2022 5:26:07 PM	R88822
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/16/2022 5:26:07 PM	R88822
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/16/2022 5:26:07 PM	R88822
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/16/2022 5:26:07 PM	R88822
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/16/2022 5:26:07 PM	R88822
Methylene Chloride	ND	0.50	3.0		µg/L	1	6/16/2022 5:26:07 PM	R88822
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/16/2022 5:26:07 PM	R88822
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/16/2022 5:26:07 PM	R88822
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	6/16/2022 5:26:07 PM	R88822
Styrene	ND	0.14	1.0		µg/L	1	6/16/2022 5:26:07 PM	R88822
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/16/2022 5:26:07 PM	R88822
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/16/2022 5:26:07 PM	R88822
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/16/2022 5:26:07 PM	R88822
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/16/2022 5:26:07 PM	R88822
Xylenes, Total	ND	0.37	1.5		µg/L	1	6/16/2022 5:26:07 PM	R88822
Surr: 1,2-Dichloroethane-d4	98.0	0	70-130		%Rec	1	6/16/2022 5:26:07 PM	R88822
Surr: 4-Bromofluorobenzene	98.7	0	70-130		%Rec	1	6/16/2022 5:26:07 PM	R88822
Surr: Dibromofluoromethane	121	0	70-130		%Rec	1	6/16/2022 5:26:07 PM	R88822
Surr: Toluene-d8	85.6	0	70-130		%Rec	1	6/16/2022 5:26:07 PM	R88822

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-50
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/9/2022 10:30:00 AM
Lab ID: 2206602-003B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	6/14/2022 3:19:49 PM	68078

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-50
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/9/2022 10:30:00 AM
Lab ID: 2206602-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.046	0.016	0.064	J	mg/L	1	6/20/2022 6:57:01 PM	68123
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	6/20/2022 6:57:01 PM	68123
Surr: DNOP	94.3	0	42.2-138		%Rec	1	6/20/2022 6:57:01 PM	68123
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	6/28/2022 1:10:34 PM	68135
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	6/28/2022 1:10:34 PM	68135
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	6/28/2022 1:10:34 PM	68135
Di-n-octyl phthalate	ND	12	20		µg/L	1	6/28/2022 1:10:34 PM	68135
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	6/28/2022 1:10:34 PM	68135
Diethyl phthalate	ND	6.0	10		µg/L	1	6/28/2022 1:10:34 PM	68135
Dimethyl phthalate	ND	6.0	10		µg/L	1	6/28/2022 1:10:34 PM	68135
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	6/28/2022 1:10:34 PM	68135
2,4-Dinitrophenol	ND	16	20		µg/L	1	6/28/2022 1:10:34 PM	68135
2-Methylphenol	ND	5.0	10		µg/L	1	6/28/2022 1:10:34 PM	68135
3+4-Methylphenol	ND	5.1	10		µg/L	1	6/28/2022 1:10:34 PM	68135
Phenol	ND	18	20		µg/L	1	6/28/2022 1:10:34 PM	68135
Pyridine	ND	14	60		µg/L	1	6/28/2022 1:10:34 PM	68135
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	6/28/2022 1:10:34 PM	68135
Surr: 2-Fluorophenol	63.4	0	29.4-87.7		%Rec	1	6/28/2022 1:10:34 PM	68135
Surr: Phenol-d5	48.6	0	28.5-64.7		%Rec	1	6/28/2022 1:10:34 PM	68135
Surr: 2,4,6-Tribromophenol	68.1	0	18.6-129		%Rec	1	6/28/2022 1:10:34 PM	68135
Surr: Nitrobenzene-d5	69.7	0	36.9-103		%Rec	1	6/28/2022 1:10:34 PM	68135
Surr: 2-Fluorobiphenyl	67.2	0	38.1-99.9		%Rec	1	6/28/2022 1:10:34 PM	68135
Surr: 4-Terphenyl-d14	86.0	0	48-155		%Rec	1	6/28/2022 1:10:34 PM	68135
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	6/21/2022 9:34:00 PM	68135
Naphthalene	ND	0.20	0.30		µg/L	1	6/21/2022 9:34:00 PM	68135
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	6/21/2022 9:34:00 PM	68135
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	6/21/2022 9:34:00 PM	68135
Acenaphthene	ND	0.14	0.30		µg/L	1	6/21/2022 9:34:00 PM	68135
Fluorene	ND	0.095	0.30		µg/L	1	6/21/2022 9:34:00 PM	68135
Phenanthrene	ND	0.16	0.30		µg/L	1	6/21/2022 9:34:00 PM	68135
Anthracene	ND	0.14	0.30		µg/L	1	6/21/2022 9:34:00 PM	68135
Fluoranthene	ND	0.14	0.30		µg/L	1	6/21/2022 9:34:00 PM	68135
Pyrene	ND	0.32	1.0		µg/L	1	6/21/2022 9:34:00 PM	68135
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	6/21/2022 9:34:00 PM	68135
Chrysene	ND	0.25	0.30		µg/L	1	6/21/2022 9:34:00 PM	68135
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	6/21/2022 9:34:00 PM	68135
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	6/21/2022 9:34:00 PM	68135

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-50
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/9/2022 10:30:00 AM
Lab ID: 2206602-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	77.6	0	31.6-100		%Rec	1	6/21/2022 9:34:00 PM	68135
Surr: 2-Fluorobiphenyl	69.6	0	26.7-90.1		%Rec	1	6/21/2022 9:34:00 PM	68135
Surr: 4-Terphenyl-d14	97.5	0	72.3-147		%Rec	1	6/21/2022 9:34:00 PM	68135

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-50
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/9/2022 10:30:00 AM
Lab ID: 2206602-003D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	0.054	0.0016	0.0030		mg/L	1	6/16/2022 5:07:12 PM	68127
Beryllium	ND	0.00088	0.0020		mg/L	1	6/16/2022 5:07:12 PM	68127
Cadmium	ND	0.0018	0.0020		mg/L	1	6/16/2022 5:07:12 PM	68127
Chromium	ND	0.0020	0.0060		mg/L	1	6/16/2022 5:07:12 PM	68127
Cobalt	ND	0.0035	0.0060		mg/L	1	6/16/2022 5:07:12 PM	68127
Nickel	ND	0.0053	0.010		mg/L	1	6/16/2022 5:07:12 PM	68127
Silver	ND	0.0018	0.0050		mg/L	1	6/16/2022 5:07:12 PM	68127
Vanadium	ND	0.0035	0.050		mg/L	1	6/16/2022 5:07:12 PM	68127
Zinc	0.0043	0.0039	0.010	J	mg/L	1	6/16/2022 5:07:12 PM	68127
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/20/2022 11:37:43 AM	68127
Arsenic	0.0022	0.00013	0.0010		mg/L	1	6/20/2022 11:37:43 AM	68127
Lead	ND	0.000061	0.00050		mg/L	1	6/20/2022 11:37:43 AM	68127
Selenium	ND	0.00037	0.0010		mg/L	1	6/20/2022 11:37:43 AM	68127
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/14/2022 2:57:14 PM	68089

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-50
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/9/2022 10:30:00 AM
Lab ID: 2206602-003E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.054	0.0011	0.0020		mg/L	1	6/14/2022 6:13:20 PM	A88751
Beryllium	ND	0.00088	0.0020		mg/L	1	6/14/2022 6:13:20 PM	A88751
Cadmium	ND	0.00098	0.0020		mg/L	1	6/14/2022 6:13:20 PM	A88751
Chromium	ND	0.0020	0.0060		mg/L	1	6/14/2022 6:13:20 PM	A88751
Cobalt	ND	0.0024	0.0060		mg/L	1	6/14/2022 6:13:20 PM	A88751
Nickel	ND	0.0033	0.010		mg/L	1	6/14/2022 6:13:20 PM	A88751
Silver	ND	0.0013	0.0050		mg/L	1	6/14/2022 6:13:20 PM	A88751
Vanadium	ND	0.0017	0.050		mg/L	1	6/14/2022 6:13:20 PM	A88751
Zinc	0.011	0.0032	0.010		mg/L	1	6/15/2022 7:04:55 PM	B88784
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/13/2022 12:58:31 PM	C88688
Arsenic	0.0020	0.00012	0.0010		mg/L	1	6/13/2022 12:58:31 PM	C88688
Lead	ND	0.000057	0.00050		mg/L	1	6/21/2022 10:48:27 AM	B88918
Selenium	ND	0.00034	0.0010		mg/L	1	6/13/2022 12:58:31 PM	C88688
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/14/2022 2:59:22 PM	68089

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-52
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/9/2022 10:50:00 AM
Lab ID: 2206602-004A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.0094	0.0090	0.050	J	mg/L	1	6/15/2022 3:17:00 AM	C88732
Surr: BFB	96.7	0	70-130		%Rec	1	6/15/2022 3:17:00 AM	C88732
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	6/16/2022 5:55:21 PM	R88822
Toluene	ND	0.20	1.0		µg/L	1	6/16/2022 5:55:21 PM	R88822
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/16/2022 5:55:21 PM	R88822
Methyl tert-butyl ether (MTBE)	5.3	0.39	1.0		µg/L	1	6/16/2022 5:55:21 PM	R88822
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/16/2022 5:55:21 PM	R88822
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/16/2022 5:55:21 PM	R88822
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/16/2022 5:55:21 PM	R88822
Acetone	ND	2.5	10		µg/L	1	6/16/2022 5:55:21 PM	R88822
Bromomethane	ND	0.85	3.0		µg/L	1	6/16/2022 5:55:21 PM	R88822
2-Butanone	ND	2.0	10		µg/L	1	6/16/2022 5:55:21 PM	R88822
Carbon disulfide	ND	0.59	10		µg/L	1	6/16/2022 5:55:21 PM	R88822
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/16/2022 5:55:21 PM	R88822
Chloroform	ND	0.13	1.0		µg/L	1	6/16/2022 5:55:21 PM	R88822
Chloromethane	ND	0.41	3.0		µg/L	1	6/16/2022 5:55:21 PM	R88822
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/16/2022 5:55:21 PM	R88822
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/16/2022 5:55:21 PM	R88822
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/16/2022 5:55:21 PM	R88822
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/16/2022 5:55:21 PM	R88822
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/16/2022 5:55:21 PM	R88822
Methylene Chloride	ND	0.50	3.0		µg/L	1	6/16/2022 5:55:21 PM	R88822
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/16/2022 5:55:21 PM	R88822
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/16/2022 5:55:21 PM	R88822
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	6/16/2022 5:55:21 PM	R88822
Styrene	ND	0.14	1.0		µg/L	1	6/16/2022 5:55:21 PM	R88822
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/16/2022 5:55:21 PM	R88822
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/16/2022 5:55:21 PM	R88822
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/16/2022 5:55:21 PM	R88822
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/16/2022 5:55:21 PM	R88822
Xylenes, Total	ND	0.37	1.5		µg/L	1	6/16/2022 5:55:21 PM	R88822
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%Rec	1	6/16/2022 5:55:21 PM	R88822
Surr: 4-Bromofluorobenzene	99.5	0	70-130		%Rec	1	6/16/2022 5:55:21 PM	R88822
Surr: Dibromofluoromethane	124	0	70-130		%Rec	1	6/16/2022 5:55:21 PM	R88822
Surr: Toluene-d8	88.5	0	70-130		%Rec	1	6/16/2022 5:55:21 PM	R88822

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-52
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/9/2022 10:50:00 AM
Lab ID: 2206602-004B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	6/14/2022 3:35:08 PM	68078

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-52
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/9/2022 10:50:00 AM
Lab ID: 2206602-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.31	0.016	0.064		mg/L	1	6/20/2022 7:21:15 PM	68123
Motor Oil Range Organics (MRO)	0.72	0.052	0.080		mg/L	1	6/20/2022 7:21:15 PM	68123
Surr: DNOP	58.0	0	42.2-138		%Rec	1	6/20/2022 7:21:15 PM	68123
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	6/28/2022 1:52:13 PM	68135
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	6/28/2022 1:52:13 PM	68135
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	6/28/2022 1:52:13 PM	68135
Di-n-octyl phthalate	ND	12	20		µg/L	1	6/28/2022 1:52:13 PM	68135
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	6/28/2022 1:52:13 PM	68135
Diethyl phthalate	ND	6.0	10		µg/L	1	6/28/2022 1:52:13 PM	68135
Dimethyl phthalate	ND	6.0	10		µg/L	1	6/28/2022 1:52:13 PM	68135
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	6/28/2022 1:52:13 PM	68135
2,4-Dinitrophenol	ND	16	20		µg/L	1	6/28/2022 1:52:13 PM	68135
2-Methylphenol	ND	5.0	10		µg/L	1	6/28/2022 1:52:13 PM	68135
3+4-Methylphenol	ND	5.1	10		µg/L	1	6/28/2022 1:52:13 PM	68135
Phenol	ND	18	20		µg/L	1	6/28/2022 1:52:13 PM	68135
Pyridine	ND	14	60		µg/L	1	6/28/2022 1:52:13 PM	68135
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	6/28/2022 1:52:13 PM	68135
Surr: 2-Fluorophenol	46.5	0	29.4-87.7		%Rec	1	6/28/2022 1:52:13 PM	68135
Surr: Phenol-d5	36.8	0	28.5-64.7		%Rec	1	6/28/2022 1:52:13 PM	68135
Surr: 2,4,6-Tribromophenol	53.1	0	18.6-129		%Rec	1	6/28/2022 1:52:13 PM	68135
Surr: Nitrobenzene-d5	56.6	0	36.9-103		%Rec	1	6/28/2022 1:52:13 PM	68135
Surr: 2-Fluorobiphenyl	55.5	0	38.1-99.9		%Rec	1	6/28/2022 1:52:13 PM	68135
Surr: 4-Terphenyl-d14	66.8	0	48-155		%Rec	1	6/28/2022 1:52:13 PM	68135
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	6/21/2022 10:21:00 PM	68135
Naphthalene	ND	0.20	0.30		µg/L	1	6/21/2022 10:21:00 PM	68135
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	6/21/2022 10:21:00 PM	68135
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	6/21/2022 10:21:00 PM	68135
Acenaphthene	ND	0.14	0.30		µg/L	1	6/21/2022 10:21:00 PM	68135
Fluorene	ND	0.095	0.30		µg/L	1	6/21/2022 10:21:00 PM	68135
Phenanthrene	ND	0.16	0.30		µg/L	1	6/21/2022 10:21:00 PM	68135
Anthracene	ND	0.14	0.30		µg/L	1	6/21/2022 10:21:00 PM	68135
Fluoranthene	ND	0.14	0.30		µg/L	1	6/21/2022 10:21:00 PM	68135
Pyrene	ND	0.32	1.0		µg/L	1	6/21/2022 10:21:00 PM	68135
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	6/21/2022 10:21:00 PM	68135
Chrysene	ND	0.25	0.30		µg/L	1	6/21/2022 10:21:00 PM	68135
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	6/21/2022 10:21:00 PM	68135
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	6/21/2022 10:21:00 PM	68135

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-52
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/9/2022 10:50:00 AM
Lab ID: 2206602-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	75.1	0	31.6-100		%Rec	1	6/21/2022 10:21:00 PM	68135
Surr: 2-Fluorobiphenyl	67.4	0	26.7-90.1		%Rec	1	6/21/2022 10:21:00 PM	68135
Surr: 4-Terphenyl-d14	96.2	0	72.3-147		%Rec	1	6/21/2022 10:21:00 PM	68135

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-52
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/9/2022 10:50:00 AM
Lab ID: 2206602-004D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	0.029	0.0016	0.0030		mg/L	1	6/16/2022 5:08:51 PM	68127
Beryllium	ND	0.00088	0.0020		mg/L	1	6/16/2022 5:08:51 PM	68127
Cadmium	ND	0.0018	0.0020		mg/L	1	6/16/2022 5:08:51 PM	68127
Chromium	ND	0.0020	0.0060		mg/L	1	6/16/2022 5:08:51 PM	68127
Cobalt	ND	0.0035	0.0060		mg/L	1	6/16/2022 5:08:51 PM	68127
Nickel	ND	0.0053	0.010		mg/L	1	6/16/2022 5:08:51 PM	68127
Silver	ND	0.0018	0.0050		mg/L	1	6/16/2022 5:08:51 PM	68127
Vanadium	ND	0.0035	0.050		mg/L	1	6/16/2022 5:08:51 PM	68127
Zinc	ND	0.0039	0.010		mg/L	1	6/16/2022 5:08:51 PM	68127
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/20/2022 11:40:09 AM	68127
Arsenic	0.00065	0.00013	0.0010	J	mg/L	1	6/20/2022 11:40:09 AM	68127
Lead	ND	0.000061	0.00050		mg/L	1	6/20/2022 11:40:09 AM	68127
Selenium	ND	0.00037	0.0010		mg/L	1	6/20/2022 11:40:09 AM	68127
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/14/2022 3:01:31 PM	68089

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-52
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/9/2022 10:50:00 AM
Lab ID: 2206602-004E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.028	0.0011	0.0020		mg/L	1	6/14/2022 6:15:00 PM	A88751
Beryllium	ND	0.00088	0.0020		mg/L	1	6/14/2022 6:15:00 PM	A88751
Cadmium	ND	0.00098	0.0020		mg/L	1	6/14/2022 6:15:00 PM	A88751
Chromium	ND	0.0020	0.0060		mg/L	1	6/14/2022 6:15:00 PM	A88751
Cobalt	ND	0.0024	0.0060		mg/L	1	6/14/2022 6:15:00 PM	A88751
Nickel	ND	0.0033	0.010		mg/L	1	6/14/2022 6:15:00 PM	A88751
Silver	ND	0.0013	0.0050		mg/L	1	6/14/2022 6:15:00 PM	A88751
Vanadium	ND	0.0017	0.050		mg/L	1	6/14/2022 6:15:00 PM	A88751
Zinc	0.013	0.0032	0.010		mg/L	1	6/15/2022 7:07:16 PM	B88784
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/13/2022 1:01:13 PM	C88688
Arsenic	0.00058	0.00012	0.0010	J	mg/L	1	6/13/2022 1:01:13 PM	C88688
Lead	ND	0.00028	0.0025		mg/L	5	6/13/2022 2:54:14 PM	C88688
Selenium	ND	0.00034	0.0010		mg/L	1	6/13/2022 1:01:13 PM	C88688
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/14/2022 3:03:39 PM	68089

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-29
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/9/2022 11:15:00 AM
Lab ID: 2206602-005A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	2.6	0.0090	0.050		mg/L	1	6/15/2022 3:36:00 AM	C88732
Surr: BFB	92.7	0	70-130		%Rec	1	6/15/2022 3:36:00 AM	C88732
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	6/16/2022 6:24:31 PM	R88822
Toluene	ND	0.20	1.0		µg/L	1	6/16/2022 6:24:31 PM	R88822
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/16/2022 6:24:31 PM	R88822
Methyl tert-butyl ether (MTBE)	2900	39	100		µg/L	100	6/21/2022 4:04:13 PM	A88912
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/16/2022 6:24:31 PM	R88822
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/16/2022 6:24:31 PM	R88822
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/16/2022 6:24:31 PM	R88822
Acetone	ND	2.5	10		µg/L	1	6/16/2022 6:24:31 PM	R88822
Bromomethane	ND	0.85	3.0		µg/L	1	6/16/2022 6:24:31 PM	R88822
2-Butanone	ND	2.0	10		µg/L	1	6/16/2022 6:24:31 PM	R88822
Carbon disulfide	ND	0.59	10		µg/L	1	6/16/2022 6:24:31 PM	R88822
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/16/2022 6:24:31 PM	R88822
Chloroform	ND	0.13	1.0		µg/L	1	6/16/2022 6:24:31 PM	R88822
Chloromethane	ND	0.41	3.0		µg/L	1	6/16/2022 6:24:31 PM	R88822
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/16/2022 6:24:31 PM	R88822
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/16/2022 6:24:31 PM	R88822
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/16/2022 6:24:31 PM	R88822
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/16/2022 6:24:31 PM	R88822
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/16/2022 6:24:31 PM	R88822
Methylene Chloride	39	0.50	3.0		µg/L	1	6/16/2022 6:24:31 PM	R88822
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/16/2022 6:24:31 PM	R88822
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/16/2022 6:24:31 PM	R88822
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	6/16/2022 6:24:31 PM	R88822
Styrene	ND	0.14	1.0		µg/L	1	6/16/2022 6:24:31 PM	R88822
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/16/2022 6:24:31 PM	R88822
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/16/2022 6:24:31 PM	R88822
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/16/2022 6:24:31 PM	R88822
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/16/2022 6:24:31 PM	R88822
Xylenes, Total	ND	0.37	1.5		µg/L	1	6/16/2022 6:24:31 PM	R88822
Surr: 1,2-Dichloroethane-d4	98.8	0	70-130		%Rec	1	6/16/2022 6:24:31 PM	R88822
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	6/16/2022 6:24:31 PM	R88822
Surr: Dibromofluoromethane	121	0	70-130		%Rec	1	6/16/2022 6:24:31 PM	R88822
Surr: Toluene-d8	87.8	0	70-130		%Rec	1	6/16/2022 6:24:31 PM	R88822

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-29
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/9/2022 11:15:00 AM
Lab ID: 2206602-005B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	6/14/2022 3:50:21 PM	68078

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-29
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/9/2022 11:15:00 AM
Lab ID: 2206602-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.40	0.016	0.064		mg/L	1	6/20/2022 8:09:46 PM	68123
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	6/20/2022 8:09:46 PM	68123
Surr: DNOP	84.2	0	42.2-138		%Rec	1	6/20/2022 8:09:46 PM	68123
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	6/28/2022 2:34:05 PM	68135
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	6/28/2022 2:34:05 PM	68135
Di-n-butyl phthalate	9.7	7.7	10	J	µg/L	1	6/28/2022 2:34:05 PM	68135
Di-n-octyl phthalate	ND	12	20		µg/L	1	6/28/2022 2:34:05 PM	68135
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	6/28/2022 2:34:05 PM	68135
Diethyl phthalate	ND	6.0	10		µg/L	1	6/28/2022 2:34:05 PM	68135
Dimethyl phthalate	ND	6.0	10		µg/L	1	6/28/2022 2:34:05 PM	68135
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	6/28/2022 2:34:05 PM	68135
2,4-Dinitrophenol	ND	16	20		µg/L	1	6/28/2022 2:34:05 PM	68135
2-Methylphenol	ND	5.0	10		µg/L	1	6/28/2022 2:34:05 PM	68135
3+4-Methylphenol	ND	5.1	10		µg/L	1	6/28/2022 2:34:05 PM	68135
Phenol	ND	18	20		µg/L	1	6/28/2022 2:34:05 PM	68135
Pyridine	ND	14	60		µg/L	1	6/28/2022 2:34:05 PM	68135
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	6/28/2022 2:34:05 PM	68135
Surr: 2-Fluorophenol	20.4	0	29.4-87.7	S	%Rec	1	6/28/2022 2:34:05 PM	68135
Surr: Phenol-d5	16.6	0	28.5-64.7	S	%Rec	1	6/28/2022 2:34:05 PM	68135
Surr: 2,4,6-Tribromophenol	42.2	0	18.6-129		%Rec	1	6/28/2022 2:34:05 PM	68135
Surr: Nitrobenzene-d5	26.7	0	36.9-103	S	%Rec	1	6/28/2022 2:34:05 PM	68135
Surr: 2-Fluorobiphenyl	26.7	0	38.1-99.9	S	%Rec	1	6/28/2022 2:34:05 PM	68135
Surr: 4-Terphenyl-d14	52.0	0	48-155		%Rec	1	6/28/2022 2:34:05 PM	68135
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	0.46	0.11	1.0	J	µg/L	1	6/21/2022 11:08:00 PM	68135
Naphthalene	ND	0.20	0.30		µg/L	1	6/21/2022 11:08:00 PM	68135
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	6/21/2022 11:08:00 PM	68135
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	6/21/2022 11:08:00 PM	68135
Acenaphthene	ND	0.14	0.30		µg/L	1	6/21/2022 11:08:00 PM	68135
Fluorene	ND	0.095	0.30		µg/L	1	6/21/2022 11:08:00 PM	68135
Phenanthrene	ND	0.16	0.30		µg/L	1	6/21/2022 11:08:00 PM	68135
Anthracene	ND	0.14	0.30		µg/L	1	6/21/2022 11:08:00 PM	68135
Fluoranthene	ND	0.14	0.30		µg/L	1	6/21/2022 11:08:00 PM	68135
Pyrene	ND	0.32	1.0		µg/L	1	6/21/2022 11:08:00 PM	68135
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	6/21/2022 11:08:00 PM	68135
Chrysene	ND	0.25	0.30		µg/L	1	6/21/2022 11:08:00 PM	68135
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	6/21/2022 11:08:00 PM	68135
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	6/21/2022 11:08:00 PM	68135

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-29
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/9/2022 11:15:00 AM
Lab ID: 2206602-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	35.3	0	31.6-100		%Rec	1	6/21/2022 11:08:00 PM	68135
Surr: 2-Fluorobiphenyl	32.4	0	26.7-90.1		%Rec	1	6/21/2022 11:08:00 PM	68135
Surr: 4-Terphenyl-d14	57.7	0	72.3-147	S	%Rec	1	6/21/2022 11:08:00 PM	68135

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-29
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/9/2022 11:15:00 AM
Lab ID: 2206602-005D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	0.082	0.0016	0.0030		mg/L	1	6/16/2022 5:10:30 PM	68127
Beryllium	ND	0.00088	0.0020		mg/L	1	6/16/2022 5:10:30 PM	68127
Cadmium	ND	0.0018	0.0020		mg/L	1	6/16/2022 5:10:30 PM	68127
Chromium	ND	0.0020	0.0060		mg/L	1	6/16/2022 5:10:30 PM	68127
Cobalt	ND	0.0035	0.0060		mg/L	1	6/16/2022 5:10:30 PM	68127
Nickel	0.026	0.0053	0.010		mg/L	1	6/16/2022 5:10:30 PM	68127
Silver	ND	0.0018	0.0050		mg/L	1	6/16/2022 5:10:30 PM	68127
Vanadium	ND	0.0035	0.050		mg/L	1	6/16/2022 5:10:30 PM	68127
Zinc	ND	0.0039	0.010		mg/L	1	6/16/2022 5:10:30 PM	68127
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/20/2022 11:47:31 AM	68127
Arsenic	ND	0.00063	0.0050		mg/L	5	6/20/2022 6:03:49 PM	68127
Lead	ND	0.000061	0.00050		mg/L	1	6/20/2022 11:47:31 AM	68127
Selenium	ND	0.00037	0.0010		mg/L	1	6/20/2022 11:47:31 AM	68127
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/14/2022 3:05:47 PM	68089

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-29
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/9/2022 11:15:00 AM
Lab ID: 2206602-005E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.085	0.0011	0.0020		mg/L	1	6/14/2022 6:16:38 PM	A88751
Beryllium	ND	0.00088	0.0020		mg/L	1	6/14/2022 6:16:38 PM	A88751
Cadmium	ND	0.00098	0.0020		mg/L	1	6/14/2022 6:16:38 PM	A88751
Chromium	ND	0.0020	0.0060		mg/L	1	6/14/2022 6:16:38 PM	A88751
Cobalt	ND	0.0024	0.0060		mg/L	1	6/14/2022 6:16:38 PM	A88751
Nickel	0.025	0.0033	0.010		mg/L	1	6/14/2022 6:16:38 PM	A88751
Silver	ND	0.0013	0.0050		mg/L	1	6/14/2022 6:16:38 PM	A88751
Vanadium	ND	0.0017	0.050		mg/L	1	6/14/2022 6:16:38 PM	A88751
Zinc	0.12	0.0032	0.010		mg/L	1	6/15/2022 7:09:33 PM	B88784
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	0.00067	0.00044	0.0010	J	mg/L	1	6/21/2022 10:51:08 AM	B88918
Arsenic	0.00046	0.00012	0.0010	J	mg/L	1	6/21/2022 10:51:08 AM	B88918
Lead	ND	0.000057	0.00050		mg/L	1	6/21/2022 10:51:08 AM	B88918
Selenium	ND	0.00034	0.0010		mg/L	1	6/21/2022 10:51:08 AM	B88918
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/14/2022 3:07:56 PM	68089

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-13
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/9/2022 11:35:00 AM
Lab ID: 2206602-006A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.11	0.0090	0.050		mg/L	1	6/15/2022 1:49:00 PM	C88732
Surr: BFB	101	0	70-130		%Rec	1	6/15/2022 1:49:00 PM	C88732
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	6/16/2022 6:53:47 PM	R88822
Toluene	ND	0.20	1.0		µg/L	1	6/16/2022 6:53:47 PM	R88822
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/16/2022 6:53:47 PM	R88822
Methyl tert-butyl ether (MTBE)	140	0.39	1.0		µg/L	1	6/16/2022 6:53:47 PM	R88822
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/16/2022 6:53:47 PM	R88822
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/16/2022 6:53:47 PM	R88822
1,2-Dichloroethane (EDC)	0.77	0.25	1.0	J	µg/L	1	6/16/2022 6:53:47 PM	R88822
Acetone	ND	2.5	10		µg/L	1	6/16/2022 6:53:47 PM	R88822
Bromomethane	ND	0.85	3.0		µg/L	1	6/16/2022 6:53:47 PM	R88822
2-Butanone	ND	2.0	10		µg/L	1	6/16/2022 6:53:47 PM	R88822
Carbon disulfide	ND	0.59	10		µg/L	1	6/16/2022 6:53:47 PM	R88822
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/16/2022 6:53:47 PM	R88822
Chloroform	ND	0.13	1.0		µg/L	1	6/16/2022 6:53:47 PM	R88822
Chloromethane	ND	0.41	3.0		µg/L	1	6/16/2022 6:53:47 PM	R88822
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/16/2022 6:53:47 PM	R88822
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/16/2022 6:53:47 PM	R88822
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/16/2022 6:53:47 PM	R88822
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/16/2022 6:53:47 PM	R88822
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/16/2022 6:53:47 PM	R88822
Methylene Chloride	ND	0.50	3.0		µg/L	1	6/16/2022 6:53:47 PM	R88822
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/16/2022 6:53:47 PM	R88822
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/16/2022 6:53:47 PM	R88822
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	6/16/2022 6:53:47 PM	R88822
Styrene	ND	0.14	1.0		µg/L	1	6/16/2022 6:53:47 PM	R88822
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/16/2022 6:53:47 PM	R88822
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/16/2022 6:53:47 PM	R88822
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/16/2022 6:53:47 PM	R88822
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/16/2022 6:53:47 PM	R88822
Xylenes, Total	ND	0.37	1.5		µg/L	1	6/16/2022 6:53:47 PM	R88822
Surr: 1,2-Dichloroethane-d4	103	0	70-130		%Rec	1	6/16/2022 6:53:47 PM	R88822
Surr: 4-Bromofluorobenzene	94.3	0	70-130		%Rec	1	6/16/2022 6:53:47 PM	R88822
Surr: Dibromofluoromethane	120	0	70-130		%Rec	1	6/16/2022 6:53:47 PM	R88822
Surr: Toluene-d8	87.9	0	70-130		%Rec	1	6/16/2022 6:53:47 PM	R88822

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-13
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/9/2022 11:35:00 AM
Lab ID: 2206602-006B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	6/14/2022 4:05:36 PM	68078

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-13
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/9/2022 11:35:00 AM
Lab ID: 2206602-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.039	0.016	0.064	J	mg/L	1	6/20/2022 8:33:54 PM	68123
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	6/20/2022 8:33:54 PM	68123
Surr: DNOP	95.5	0	42.2-138		%Rec	1	6/20/2022 8:33:54 PM	68123
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	6/28/2022 3:15:51 PM	68135
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	6/28/2022 3:15:51 PM	68135
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	6/28/2022 3:15:51 PM	68135
Di-n-octyl phthalate	ND	12	20		µg/L	1	6/28/2022 3:15:51 PM	68135
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	6/28/2022 3:15:51 PM	68135
Diethyl phthalate	ND	6.0	10		µg/L	1	6/28/2022 3:15:51 PM	68135
Dimethyl phthalate	ND	6.0	10		µg/L	1	6/28/2022 3:15:51 PM	68135
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	6/28/2022 3:15:51 PM	68135
2,4-Dinitrophenol	ND	16	20		µg/L	1	6/28/2022 3:15:51 PM	68135
2-Methylphenol	ND	5.0	10		µg/L	1	6/28/2022 3:15:51 PM	68135
3+4-Methylphenol	ND	5.1	10		µg/L	1	6/28/2022 3:15:51 PM	68135
Phenol	ND	18	20		µg/L	1	6/28/2022 3:15:51 PM	68135
Pyridine	ND	14	60		µg/L	1	6/28/2022 3:15:51 PM	68135
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	6/28/2022 3:15:51 PM	68135
Surr: 2-Fluorophenol	41.5	0	29.4-87.7		%Rec	1	6/28/2022 3:15:51 PM	68135
Surr: Phenol-d5	31.7	0	28.5-64.7		%Rec	1	6/28/2022 3:15:51 PM	68135
Surr: 2,4,6-Tribromophenol	53.5	0	18.6-129		%Rec	1	6/28/2022 3:15:51 PM	68135
Surr: Nitrobenzene-d5	49.3	0	36.9-103		%Rec	1	6/28/2022 3:15:51 PM	68135
Surr: 2-Fluorobiphenyl	48.9	0	38.1-99.9		%Rec	1	6/28/2022 3:15:51 PM	68135
Surr: 4-Terphenyl-d14	73.2	0	48-155		%Rec	1	6/28/2022 3:15:51 PM	68135
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	6/22/2022 12:54:00 AM	68135
Naphthalene	ND	0.20	0.30		µg/L	1	6/22/2022 12:54:00 AM	68135
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	6/22/2022 12:54:00 AM	68135
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	6/22/2022 12:54:00 AM	68135
Acenaphthene	ND	0.14	0.30		µg/L	1	6/22/2022 12:54:00 AM	68135
Fluorene	ND	0.095	0.30		µg/L	1	6/22/2022 12:54:00 AM	68135
Phenanthrene	ND	0.16	0.30		µg/L	1	6/22/2022 12:54:00 AM	68135
Anthracene	ND	0.14	0.30		µg/L	1	6/22/2022 12:54:00 AM	68135
Fluoranthene	ND	0.14	0.30		µg/L	1	6/22/2022 12:54:00 AM	68135
Pyrene	ND	0.32	1.0		µg/L	1	6/22/2022 12:54:00 AM	68135
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	6/22/2022 12:54:00 AM	68135
Chrysene	ND	0.25	0.30		µg/L	1	6/22/2022 12:54:00 AM	68135
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	6/22/2022 12:54:00 AM	68135
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	6/22/2022 12:54:00 AM	68135

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-13
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/9/2022 11:35:00 AM
Lab ID: 2206602-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	63.9	0	31.6-100		%Rec	1	6/22/2022 12:54:00 AM	68135
Surr: 2-Fluorobiphenyl	55.9	0	26.7-90.1		%Rec	1	6/22/2022 12:54:00 AM	68135
Surr: 4-Terphenyl-d14	90.2	0	72.3-147		%Rec	1	6/22/2022 12:54:00 AM	68135

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-13
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/9/2022 11:35:00 AM
Lab ID: 2206602-006D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	0.021	0.0016	0.0030		mg/L	1	6/16/2022 5:12:08 PM	68127
Beryllium	ND	0.00088	0.0020		mg/L	1	6/16/2022 5:12:08 PM	68127
Cadmium	ND	0.0018	0.0020		mg/L	1	6/16/2022 5:12:08 PM	68127
Chromium	ND	0.0020	0.0060		mg/L	1	6/16/2022 5:12:08 PM	68127
Cobalt	ND	0.0035	0.0060		mg/L	1	6/16/2022 5:12:08 PM	68127
Nickel	ND	0.0053	0.010		mg/L	1	6/16/2022 5:12:08 PM	68127
Silver	ND	0.0018	0.0050		mg/L	1	6/16/2022 5:12:08 PM	68127
Vanadium	ND	0.0035	0.050		mg/L	1	6/16/2022 5:12:08 PM	68127
Zinc	0.0045	0.0039	0.010	J	mg/L	1	6/16/2022 5:12:08 PM	68127
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/20/2022 11:52:23 AM	68127
Arsenic	0.0012	0.00013	0.0010		mg/L	1	6/20/2022 11:52:23 AM	68127
Lead	ND	0.000061	0.00050		mg/L	1	6/20/2022 11:52:23 AM	68127
Selenium	ND	0.00037	0.0010		mg/L	1	6/20/2022 11:52:23 AM	68127
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/14/2022 3:10:04 PM	68089

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-13
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/9/2022 11:35:00 AM
Lab ID: 2206602-006E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.021	0.0011	0.0020		mg/L	1	6/14/2022 6:18:19 PM	A88751
Beryllium	ND	0.00088	0.0020		mg/L	1	6/14/2022 6:18:19 PM	A88751
Cadmium	ND	0.00098	0.0020		mg/L	1	6/14/2022 6:18:19 PM	A88751
Chromium	ND	0.0020	0.0060		mg/L	1	6/14/2022 6:18:19 PM	A88751
Cobalt	ND	0.0024	0.0060		mg/L	1	6/14/2022 6:18:19 PM	A88751
Nickel	ND	0.0033	0.010		mg/L	1	6/14/2022 6:18:19 PM	A88751
Silver	ND	0.0013	0.0050		mg/L	1	6/14/2022 6:18:19 PM	A88751
Vanadium	0.0031	0.0017	0.050	J	mg/L	1	6/14/2022 6:18:19 PM	A88751
Zinc	0.0076	0.0032	0.010	J	mg/L	1	6/15/2022 7:11:52 PM	B88784
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/13/2022 1:06:35 PM	C88688
Arsenic	0.00069	0.00012	0.0010	J	mg/L	1	6/13/2022 1:06:35 PM	C88688
Lead	ND	0.000057	0.00050		mg/L	1	6/13/2022 2:56:55 PM	C88688
Selenium	ND	0.00034	0.0010		mg/L	1	6/13/2022 1:06:35 PM	C88688
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/14/2022 3:12:13 PM	68089

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB-6-9-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/9/2022 11:35:00 AM
Lab ID: 2206602-007A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	6/16/2022 7:22:54 PM	R88822
Toluene	ND	0.20	1.0		µg/L	1	6/16/2022 7:22:54 PM	R88822
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/16/2022 7:22:54 PM	R88822
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	6/16/2022 7:22:54 PM	R88822
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/16/2022 7:22:54 PM	R88822
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/16/2022 7:22:54 PM	R88822
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/16/2022 7:22:54 PM	R88822
Acetone	ND	2.5	10		µg/L	1	6/16/2022 7:22:54 PM	R88822
Bromomethane	ND	0.85	3.0		µg/L	1	6/16/2022 7:22:54 PM	R88822
2-Butanone	ND	2.0	10		µg/L	1	6/16/2022 7:22:54 PM	R88822
Carbon disulfide	ND	0.59	10		µg/L	1	6/16/2022 7:22:54 PM	R88822
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/16/2022 7:22:54 PM	R88822
Chloroform	ND	0.13	1.0		µg/L	1	6/16/2022 7:22:54 PM	R88822
Chloromethane	ND	0.41	3.0		µg/L	1	6/16/2022 7:22:54 PM	R88822
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/16/2022 7:22:54 PM	R88822
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/16/2022 7:22:54 PM	R88822
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/16/2022 7:22:54 PM	R88822
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/16/2022 7:22:54 PM	R88822
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/16/2022 7:22:54 PM	R88822
Methylene Chloride	ND	0.50	3.0		µg/L	1	6/16/2022 7:22:54 PM	R88822
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/16/2022 7:22:54 PM	R88822
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/16/2022 7:22:54 PM	R88822
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	6/16/2022 7:22:54 PM	R88822
Styrene	ND	0.14	1.0		µg/L	1	6/16/2022 7:22:54 PM	R88822
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/16/2022 7:22:54 PM	R88822
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/16/2022 7:22:54 PM	R88822
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/16/2022 7:22:54 PM	R88822
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/16/2022 7:22:54 PM	R88822
Xylenes, Total	ND	0.37	1.5		µg/L	1	6/16/2022 7:22:54 PM	R88822
Surr: 1,2-Dichloroethane-d4	108	0	70-130		%Rec	1	6/16/2022 7:22:54 PM	R88822
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	6/16/2022 7:22:54 PM	R88822
Surr: Dibromofluoromethane	126	0	70-130		%Rec	1	6/16/2022 7:22:54 PM	R88822
Surr: Toluene-d8	89.0	0	70-130		%Rec	1	6/16/2022 7:22:54 PM	R88822

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-9-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date:
Lab ID: 2206602-008A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.016	0.0090	0.050	J	mg/L	1	6/15/2022 4:15:00 AM	C88732
Surr: BFB	94.2	0	70-130		%Rec	1	6/15/2022 4:15:00 AM	C88732
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	6/16/2022 7:51:56 PM	R88822
Toluene	ND	0.20	1.0		µg/L	1	6/16/2022 7:51:56 PM	R88822
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/16/2022 7:51:56 PM	R88822
Methyl tert-butyl ether (MTBE)	15	0.39	1.0		µg/L	1	6/16/2022 7:51:56 PM	R88822
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/16/2022 7:51:56 PM	R88822
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/16/2022 7:51:56 PM	R88822
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/16/2022 7:51:56 PM	R88822
Acetone	ND	2.5	10		µg/L	1	6/16/2022 7:51:56 PM	R88822
Bromomethane	ND	0.85	3.0		µg/L	1	6/16/2022 7:51:56 PM	R88822
2-Butanone	ND	2.0	10		µg/L	1	6/16/2022 7:51:56 PM	R88822
Carbon disulfide	ND	0.59	10		µg/L	1	6/16/2022 7:51:56 PM	R88822
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/16/2022 7:51:56 PM	R88822
Chloroform	ND	0.13	1.0		µg/L	1	6/16/2022 7:51:56 PM	R88822
Chloromethane	ND	0.41	3.0		µg/L	1	6/16/2022 7:51:56 PM	R88822
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/16/2022 7:51:56 PM	R88822
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/16/2022 7:51:56 PM	R88822
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/16/2022 7:51:56 PM	R88822
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/16/2022 7:51:56 PM	R88822
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/16/2022 7:51:56 PM	R88822
Methylene Chloride	ND	0.50	3.0		µg/L	1	6/16/2022 7:51:56 PM	R88822
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/16/2022 7:51:56 PM	R88822
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/16/2022 7:51:56 PM	R88822
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	6/16/2022 7:51:56 PM	R88822
Styrene	ND	0.14	1.0		µg/L	1	6/16/2022 7:51:56 PM	R88822
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/16/2022 7:51:56 PM	R88822
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/16/2022 7:51:56 PM	R88822
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/16/2022 7:51:56 PM	R88822
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/16/2022 7:51:56 PM	R88822
Xylenes, Total	ND	0.37	1.5		µg/L	1	6/16/2022 7:51:56 PM	R88822
Surr: 1,2-Dichloroethane-d4	102	0	70-130		%Rec	1	6/16/2022 7:51:56 PM	R88822
Surr: 4-Bromofluorobenzene	99.3	0	70-130		%Rec	1	6/16/2022 7:51:56 PM	R88822
Surr: Dibromofluoromethane	124	0	70-130		%Rec	1	6/16/2022 7:51:56 PM	R88822
Surr: Toluene-d8	90.3	0	70-130		%Rec	1	6/16/2022 7:51:56 PM	R88822

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-9-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date:
Lab ID: 2206602-008B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	6/14/2022 4:20:53 PM	68078

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** DUP-6-9-22
Project: 2022 GW Sampling 2nd Qtr **Collection Date:**
Lab ID: 2206602-008C **Matrix:** Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.016	0.016	0.064	J	mg/L	1	6/20/2022 8:58:00 PM	68123
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	6/20/2022 8:58:00 PM	68123
Surr: DNOP	43.8	0	42.2-138		%Rec	1	6/20/2022 8:58:00 PM	68123
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	6/28/2022 3:57:42 PM	68135
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	6/28/2022 3:57:42 PM	68135
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	6/28/2022 3:57:42 PM	68135
Di-n-octyl phthalate	ND	12	20		µg/L	1	6/28/2022 3:57:42 PM	68135
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	6/28/2022 3:57:42 PM	68135
Diethyl phthalate	ND	6.0	10		µg/L	1	6/28/2022 3:57:42 PM	68135
Dimethyl phthalate	ND	6.0	10		µg/L	1	6/28/2022 3:57:42 PM	68135
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	6/28/2022 3:57:42 PM	68135
2,4-Dinitrophenol	ND	16	20		µg/L	1	6/28/2022 3:57:42 PM	68135
2-Methylphenol	ND	5.0	10		µg/L	1	6/28/2022 3:57:42 PM	68135
3+4-Methylphenol	ND	5.1	10		µg/L	1	6/28/2022 3:57:42 PM	68135
Phenol	ND	18	20		µg/L	1	6/28/2022 3:57:42 PM	68135
Pyridine	ND	14	60		µg/L	1	6/28/2022 3:57:42 PM	68135
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	6/28/2022 3:57:42 PM	68135
Surr: 2-Fluorophenol	58.7	0	29.4-87.7		%Rec	1	6/28/2022 3:57:42 PM	68135
Surr: Phenol-d5	44.6	0	28.5-64.7		%Rec	1	6/28/2022 3:57:42 PM	68135
Surr: 2,4,6-Tribromophenol	74.1	0	18.6-129		%Rec	1	6/28/2022 3:57:42 PM	68135
Surr: Nitrobenzene-d5	71.9	0	36.9-103		%Rec	1	6/28/2022 3:57:42 PM	68135
Surr: 2-Fluorobiphenyl	70.0	0	38.1-99.9		%Rec	1	6/28/2022 3:57:42 PM	68135
Surr: 4-Terphenyl-d14	94.2	0	48-155		%Rec	1	6/28/2022 3:57:42 PM	68135
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	0.80	0.11	1.0	J	µg/L	1	6/22/2022 1:41:00 AM	68135
Naphthalene	ND	0.20	0.30		µg/L	1	6/22/2022 1:41:00 AM	68135
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	6/22/2022 1:41:00 AM	68135
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	6/22/2022 1:41:00 AM	68135
Acenaphthene	ND	0.14	0.30		µg/L	1	6/22/2022 1:41:00 AM	68135
Fluorene	ND	0.095	0.30		µg/L	1	6/22/2022 1:41:00 AM	68135
Phenanthrene	ND	0.16	0.30		µg/L	1	6/22/2022 1:41:00 AM	68135
Anthracene	ND	0.14	0.30		µg/L	1	6/22/2022 1:41:00 AM	68135
Fluoranthene	ND	0.14	0.30		µg/L	1	6/22/2022 1:41:00 AM	68135
Pyrene	ND	0.32	1.0		µg/L	1	6/22/2022 1:41:00 AM	68135
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	6/22/2022 1:41:00 AM	68135
Chrysene	ND	0.25	0.30		µg/L	1	6/22/2022 1:41:00 AM	68135
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	6/22/2022 1:41:00 AM	68135
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	6/22/2022 1:41:00 AM	68135

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** DUP-6-9-22
Project: 2022 GW Sampling 2nd Qtr **Collection Date:**
Lab ID: 2206602-008C **Matrix:** Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	75.9	0	31.6-100		%Rec	1	6/22/2022 1:41:00 AM	68135
Surr: 2-Fluorobiphenyl	67.2	0	26.7-90.1		%Rec	1	6/22/2022 1:41:00 AM	68135
Surr: 4-Terphenyl-d14	97.8	0	72.3-147		%Rec	1	6/22/2022 1:41:00 AM	68135

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-9-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date:
Lab ID: 2206602-008D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	0.28	0.0016	0.0030		mg/L	1	6/16/2022 5:13:47 PM	68127
Beryllium	ND	0.00088	0.0020		mg/L	1	6/16/2022 5:13:47 PM	68127
Cadmium	ND	0.0018	0.0020		mg/L	1	6/16/2022 5:13:47 PM	68127
Chromium	ND	0.0020	0.0060		mg/L	1	6/16/2022 5:13:47 PM	68127
Cobalt	ND	0.0035	0.0060		mg/L	1	6/16/2022 5:13:47 PM	68127
Nickel	ND	0.0053	0.010		mg/L	1	6/16/2022 5:13:47 PM	68127
Silver	ND	0.0018	0.0050		mg/L	1	6/16/2022 5:13:47 PM	68127
Vanadium	0.0096	0.0035	0.050	J	mg/L	1	6/16/2022 5:13:47 PM	68127
Zinc	ND	0.0039	0.010		mg/L	1	6/16/2022 5:13:47 PM	68127
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/20/2022 11:54:50 AM	68127
Arsenic	0.0010	0.00013	0.0010		mg/L	1	6/20/2022 11:54:50 AM	68127
Lead	ND	0.000061	0.00050		mg/L	1	6/20/2022 11:54:50 AM	68127
Selenium	0.0014	0.00037	0.0010		mg/L	1	6/20/2022 11:54:50 AM	68127
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/14/2022 3:14:21 PM	68089

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-9-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date:
Lab ID: 2206602-008E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.27	0.0011	0.0020		mg/L	1	6/14/2022 6:25:00 PM	A88751
Beryllium	ND	0.00088	0.0020		mg/L	1	6/14/2022 6:25:00 PM	A88751
Cadmium	ND	0.00098	0.0020		mg/L	1	6/14/2022 6:25:00 PM	A88751
Chromium	ND	0.0020	0.0060		mg/L	1	6/14/2022 6:25:00 PM	A88751
Cobalt	ND	0.0024	0.0060		mg/L	1	6/14/2022 6:25:00 PM	A88751
Nickel	ND	0.0033	0.010		mg/L	1	6/14/2022 6:25:00 PM	A88751
Silver	ND	0.0013	0.0050		mg/L	1	6/14/2022 6:25:00 PM	A88751
Vanadium	0.0095	0.0017	0.050	J	mg/L	1	6/14/2022 6:25:00 PM	A88751
Zinc	0.0075	0.0032	0.010	J	mg/L	1	6/15/2022 7:16:31 PM	B88784
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/13/2022 1:17:22 PM	C88688
Arsenic	0.00089	0.00012	0.0010	J	mg/L	1	6/13/2022 1:17:22 PM	C88688
Lead	ND	0.000057	0.00050		mg/L	1	6/13/2022 2:59:37 PM	C88688
Selenium	0.00082	0.00034	0.0010	J	mg/L	1	6/13/2022 1:17:22 PM	C88688
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/14/2022 3:20:46 PM	68089

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5B
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/9/2022 9:50:00 AM
Lab ID: 2206602-009A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.014	0.0090	0.050	J	mg/L	1	6/15/2022 4:35:00 AM	C88732
Surr: BFB	92.3	0	70-130		%Rec	1	6/15/2022 4:35:00 AM	C88732
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	6/16/2022 8:20:55 PM	R88822
Toluene	ND	0.20	1.0		µg/L	1	6/16/2022 8:20:55 PM	R88822
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/16/2022 8:20:55 PM	R88822
Methyl tert-butyl ether (MTBE)	8.7	0.39	1.0		µg/L	1	6/16/2022 8:20:55 PM	R88822
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/16/2022 8:20:55 PM	R88822
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/16/2022 8:20:55 PM	R88822
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/16/2022 8:20:55 PM	R88822
Acetone	ND	2.5	10		µg/L	1	6/16/2022 8:20:55 PM	R88822
Bromomethane	ND	0.85	3.0		µg/L	1	6/16/2022 8:20:55 PM	R88822
2-Butanone	ND	2.0	10		µg/L	1	6/16/2022 8:20:55 PM	R88822
Carbon disulfide	ND	0.59	10		µg/L	1	6/16/2022 8:20:55 PM	R88822
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/16/2022 8:20:55 PM	R88822
Chloroform	ND	0.13	1.0		µg/L	1	6/16/2022 8:20:55 PM	R88822
Chloromethane	ND	0.41	3.0		µg/L	1	6/16/2022 8:20:55 PM	R88822
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/16/2022 8:20:55 PM	R88822
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/16/2022 8:20:55 PM	R88822
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/16/2022 8:20:55 PM	R88822
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/16/2022 8:20:55 PM	R88822
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/16/2022 8:20:55 PM	R88822
Methylene Chloride	52	0.50	3.0		µg/L	1	6/16/2022 8:20:55 PM	R88822
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/16/2022 8:20:55 PM	R88822
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/16/2022 8:20:55 PM	R88822
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	6/16/2022 8:20:55 PM	R88822
Styrene	ND	0.14	1.0		µg/L	1	6/16/2022 8:20:55 PM	R88822
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/16/2022 8:20:55 PM	R88822
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/16/2022 8:20:55 PM	R88822
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/16/2022 8:20:55 PM	R88822
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/16/2022 8:20:55 PM	R88822
Xylenes, Total	ND	0.37	1.5		µg/L	1	6/16/2022 8:20:55 PM	R88822
Surr: 1,2-Dichloroethane-d4	99.4	0	70-130		%Rec	1	6/16/2022 8:20:55 PM	R88822
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	6/16/2022 8:20:55 PM	R88822
Surr: Dibromofluoromethane	122	0	70-130		%Rec	1	6/16/2022 8:20:55 PM	R88822
Surr: Toluene-d8	88.7	0	70-130		%Rec	1	6/16/2022 8:20:55 PM	R88822

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5B
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/9/2022 9:50:00 AM
Lab ID: 2206602-009B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	6/14/2022 4:51:35 PM	68078

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5B
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/9/2022 9:50:00 AM
Lab ID: 2206602-009C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.030	0.016	0.064	J	mg/L	1	6/20/2022 9:22:05 PM	68123
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	6/20/2022 9:22:05 PM	68123
Surr: DNOP	83.5	0	42.2-138		%Rec	1	6/20/2022 9:22:05 PM	68123
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	6/28/2022 4:39:30 PM	68135
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	6/28/2022 4:39:30 PM	68135
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	6/28/2022 4:39:30 PM	68135
Di-n-octyl phthalate	ND	12	20		µg/L	1	6/28/2022 4:39:30 PM	68135
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	6/28/2022 4:39:30 PM	68135
Diethyl phthalate	ND	6.0	10		µg/L	1	6/28/2022 4:39:30 PM	68135
Dimethyl phthalate	ND	6.0	10		µg/L	1	6/28/2022 4:39:30 PM	68135
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	6/28/2022 4:39:30 PM	68135
2,4-Dinitrophenol	ND	16	20		µg/L	1	6/28/2022 4:39:30 PM	68135
2-Methylphenol	ND	5.0	10		µg/L	1	6/28/2022 4:39:30 PM	68135
3+4-Methylphenol	ND	5.1	10		µg/L	1	6/28/2022 4:39:30 PM	68135
Phenol	ND	18	20		µg/L	1	6/28/2022 4:39:30 PM	68135
Pyridine	ND	14	60		µg/L	1	6/28/2022 4:39:30 PM	68135
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	6/28/2022 4:39:30 PM	68135
Surr: 2-Fluorophenol	48.7	0	29.4-87.7		%Rec	1	6/28/2022 4:39:30 PM	68135
Surr: Phenol-d5	38.0	0	28.5-64.7		%Rec	1	6/28/2022 4:39:30 PM	68135
Surr: 2,4,6-Tribromophenol	62.5	0	18.6-129		%Rec	1	6/28/2022 4:39:30 PM	68135
Surr: Nitrobenzene-d5	57.1	0	36.9-103		%Rec	1	6/28/2022 4:39:30 PM	68135
Surr: 2-Fluorobiphenyl	56.8	0	38.1-99.9		%Rec	1	6/28/2022 4:39:30 PM	68135
Surr: 4-Terphenyl-d14	80.7	0	48-155		%Rec	1	6/28/2022 4:39:30 PM	68135
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	0.76	0.11	1.0	J	µg/L	1	6/22/2022 2:28:00 AM	68135
Naphthalene	ND	0.20	0.30		µg/L	1	6/22/2022 2:28:00 AM	68135
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	6/22/2022 2:28:00 AM	68135
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	6/22/2022 2:28:00 AM	68135
Acenaphthene	ND	0.14	0.30		µg/L	1	6/22/2022 2:28:00 AM	68135
Fluorene	ND	0.095	0.30		µg/L	1	6/22/2022 2:28:00 AM	68135
Phenanthrene	ND	0.16	0.30		µg/L	1	6/22/2022 2:28:00 AM	68135
Anthracene	ND	0.14	0.30		µg/L	1	6/22/2022 2:28:00 AM	68135
Fluoranthene	ND	0.14	0.30		µg/L	1	6/22/2022 2:28:00 AM	68135
Pyrene	ND	0.32	1.0		µg/L	1	6/22/2022 2:28:00 AM	68135
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	6/22/2022 2:28:00 AM	68135
Chrysene	ND	0.25	0.30		µg/L	1	6/22/2022 2:28:00 AM	68135
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	6/22/2022 2:28:00 AM	68135
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	6/22/2022 2:28:00 AM	68135

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5B
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/9/2022 9:50:00 AM
Lab ID: 2206602-009C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	68.5	0	31.6-100		%Rec	1	6/22/2022 2:28:00 AM	68135
Surr: 2-Fluorobiphenyl	61.5	0	26.7-90.1		%Rec	1	6/22/2022 2:28:00 AM	68135
Surr: 4-Terphenyl-d14	92.5	0	72.3-147		%Rec	1	6/22/2022 2:28:00 AM	68135

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5B
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/9/2022 9:50:00 AM
Lab ID: 2206602-009D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	0.28	0.0016	0.0030		mg/L	1	6/16/2022 5:24:03 PM	68127
Beryllium	ND	0.00088	0.0020		mg/L	1	6/16/2022 5:24:03 PM	68127
Cadmium	ND	0.0018	0.0020		mg/L	1	6/16/2022 5:24:03 PM	68127
Chromium	ND	0.0020	0.0060		mg/L	1	6/16/2022 5:24:03 PM	68127
Cobalt	ND	0.0035	0.0060		mg/L	1	6/16/2022 5:24:03 PM	68127
Nickel	ND	0.0053	0.010		mg/L	1	6/16/2022 5:24:03 PM	68127
Silver	ND	0.0018	0.0050		mg/L	1	6/16/2022 5:24:03 PM	68127
Vanadium	0.0092	0.0035	0.050	J	mg/L	1	6/16/2022 5:24:03 PM	68127
Zinc	ND	0.0039	0.010		mg/L	1	6/16/2022 5:24:03 PM	68127
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/20/2022 11:57:16 AM	68127
Arsenic	0.0011	0.00013	0.0010		mg/L	1	6/20/2022 11:57:16 AM	68127
Lead	ND	0.000061	0.00050		mg/L	1	6/20/2022 11:57:16 AM	68127
Selenium	0.0011	0.00037	0.0010		mg/L	1	6/20/2022 11:57:16 AM	68127
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/14/2022 3:22:55 PM	68089

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5B
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/9/2022 9:50:00 AM
Lab ID: 2206602-009E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.26	0.0011	0.0020		mg/L	1	6/14/2022 6:26:42 PM	A88751
Beryllium	ND	0.00088	0.0020		mg/L	1	6/14/2022 6:26:42 PM	A88751
Cadmium	ND	0.00098	0.0020		mg/L	1	6/14/2022 6:26:42 PM	A88751
Chromium	ND	0.0020	0.0060		mg/L	1	6/14/2022 6:26:42 PM	A88751
Cobalt	ND	0.0024	0.0060		mg/L	1	6/14/2022 6:26:42 PM	A88751
Nickel	ND	0.0033	0.010		mg/L	1	6/14/2022 6:26:42 PM	A88751
Silver	ND	0.0013	0.0050		mg/L	1	6/14/2022 6:26:42 PM	A88751
Vanadium	0.0096	0.0017	0.050	J	mg/L	1	6/14/2022 6:26:42 PM	A88751
Zinc	0.0096	0.0032	0.010	J	mg/L	1	6/15/2022 7:18:49 PM	B88784
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	0.00070	0.00044	0.0010	J	mg/L	1	6/13/2022 1:20:03 PM	C88688
Arsenic	0.00088	0.00012	0.0010	J	mg/L	1	6/13/2022 1:20:03 PM	C88688
Lead	0.000064	0.000057	0.00050	J	mg/L	1	6/13/2022 3:02:18 PM	C88688
Selenium	0.00055	0.00034	0.0010	J	mg/L	1	6/13/2022 1:20:03 PM	C88688
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/14/2022 3:29:24 PM	68089

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 2nd Qtr
Collection Date:
Lab ID: 2206602-010A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	6/16/2022 8:49:48 PM	R88822
Toluene	ND	0.20	1.0		µg/L	1	6/16/2022 8:49:48 PM	R88822
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/16/2022 8:49:48 PM	R88822
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	6/16/2022 8:49:48 PM	R88822
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/16/2022 8:49:48 PM	R88822
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/16/2022 8:49:48 PM	R88822
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/16/2022 8:49:48 PM	R88822
Acetone	ND	2.5	10		µg/L	1	6/16/2022 8:49:48 PM	R88822
Bromomethane	ND	0.85	3.0		µg/L	1	6/16/2022 8:49:48 PM	R88822
2-Butanone	ND	2.0	10		µg/L	1	6/16/2022 8:49:48 PM	R88822
Carbon disulfide	ND	0.59	10		µg/L	1	6/16/2022 8:49:48 PM	R88822
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/16/2022 8:49:48 PM	R88822
Chloroform	ND	0.13	1.0		µg/L	1	6/16/2022 8:49:48 PM	R88822
Chloromethane	ND	0.41	3.0		µg/L	1	6/16/2022 8:49:48 PM	R88822
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/16/2022 8:49:48 PM	R88822
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/16/2022 8:49:48 PM	R88822
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/16/2022 8:49:48 PM	R88822
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/16/2022 8:49:48 PM	R88822
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/16/2022 8:49:48 PM	R88822
Methylene Chloride	ND	0.50	3.0		µg/L	1	6/16/2022 8:49:48 PM	R88822
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/16/2022 8:49:48 PM	R88822
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/16/2022 8:49:48 PM	R88822
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	6/16/2022 8:49:48 PM	R88822
Styrene	ND	0.14	1.0		µg/L	1	6/16/2022 8:49:48 PM	R88822
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/16/2022 8:49:48 PM	R88822
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/16/2022 8:49:48 PM	R88822
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/16/2022 8:49:48 PM	R88822
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/16/2022 8:49:48 PM	R88822
Xylenes, Total	ND	0.37	1.5		µg/L	1	6/16/2022 8:49:48 PM	R88822
Surr: 1,2-Dichloroethane-d4	98.7	0	70-130		%Rec	1	6/16/2022 8:49:48 PM	R88822
Surr: 4-Bromofluorobenzene	98.8	0	70-130		%Rec	1	6/16/2022 8:49:48 PM	R88822
Surr: Dibromofluoromethane	120	0	70-130		%Rec	1	6/16/2022 8:49:48 PM	R88822
Surr: Toluene-d8	90.0	0	70-130		%Rec	1	6/16/2022 8:49:48 PM	R88822

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206602**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 2nd Qtr
Collection Date:
Lab ID: 2206602-010B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	6/14/2022 5:06:51 PM	68078

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

ANALYTICAL REPORT

June 23, 2022

Revised Report

Hall Environmental Analysis Laboratory

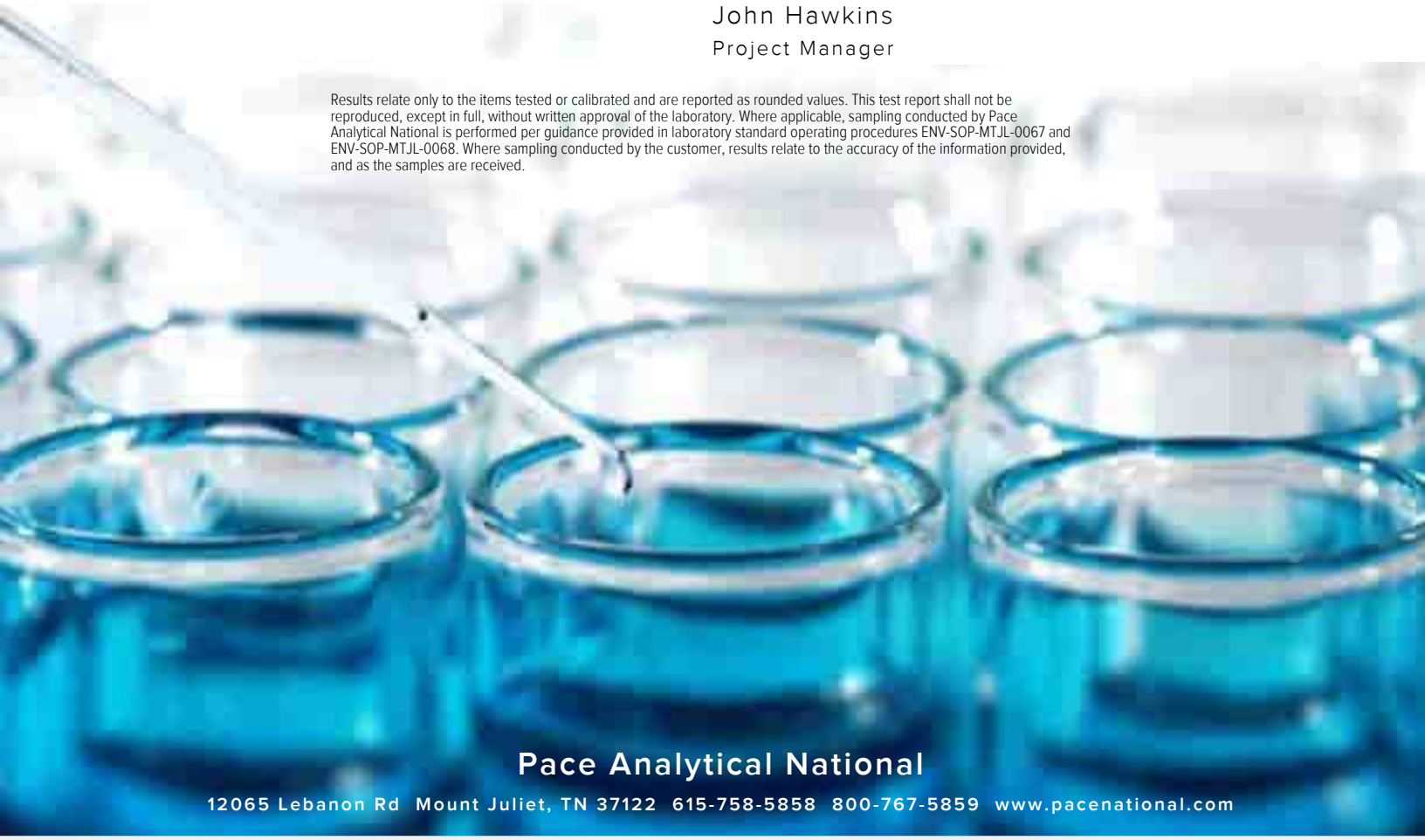
Sample Delivery Group:	L1504393
Samples Received:	06/14/2022
Project Number:	
Description:	

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By:

John Hawkins
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 4

Sr: Sample Results 5

2206602-001F EB-6-9-22 L1504393-01 5

2206602-002F BW-5C L1504393-02 6

2206602-003F OW-50 L1504393-03 7

2206602-004F OW-52 L1504393-04 8

2206602-005F OW-29 L1504393-05 9

2206602-006F OW-13 L1504393-06 10

2206602-008F DU-6-9-22 L1504393-07 11

2206602-009F BW-58 L1504393-08 12

Qc: Quality Control Summary 13

Wet Chemistry by Method 4500CN E-2016 13

Gl: Glossary of Terms 14

Al: Accreditations & Locations 15

Sc: Sample Chain of Custody 16

Released to Imaging: 4/21/2023 9:40:26 AM

SAMPLE SUMMARY

2206602-001F EB-6-9-22 L1504393-01 WW

			Collected by	Collected date/time	Received date/time	
				06/09/22 09:00	06/14/22 08:45	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1882743	1	06/22/22 07:02	06/22/22 15:31	LDT	Mt. Juliet, TN

2206602-002F BW-5C L1504393-02 WW

			Collected by	Collected date/time	Received date/time	
				06/09/22 09:30	06/14/22 08:45	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1882743	1	06/22/22 07:02	06/22/22 15:32	LDT	Mt. Juliet, TN

2206602-003F OW-50 L1504393-03 WW

			Collected by	Collected date/time	Received date/time	
				06/09/22 10:30	06/14/22 08:45	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1882743	1	06/22/22 07:02	06/22/22 15:33	LDT	Mt. Juliet, TN

2206602-004F OW-52 L1504393-04 WW

			Collected by	Collected date/time	Received date/time	
				06/09/22 10:50	06/14/22 08:45	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1882743	1	06/22/22 07:02	06/22/22 15:34	LDT	Mt. Juliet, TN

2206602-005F OW-29 L1504393-05 WW

			Collected by	Collected date/time	Received date/time	
				06/09/22 11:15	06/14/22 08:45	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1882743	1	06/22/22 07:02	06/22/22 15:35	LDT	Mt. Juliet, TN

2206602-006F OW-13 L1504393-06 WW

			Collected by	Collected date/time	Received date/time	
				06/09/22 11:35	06/14/22 08:45	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1882743	1	06/22/22 07:02	06/22/22 15:36	LDT	Mt. Juliet, TN

2206602-008F DU-6-9-22 L1504393-07 WW

			Collected by	Collected date/time	Received date/time	
				06/09/22 00:00	06/14/22 08:45	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1882743	1	06/22/22 07:02	06/22/22 15:37	LDT	Mt. Juliet, TN

2206602-009F BW-58 L1504393-08 WW

			Collected by	Collected date/time	Received date/time	
				06/09/22 09:50	06/14/22 08:45	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1882743	1	06/22/22 07:02	06/22/22 15:38	LDT	Mt. Juliet, TN

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Report Revision History

Level II Report - Version 1: 06/23/22 08:40

Project Narrative

Reprint correct sample IDS

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	U		1.80	5.00	1	06/22/2022 15:31	WG1882743

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	U		1.80	5.00	1	06/22/2022 15:32	WG1882743

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	2.18	J	1.80	5.00	1	06/22/2022 15:33	WG1882743

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	U		1.80	5.00	1	06/22/2022 15:34	WG1882743

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	5.34		1.80	5.00	1	06/22/2022 15:35	WG1882743

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	U		1.80	5.00	1	06/22/2022 15:36	WG1882743

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	U		1.80	5.00	1	06/22/2022 15:37	WG1882743

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	U		1.80	5.00	1	06/22/2022 15:38	WG1882743

Method Blank (MB)

(MB) R3806171-1 06/22/22 15:06

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Cyanide	U		1.80	5.00

L1502913-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1502913-02 06/22/22 15:11 • (DUP) R3806171-3 06/22/22 15:12

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Cyanide	2.51	4.19	1	50.1	J P1	20

L1503767-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1503767-03 06/22/22 15:24 • (DUP) R3806171-8 06/22/22 15:25

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Cyanide	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3806171-2 06/22/22 15:07

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Cyanide	100	104	104	87.1-120	

L1503570-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1503570-03 06/22/22 15:15 • (MS) R3806171-4 06/22/22 15:18 • (MSD) R3806171-5 06/22/22 15:19

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Cyanide	100	U	99.1	98.5	99.1	98.5	1	90.0-110			0.607	20

L1503767-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1503767-02 06/22/22 15:21 • (MS) R3806171-6 06/22/22 15:22 • (MSD) R3806171-7 06/22/22 15:23

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Cyanide	100	U	99.1	101	99.1	101	1	90.0-110			1.90	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Received by OCD: 4/21/2023 9:21:57 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

D091

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

SUB CONTRATOR: Pace TN	COMPANY: PACE TN		PHONE: (800) 767-5859	FAX: (615) 758-5859	
ADDRESS: 12065 Lebanon Rd			ACCOUNT #:	EMAIL:	
CITY, STATE, ZIP: Mt. Juliet, TN 37122					

L5043893

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS	
1	2206602-001F	EB-6-9-22	500AMBHDP F-NAOH	Groundwater	6/9/2022 9:00:00 AM	1	Total Cyanide J and MDL	-01
2	2206602-002F	BW-5C	500AMBHDP F-NAOH	Groundwater	6/9/2022 9:30:00 AM	1	Total Cyanide J and MDL	-02
3	2206602-003F	OW-50	500AMBHDP F-NAOH	Groundwater	6/9/2022 10:30:00 AM	1	Total Cyanide J and MDL	-03
4	2206602-004F	OW-52	500AMBHDP F-NAOH	Groundwater	6/9/2022 10:50:00 AM	1	Total Cyanide J and MDL	-04
5	2206602-005F	OW-29	500AMBHDP F-NAOH	Groundwater	6/9/2022 11:15:00 AM	1	Total Cyanide J and MDL	-05
6	2206602-006F	OW-13	500AMBHDP F-NAOH	Groundwater	6/9/2022 11:35:00 AM	1	Total Cyanide J and MDL	-06
7	2206602-008F	DUP-6-9-22	500AMBHDP F-NAOH	Groundwater		1	Total Cyanide J and MDL	-07
8	2206602-009F	BW-5B	500AMBHDP F-NAOH	Groundwater	6/9/2022 9:50:00 AM	1	Total Cyanide J and MDL	-08

5755 8093 3113

Sample Receipt Checklist

COC Seal Present/Intact:	Y N	If Applicable	
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	Y N	Pres.Correct/Check:	Y N
Correct bottles used:	Y N	DRA7	
Sufficient volume sent:	Y N	5.9 to = 5.9	
RAD Screen <0.5 mR/hr:	Y N		

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you

Relinquished By: CMC	Date: 6/10/2022	Time: 1:34 PM	Received By: Matt Ch	Date: 6/14/22	Time: 0845
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☒ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED

☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY

Temp of samples _____ °C Attempt to Cool ? _____

Comments: _____

Released to Imaging: 4/21/2023 9:40:26 AM

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206602**

08-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **MB-68127**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **68127**	RunNo: **88823**
Prep Date: **6/15/2022**	Analysis Date: **6/16/2022**	SeqNo: **3153628** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LCSLL-68127**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **68127**	RunNo: **88823**
Prep Date: **6/15/2022**	Analysis Date: **6/16/2022**	SeqNo: **3153629** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0019	0.0030	0.002000	0	93.1	50	150			J
Beryllium	0.0021	0.0020	0.002000	0	104	50	150			
Cadmium	0.0022	0.0020	0.002000	0	111	50	150			
Chromium	0.0067	0.0060	0.006000	0	111	50	150			
Cobalt	0.0080	0.0060	0.006000	0	133	50	150			
Nickel	0.0050	0.010	0.005000	0	99.4	50	150			J
Silver	0.0054	0.0050	0.005000	0	108	50	150			
Vanadium	0.0097	0.050	0.01000	0	96.8	50	150			J
Zinc	0.011	0.010	0.01000	0	106	50	150			

Sample ID: **LCS-68127**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **68127**	RunNo: **88823**
Prep Date: **6/15/2022**	Analysis Date: **6/16/2022**	SeqNo: **3153630** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0030	0.5000	0	101	85	115			
Beryllium	0.52	0.0020	0.5000	0	105	85	115			
Cadmium	0.49	0.0020	0.5000	0	97.9	85	115			
Chromium	0.50	0.0060	0.5000	0	99.1	85	115			
Cobalt	0.49	0.0060	0.5000	0	97.1	85	115			
Nickel	0.48	0.010	0.5000	0	96.0	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			
Vanadium	0.50	0.050	0.5000	0	99.9	85	115			
Zinc	0.48	0.010	0.5000	0	96.6	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206602**

08-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **2206602-009DMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BW-5B**	Batch ID: **68127**	RunNo: **88823**
Prep Date: **6/15/2022**	Analysis Date: **6/16/2022**	SeqNo: **3153659** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.78	0.0030	0.5000	0.2762	102	70	130			
Beryllium	0.53	0.0020	0.5000	0	105	70	130			
Cadmium	0.49	0.0020	0.5000	0	97.3	70	130			
Chromium	0.50	0.0060	0.5000	0	99.2	70	130			
Cobalt	0.49	0.0060	0.5000	0	98.3	70	130			
Nickel	0.48	0.010	0.5000	0	96.8	70	130			
Silver	0.11	0.0050	0.1000	0	106	70	130			
Vanadium	0.52	0.050	0.5000	0.009227	102	70	130			
Zinc	0.52	0.010	0.5000	0	103	70	130			

Sample ID: **2206602-009DMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BW-5B**	Batch ID: **68127**	RunNo: **88823**
Prep Date: **6/15/2022**	Analysis Date: **6/16/2022**	SeqNo: **3153660** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.79	0.0030	0.5000	0.2762	103	70	130	0.552	20	
Beryllium	0.53	0.0020	0.5000	0	106	70	130	0.532	20	
Cadmium	0.50	0.0020	0.5000	0	99.1	70	130	1.81	20	
Chromium	0.51	0.0060	0.5000	0	101	70	130	2.27	20	
Cobalt	0.50	0.0060	0.5000	0	100	70	130	2.01	20	
Nickel	0.49	0.010	0.5000	0	98.4	70	130	1.61	20	
Silver	0.11	0.0050	0.1000	0	107	70	130	1.35	20	
Vanadium	0.52	0.050	0.5000	0.009227	103	70	130	1.12	20	
Zinc	0.53	0.010	0.5000	0	106	70	130	2.63	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206602**

08-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **MB-A**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A88751**	RunNo: **88751**
Prep Date:	Analysis Date: **6/14/2022**	SeqNo: **3151181** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								

Sample ID: **LLLCS-A**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A88751**	RunNo: **88751**
Prep Date:	Analysis Date: **6/14/2022**	SeqNo: **3151182** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0014	0.0020	0.002000	0	70.7	50	150			J
Beryllium	0.0022	0.0020	0.002000	0	110	50	150			
Cadmium	0.0020	0.0020	0.002000	0	97.6	50	150			J
Chromium	0.0057	0.0060	0.006000	0	95.1	50	150			J
Cobalt	0.0073	0.0060	0.006000	0	122	50	150			
Nickel	0.0047	0.010	0.005000	0	94.5	50	150			J
Silver	0.0053	0.0050	0.005000	0	107	50	150			
Vanadium	0.010	0.050	0.01000	0	100	50	150			J

Sample ID: **LCS-A**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A88751**	RunNo: **88751**
Prep Date:	Analysis Date: **6/14/2022**	SeqNo: **3151183** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.53	0.0020	0.5000	0	107	85	115			
Beryllium	0.54	0.0020	0.5000	0	108	85	115			
Cadmium	0.52	0.0020	0.5000	0	105	85	115			
Chromium	0.52	0.0060	0.5000	0	104	85	115			
Cobalt	0.53	0.0060	0.5000	0	106	85	115			
Nickel	0.51	0.010	0.5000	0	102	85	115			
Silver	0.10	0.0050	0.1000	0	104	85	115			
Vanadium	0.52	0.050	0.5000	0	105	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206602**

08-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **MB-B**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B88784**	RunNo: **88784**
Prep Date:	Analysis Date: **6/15/2022**	SeqNo: **3152486** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS-B**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B88784**	RunNo: **88784**
Prep Date:	Analysis Date: **6/15/2022**	SeqNo: **3152487** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0023	0.0020	0.002000	0	114	50	150			
Beryllium	0.0019	0.0020	0.002000	0	92.5	50	150			J
Cadmium	0.0025	0.0020	0.002000	0	127	50	150			
Chromium	0.0064	0.0060	0.006000	0	106	50	150			
Cobalt	0.0071	0.0060	0.006000	0	118	50	150			
Nickel	0.0032	0.010	0.005000	0	64.9	50	150			J
Silver	0.0047	0.0050	0.005000	0	94.6	50	150			J
Vanadium	0.010	0.050	0.01000	0	101	50	150			J
Zinc	0.011	0.010	0.01000	0	112	50	150			

Sample ID: **LCS-B**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B88784**	RunNo: **88784**
Prep Date:	Analysis Date: **6/15/2022**	SeqNo: **3152488** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	98.9	85	115			
Beryllium	0.50	0.0020	0.5000	0	99.7	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.5	85	115			
Chromium	0.50	0.0060	0.5000	0	99.1	85	115			
Cobalt	0.48	0.0060	0.5000	0	95.9	85	115			
Nickel	0.48	0.010	0.5000	0	96.0	85	115			
Silver	0.10	0.0050	0.1000	0	104	85	115			
Vanadium	0.50	0.050	0.5000	0	101	85	115			
Zinc	0.47	0.010	0.5000	0	94.3	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206602**

08-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **2206602-001EMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB-6-9-22**	Batch ID: **B88784**	RunNo: **88784**
Prep Date:	Analysis Date: **6/15/2022**	SeqNo: **3152493** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0020	0.5000	0	102	70	130			
Beryllium	0.52	0.0020	0.5000	0	103	70	130			
Cadmium	0.51	0.0020	0.5000	0	102	70	130			
Chromium	0.51	0.0060	0.5000	0	102	70	130			
Cobalt	0.49	0.0060	0.5000	0	98.5	70	130			
Nickel	0.50	0.010	0.5000	0	99.5	70	130			
Silver	0.11	0.0050	0.1000	0	110	70	130			
Vanadium	0.51	0.050	0.5000	0	102	70	130			
Zinc	0.50	0.010	0.5000	0.006532	99.2	70	130			

Sample ID: **2206602-001EMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB-6-9-22**	Batch ID: **B88784**	RunNo: **88784**
Prep Date:	Analysis Date: **6/15/2022**	SeqNo: **3152494** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0020	0.5000	0	100	70	130	0	20	
Beryllium	0.52	0.0020	0.5000	0	103	70	130	0	20	
Cadmium	0.50	0.0020	0.5000	0	101	70	130	0	20	
Chromium	0.50	0.0060	0.5000	0	99.8	70	130	0	20	
Cobalt	0.48	0.0060	0.5000	0	96.8	70	130	0	20	
Nickel	0.49	0.010	0.5000	0	97.4	70	130	0	20	
Silver	0.11	0.0050	0.1000	0	107	70	130	0	20	
Vanadium	0.50	0.050	0.5000	0	101	70	130	0	20	
Zinc	0.49	0.010	0.5000	0.006532	97.1	70	130	0	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206602**

08-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **MB-68127**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **68127**	RunNo: **88865**
Prep Date: **6/15/2022**	Analysis Date: **6/20/2022**	SeqNo: **3155291** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **MSLCSLL-68127**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **68127**	RunNo: **88865**
Prep Date: **6/15/2022**	Analysis Date: **6/20/2022**	SeqNo: **3155292** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00096	0.0010	0.001000	0	96.0	50	150			J
Arsenic	0.0011	0.0010	0.001000	0	105	50	150			
Lead	0.00051	0.00050	0.0005000	0	102	50	150			
Selenium	0.00084	0.0010	0.001000	0	84.1	50	150			J

Sample ID: **MSLCS-68127**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **68127**	RunNo: **88865**
Prep Date: **6/15/2022**	Analysis Date: **6/20/2022**	SeqNo: **3155293** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.6	85	115			
Arsenic	0.025	0.0010	0.02500	0	101	85	115			
Lead	0.012	0.00050	0.01250	0	97.5	85	115			
Selenium	0.024	0.0010	0.02500	0	97.4	85	115			

Sample ID: **2206602-005DMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Metals**
Client ID: **OW-29**	Batch ID: **68127**	RunNo: **88865**
Prep Date: **6/15/2022**	Analysis Date: **6/20/2022**	SeqNo: **3155361** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	105	70	130			
Lead	0.0098	0.00050	0.01250	0	78.5	70	130			
Selenium	0.031	0.0010	0.02500	0	123	70	130			

Sample ID: **2206602-005DMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Metals**
Client ID: **OW-29**	Batch ID: **68127**	RunNo: **88865**
Prep Date: **6/15/2022**	Analysis Date: **6/20/2022**	SeqNo: **3156053** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.029	0.0050	0.02500	0	117	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206602**

08-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **C88688**	RunNo: **88688**
Prep Date:	Analysis Date: **6/13/2022**	SeqNo: **3148259** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **C88688**	RunNo: **88688**
Prep Date:	Analysis Date: **6/13/2022**	SeqNo: **3148260** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0011	0.0010	0.001000	0	108	50	150			
Arsenic	0.0011	0.0010	0.001000	0	106	50	150			
Lead	0.00053	0.00050	0.0005000	0	105	50	150			
Selenium	0.0011	0.0010	0.001000	0	109	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **C88688**	RunNo: **88688**
Prep Date:	Analysis Date: **6/13/2022**	SeqNo: **3148261** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	102	85	115			
Arsenic	0.025	0.0010	0.02500	0	98.3	85	115			
Lead	0.012	0.00050	0.01250	0	97.8	85	115			
Selenium	0.027	0.0010	0.02500	0	108	85	115			

Sample ID: **2206602-001EMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **EB-6-9-22**	Batch ID: **C88688**	RunNo: **88688**
Prep Date:	Analysis Date: **6/13/2022**	SeqNo: **3148297** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	102	70	130			
Arsenic	0.023	0.0010	0.02500	0	91.4	70	130			
Selenium	0.024	0.0010	0.02500	0	97.5	70	130			

Sample ID: **2206602-001EMSDL**	SampType: **MSD**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **EB-6-9-22**	Batch ID: **C88688**	RunNo: **88688**
Prep Date:	Analysis Date: **6/13/2022**	SeqNo: **3148298** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	99.1	70	130	2.53	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206602**

08-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **2206602-001EMSDL**	SampType: **MSD**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **EB-6-9-22**	Batch ID: **C88688**	RunNo: **88688**
Prep Date:	Analysis Date: **6/13/2022**	SeqNo: **3148298** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.023	0.0010	0.02500	0	91.6	70	130	0.191	20	
Selenium	0.024	0.0010	0.02500	0	94.0	70	130	3.63	20	

Sample ID: **2206602-002EMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BW-5C**	Batch ID: **C88688**	RunNo: **88688**
Prep Date:	Analysis Date: **6/13/2022**	SeqNo: **3148300** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.028	0.0010	0.02500	0.0005467	112	70	130			
Selenium	0.026	0.0010	0.02500	0.0003976	101	70	130			

Sample ID: **2206602-001EMS**	SampType: **MS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **EB-6-9-22**	Batch ID: **C88688**	RunNo: **88688**
Prep Date:	Analysis Date: **6/13/2022**	SeqNo: **3148336** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.012	0.00050	0.01250	0	94.5	70	130			

Sample ID: **2206602-001EMSD**	SampType: **MSD**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **EB-6-9-22**	Batch ID: **C88688**	RunNo: **88688**
Prep Date:	Analysis Date: **6/13/2022**	SeqNo: **3148337** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.012	0.00050	0.01250	0	94.1	70	130	0.390	20	

Sample ID: **2206602-002EMS**	SampType: **MS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BW-5C**	Batch ID: **C88688**	RunNo: **88688**
Prep Date:	Analysis Date: **6/13/2022**	SeqNo: **3148339** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.12	0.0050	0.1250	0	99.2	70	130			
Lead	0.056	0.0025	0.06250	0	89.2	70	130			

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B88918**	RunNo: **88918**
Prep Date:	Analysis Date: **6/21/2022**	SeqNo: **3157492** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206602**

08-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B88918**	RunNo: **88918**
Prep Date:	Analysis Date: **6/21/2022**	SeqNo: **3157492** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B88918**	RunNo: **88918**
Prep Date:	Analysis Date: **6/21/2022**	SeqNo: **3157493** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0011	0.0010	0.001000	0	113	50	150			
Arsenic	0.0012	0.0010	0.001000	0	117	50	150			
Lead	0.00057	0.00050	0.0005000	0	114	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B88918**	RunNo: **88918**
Prep Date:	Analysis Date: **6/21/2022**	SeqNo: **3157494** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	101	85	115			
Arsenic	0.026	0.0010	0.02500	0	105	85	115			
Lead	0.013	0.00050	0.01250	0	101	85	115			
Selenium	0.026	0.0010	0.02500	0	102	85	115			

Sample ID: **LCSD**	SampType: **LCSD**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSS02**	Batch ID: **B88918**	RunNo: **88918**
Prep Date:	Analysis Date: **6/21/2022**	SeqNo: **3157495** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	103	85	115	1.71	20	
Arsenic	0.026	0.0010	0.02500	0	105	85	115	0.0894	20	
Lead	0.013	0.00050	0.01250	0	103	85	115	2.56	20	
Selenium	0.025	0.0010	0.02500	0	100	85	115	1.84	20	

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B88918**	RunNo: **88918**
Prep Date:	Analysis Date: **6/21/2022**	SeqNo: **3157510** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.00092	0.0010	0.001000	0	92.2	50	150			J

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206602**

08-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **MB-68089**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW**	Batch ID: **68089**	RunNo: **88725**
Prep Date: **6/14/2022**	Analysis Date: **6/14/2022**	SeqNo: **3150007** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-68089**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC**	Batch ID: **68089**	RunNo: **88725**
Prep Date: **6/14/2022**	Analysis Date: **6/14/2022**	SeqNo: **3150008** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00019	0.00020	0.0001500	0	129	50	150			J

Sample ID: **LCS-68089**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW**	Batch ID: **68089**	RunNo: **88725**
Prep Date: **6/14/2022**	Analysis Date: **6/14/2022**	SeqNo: **3150009** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0053	0.00020	0.005000	0	107	85	115			

Sample ID: **2206602-009DMS**	SampType: **MS**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **BW-5B**	Batch ID: **68089**	RunNo: **88725**
Prep Date: **6/14/2022**	Analysis Date: **6/14/2022**	SeqNo: **3150057** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.00020	0.005000	0	99.2	75	125			

Sample ID: **2206602-009DMSD**	SampType: **MSD**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **BW-5B**	Batch ID: **68089**	RunNo: **88725**
Prep Date: **6/14/2022**	Analysis Date: **6/14/2022**	SeqNo: **3150058** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0049	0.00020	0.005000	0	98.9	75	125	0.329	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206602**

08-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **MB-68078**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **68078**	RunNo: **88730**
Prep Date: **6/14/2022**	Analysis Date: **6/14/2022**	SeqNo: **3150157** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **MB-68078**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **68078**	RunNo: **88730**
Prep Date: **6/14/2022**	Analysis Date: **6/14/2022**	SeqNo: **3150158** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-68078**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW**	Batch ID: **68078**	RunNo: **88730**
Prep Date: **6/14/2022**	Analysis Date: **6/14/2022**	SeqNo: **3150159** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.12	0.010	0.1000	0	119	70	130			

Sample ID: **LCSD-68078**	SampType: **LCSD**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSS02**	Batch ID: **68078**	RunNo: **88730**
Prep Date: **6/14/2022**	Analysis Date: **6/14/2022**	SeqNo: **3150161** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.12	0.010	0.1000	0	117	70	130	1.67	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206602**

08-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **MB-68123**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **PBW**	Batch ID: **68123**	RunNo: **88890**
Prep Date: **6/15/2022**	Analysis Date: **6/20/2022**	SeqNo: **3156746** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.021	0.064								J
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.030		0.03750		80.2	42.2	138			

Sample ID: **LCS-68123**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSW**	Batch ID: **68123**	RunNo: **88890**
Prep Date: **6/15/2022**	Analysis Date: **6/20/2022**	SeqNo: **3156747** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.083	0.064	0.1875	0	44.3	31.7	75.4			
Surr: DNOP	0.014		0.01875		74.4	42.2	138			

Sample ID: **LCSD-68123**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02**	Batch ID: **68123**	RunNo: **88890**
Prep Date: **6/15/2022**	Analysis Date: **6/20/2022**	SeqNo: **3156748** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.096	0.064	0.1875	0	51.4	31.7	75.4	14.7	20	
Surr: DNOP	0.016		0.01875		84.7	42.2	138	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206602**

08-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **2.5ug gro lcs2**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **C88732**	RunNo: **88732**
Prep Date:	Analysis Date: **6/14/2022**	SeqNo: **3150195** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	92.8	80	120			
Surr: BFB	39		20.00		194	70	130			S

Sample ID: **mb2**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **C88732**	RunNo: **88732**
Prep Date:	Analysis Date: **6/15/2022**	SeqNo: **3150196** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	19		20.00		93.9	70	130			

Sample ID: **2206602-001ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **EB-6-9-22**	Batch ID: **C88732**	RunNo: **88732**
Prep Date:	Analysis Date: **6/15/2022**	SeqNo: **3150198** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.43	0.050	0.5000	0	86.9	70	130			
Surr: BFB	38		20.00		191	70	130			S

Sample ID: **2206602-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **EB-6-9-22**	Batch ID: **C88732**	RunNo: **88732**
Prep Date:	Analysis Date: **6/15/2022**	SeqNo: **3150199** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	91.2	70	130	4.90	20	
Surr: BFB	40		20.00		201	70	130	0	0	S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206602**

08-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R88822**	RunNo: **88822**
Prep Date:	Analysis Date: **6/16/2022**	SeqNo: **3153564** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	102	70	130			
Toluene	20	1.0	20.00	0	98.9	70	130			
Chlorobenzene	20	1.0	20.00	0	101	70	130			
1,1-Dichloroethene	20	1.0	20.00	0	102	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	102	70	130			
Surr: 1,2-Dichloroethane-d4	9.5		10.00		94.9	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.0	70	130			
Surr: Dibromofluoromethane	11		10.00		114	70	130			
Surr: Toluene-d8	9.1		10.00		90.6	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R88822**	RunNo: **88822**
Prep Date:	Analysis Date: **6/16/2022**	SeqNo: **3153586** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206602**

08-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R88822**	RunNo: **88822**
Prep Date:	Analysis Date: **6/16/2022**	SeqNo: **3153586** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		99.6	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		97.7	70	130			
Surr: Dibromofluoromethane	11		10.00		113	70	130			
Surr: Toluene-d8	9.5		10.00		94.8	70	130			

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **A88912**	RunNo: **88912**
Prep Date:	Analysis Date: **6/21/2022**	SeqNo: **3157839** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	9.6		10.00		96.0	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	9.6		10.00		95.6	70	130			
Surr: Toluene-d8	9.4		10.00		93.7	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **A88912**	RunNo: **88912**
Prep Date:	Analysis Date: **6/21/2022**	SeqNo: **3157862** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	1.0								
Surr: 1,2-Dichloroethane-d4	9.9		10.00		98.9	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	9.8		10.00		97.7	70	130			
Surr: Toluene-d8	10		10.00		103	70	130			

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **A88962**	RunNo: **88962**
Prep Date:	Analysis Date: **6/22/2022**	SeqNo: **3159131** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	9.1		10.00		90.6	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	9.9		10.00		99.2	70	130			
Surr: Toluene-d8	9.6		10.00		96.1	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206602**

08-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **A88962**	RunNo: **88962**
Prep Date:	Analysis Date: **6/22/2022**	SeqNo: **3159170** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methylene Chloride	ND	3.0								
Surr: 1,2-Dichloroethane-d4	9.8		10.00		97.6	70	130			
Surr: 4-Bromofluorobenzene	9.6		10.00		96.0	70	130			
Surr: Dibromofluoromethane	9.9		10.00		98.9	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206602**

08-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **mb-68135**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **68135**	RunNo: **89063**
Prep Date: **6/15/2022**	Analysis Date: **6/22/2022**	SeqNo: **3163448** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Anthracene	ND	10								
Benz(a)anthracene	ND	5.0								
Benzo(b)fluoranthene	ND	10								
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	10								
2,4-Dinitrophenol	ND	20								
Fluoranthene	ND	10								
Fluorene	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
1-Methylnaphthalene	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
Naphthalene	ND	5.0								
Phenanthrene	ND	10								
Phenol	ND	20								
Pyrene	ND	10								
Pyridine	ND	40								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	120		200.0		60.0	29.4	87.7			
Surr: Phenol-d5	94		200.0		46.9	28.5	64.7			
Surr: 2,4,6-Tribromophenol	130		200.0		64.4	18.6	129			
Surr: Nitrobenzene-d5	76		100.0		75.7	36.9	103			
Surr: 2-Fluorobiphenyl	76		100.0		76.4	38.1	99.9			
Surr: 4-Terphenyl-d14	95		100.0		94.8	48	155			

Sample ID: **lcs-68135**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **68135**	RunNo: **89063**
Prep Date: **6/15/2022**	Analysis Date: **6/22/2022**	SeqNo: **3163449** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206602**

08-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **lcs-68135**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **68135**	RunNo: **89063**
Prep Date: **6/15/2022**	Analysis Date: **6/22/2022**	SeqNo: **3163449** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	73	10	100.0	0	72.6	21.3	104			
1,4-Dichlorobenzene	65	5.0	100.0	0	64.7	15	89.8			
Phenol	95	20	200.0	0	47.3	17	61.1			
Pyrene	100	10	100.0	0	103	61	123			
Surr: 2-Fluorophenol	110		200.0		56.5	29.4	87.7			
Surr: Phenol-d5	90		200.0		44.9	28.5	64.7			
Surr: 2,4,6-Tribromophenol	150		200.0		73.2	18.6	129			
Surr: Nitrobenzene-d5	74		100.0		74.5	36.9	103			
Surr: 2-Fluorobiphenyl	71		100.0		71.0	38.1	99.9			
Surr: 4-Terphenyl-d14	110		100.0		105	48	155			

Sample ID: **lcsd-68135**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **68135**	RunNo: **89063**
Prep Date: **6/15/2022**	Analysis Date: **6/22/2022**	SeqNo: **3163450** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	76	10	100.0	0	76.2	21.3	104	4.75	45.3	
1,4-Dichlorobenzene	68	5.0	100.0	0	68.3	15	89.8	5.40	39.6	
Phenol	97	20	200.0	0	48.4	17	61.1	2.29	42.5	
Pyrene	100	10	100.0	0	102	61	123	0.461	11.8	
Surr: 2-Fluorophenol	120		200.0		57.6	29.4	87.7	0	0	
Surr: Phenol-d5	90		200.0		45.2	28.5	64.7	0	0	
Surr: 2,4,6-Tribromophenol	150		200.0		73.9	18.6	129	0	0	
Surr: Nitrobenzene-d5	75		100.0		75.2	36.9	103	0	0	
Surr: 2-Fluorobiphenyl	74		100.0		73.6	38.1	99.9	0	0	
Surr: 4-Terphenyl-d14	100		100.0		103	48	155	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206602**

08-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **mb-68135**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **68135**	RunNo: **88923**
Prep Date: **6/15/2022**	Analysis Date: **6/21/2022**	SeqNo: **3157888** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.30								
1-Methylnaphthalene	ND	0.30								
2-Methylnaphthalene	ND	0.30								
Acenaphthene	ND	0.30								
Fluorene	ND	0.30								
Phenanthrene	ND	0.30								
Anthracene	ND	0.30								
Fluoranthene	ND	0.30								
Pyrene	ND	1.0								
Benz(a)anthracene	ND	0.30								
Chrysene	ND	0.30								
Benzo(b)fluoranthene	ND	0.30								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	81		100.0		81.2	31.6	100			
Surr: 2,4,6-Tribromophenol	88		200.0		44.2	22	101			
Surr: 2-Fluorobiphenyl	76		100.0		76.5	26.7	90.1			
Surr: 4-Terphenyl-d14	120		100.0		120	72.3	147			

Sample ID: **lcs-68135 lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **68135**	RunNo: **88923**
Prep Date: **6/15/2022**	Analysis Date: **6/21/2022**	SeqNo: **3157889** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.82	0.10	2.000	0	41.0	20.2	48.4			
Naphthalene	1.3	0.30	2.000	0	66.0	21.3	79.9			
1-Methylnaphthalene	1.3	0.30	2.000	0	65.0	22.2	80.3			
2-Methylnaphthalene	1.3	0.30	2.000	0	65.0	20.6	80.1			
Acenaphthene	1.4	0.30	2.000	0	70.0	29.8	82.7			
Fluorene	1.5	0.30	2.000	0	75.0	33.3	86			
Phenanthrene	1.5	0.30	2.000	0	76.0	38.2	93.9			
Anthracene	1.7	0.30	2.000	0	83.0	41.1	95.6			
Fluoranthene	2.0	0.30	2.000	0	99.0	52.9	123			
Pyrene	1.7	1.0	2.000	0	84.0	51	113			
Benz(a)anthracene	2.1	0.30	2.000	0	105	51	147			
Chrysene	1.6	0.30	2.000	0	81.0	55.3	115			
Benzo(b)fluoranthene	1.7	0.30	2.000	0	86.0	44.4	136			
Indeno(1,2,3-cd)pyrene	1.5	0.30	2.000	0	74.0	31.4	165			
Surr: Nitrobenzene-d5	80		100.0		80.4	31.6	100			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206602**

08-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **lcs-68135 lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **68135**	RunNo: **88923**
Prep Date: **6/15/2022**	Analysis Date: **6/21/2022**	SeqNo: **3157889** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	88		200.0		44.0	22	101			
Surr: 2-Fluorobiphenyl	73		100.0		73.3	26.7	90.1			
Surr: 4-Terphenyl-d14	98		100.0		97.7	72.3	147			

Sample ID: **lcsd-68135 lf**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02**	Batch ID: **68135**	RunNo: **88923**
Prep Date: **6/15/2022**	Analysis Date: **6/21/2022**	SeqNo: **3157890** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.80	0.10	2.000	0	40.0	20.2	48.4	2.47	30.1	
Naphthalene	1.3	0.30	2.000	0	64.0	21.3	79.9	3.08	25.6	
1-Methylnaphthalene	1.3	0.30	2.000	0	64.0	22.2	80.3	1.55	25	
2-Methylnaphthalene	1.3	0.30	2.000	0	64.0	20.6	80.1	1.55	25	
Acenaphthene	1.4	0.30	2.000	0	70.0	29.8	82.7	0	27.8	
Fluorene	1.5	0.30	2.000	0	77.0	33.3	86	2.63	26.4	
Phenanthrene	1.6	0.30	2.000	0	80.0	38.2	93.9	5.13	27.9	
Anthracene	1.8	0.30	2.000	0	88.0	41.1	95.6	5.85	25.6	
Fluoranthene	2.1	0.30	2.000	0	104	52.9	123	4.93	22.8	
Pyrene	1.8	1.0	2.000	0	90.0	51	113	6.90	20	
Benz(a)anthracene	2.2	0.30	2.000	0	111	51	147	5.56	24.1	
Chrysene	1.7	0.30	2.000	0	84.0	55.3	115	3.64	20	
Benzo(b)fluoranthene	1.8	0.30	2.000	0	89.0	44.4	136	3.43	24.5	
Indeno(1,2,3-cd)pyrene	1.5	0.30	2.000	0	74.0	31.4	165	0	21.1	
Surr: Nitrobenzene-d5	79		100.0		78.6	31.6	100	0	0	
Surr: 2,4,6-Tribromophenol	89		200.0		44.5	22	101	0	0	
Surr: 2-Fluorobiphenyl	72		100.0		72.4	26.7	90.1	0	0	
Surr: 4-Terphenyl-d14	98		100.0		98.2	72.3	147	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Marathon | Work Order Number: 2206602 | RcptNo: 1

Received By: Cheyenne Cason 6/10/2022 7:20:00 AM

Completed By: Sean Livingston 6/10/2022 9:38:51 AM

Reviewed By: KPG 6.13.22

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐ JR 6/13/22.
8. Was preservative added to bottles? Yes ☐ ✓ No ☑ ~~No~~ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☑ No ☐ NA ☐
10. Were any sample containers received broken? Yes ☐ No ☑

11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: 16 (<2 or >12 unless noted)
Adjusted? yes
Checked by: JR 6/13/22

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: ____ Date: ____
By Whom: ____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: ____
Client Instructions: ____

16. Additional remarks: 0.4ml of HNO3 was added to sample 005E for pH<2.
17. Cooler Information 3.0ml of NAOH was added to samples 001F, 003F, 004F for pH<12. JR 6/13/22. JR 6/13/22

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.5	Good				
2	1.8	Good				
3	1.2	Good				
4	5.8	Good				

Released to Imaging: 4/21/2023 9:46:26 AM
Received by OCD: 4/21/2023 9:21:57 AM

Chain of Custody Record

Client: Marathon Gallup Refinery	X Standard Rush
Mailing Address: 92 Giant Crossing Road, Jamestown, NM,87347	Project Name: **2022 GW Sampling 2nd Quarter**
Phone #: 808-640-1823	Project #: **697-080-001**
Email or Fax#:	Project Manager: Lesli Alexander/Mackensie Swift
QA/QC Package: Standard ☐ Level 4 (Full Validation)	Sampler:
Accreditation: ☐ Az Compliance ☐ NELAC ☐ Other	On Ice: ☒ Yes ☐ No
EDD (Type)	# of Coolers: 4
	Cooler Temp(including CF): See Remarks

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2206602	See Analyte List	8260B: VOC	8270C: SVOC	8270C SIM: PAH, 1,4 Dioxane	8015: TPH GRO/DRO/MRO	E200.7: Metals	E200.7: Dissolved Metals	E245.1 Mercury	E504.1: EDB	E335.4: Cyanide Subbed		537.1: PFAS	SM 5201B: BOD	410.4: COD	SM9223B E. Coli
6/9	9:00		EB-6-9-22	14		001	X	X	X	X	X	X	X	X	X	X					
6/9	9:30		BW-5C	14		002	X	X	X	X	X	X	X	X	X	X					
6/9	10:30		OW-50	14		003	X	X	X	X	X	X	X	X	X	X					
6/9	10:50		OW-52	14		004	X	X	X	X	X	X	X	X	X	X					
6/9	11:15		OW-29	14		005	X	X	X	X	X	X	X	X	X	X					
6/9	11:35		OW-13	14		006	X	X	X	X	X	X	X	X	X	X					
6/9	11:35		FB-6-9-22	[illegible]		007		X	X												
6/9	—		Dup-6-9-22	14		008	X	X	X	X	X	X	X	X	X	X					
6/9	9:50		BW-5B	14		009	X	X	X	X	X	X	X	X	X	X					
			Trip Blank			010															

Date	Time	Relinquished by	Received by	Via	Date	Time
6/9	12:00	Hilario Trejo	CMC	Courier	6/10/22	0720
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

OW-50 and OW-52 NEED TO be Put in NaOH Bottles.
0.5-0=0.5 1.2-0=1.2
1.8-0=1.8 5.8-0=5.8

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

No sample provided for FB-8270
JLB 6/13/22

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

July 08, 2022

Lesli Alexander

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX (505) 632-3911

RE: 2022 GW Sampling 2nd Qtr OrderNo.: 2206781

Dear Lesli Alexander:

Hall Environmental Analysis Laboratory received 8 sample(s) on 6/15/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **2206781**
Date: **7/8/2022**

CLIENT: Marathon
Project: 2022 GW Sampling 2nd Qtr

Analytical notes Regarding EPA Method 8270:
Samples PW-3 and East LDU had poor surrogate recoveries due to the emulsive nature of the sample.

Analytical Report
Lab Order: **2206781**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-14-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/14/2022 8:00:00 AM
Lab ID: 2206781-001A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	6/23/2022 12:19:38 PM	G88994
Surr: BFB	92.0	0	70-130		%Rec	1	6/23/2022 12:19:38 PM	G88994
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	0.23	1.0		µg/L	1	6/21/2022 8:07:11 PM	A88912
Toluene	ND	0.20	1.0		µg/L	1	6/21/2022 8:07:11 PM	A88912
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/21/2022 8:07:11 PM	A88912
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	6/21/2022 8:07:11 PM	A88912
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/21/2022 8:07:11 PM	A88912
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/21/2022 8:07:11 PM	A88912
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/21/2022 8:07:11 PM	A88912
Acetone	ND	2.5	10		µg/L	1	6/21/2022 8:07:11 PM	A88912
Bromomethane	ND	0.85	3.0		µg/L	1	6/21/2022 8:07:11 PM	A88912
2-Butanone	ND	2.0	10		µg/L	1	6/21/2022 8:07:11 PM	A88912
Carbon disulfide	ND	0.59	10		µg/L	1	6/21/2022 8:07:11 PM	A88912
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/21/2022 8:07:11 PM	A88912
Chloroform	ND	0.13	1.0		µg/L	1	6/21/2022 8:07:11 PM	A88912
Chloromethane	0.67	0.41	3.0	J	µg/L	1	6/21/2022 8:07:11 PM	A88912
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/21/2022 8:07:11 PM	A88912
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/21/2022 8:07:11 PM	A88912
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/21/2022 8:07:11 PM	A88912
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/21/2022 8:07:11 PM	A88912
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/21/2022 8:07:11 PM	A88912
Methylene Chloride	0.92	0.50	3.0	J	µg/L	1	6/21/2022 8:07:11 PM	A88912
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/21/2022 8:07:11 PM	A88912
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/21/2022 8:07:11 PM	A88912
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	6/21/2022 8:07:11 PM	A88912
Styrene	ND	0.14	1.0		µg/L	1	6/21/2022 8:07:11 PM	A88912
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/21/2022 8:07:11 PM	A88912
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/21/2022 8:07:11 PM	A88912
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/21/2022 8:07:11 PM	A88912
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/21/2022 8:07:11 PM	A88912
Xylenes, Total	ND	0.37	1.5		µg/L	1	6/21/2022 8:07:11 PM	A88912
Surr: 1,2-Dichloroethane-d4	94.2	0	70-130		%Rec	1	6/21/2022 8:07:11 PM	A88912
Surr: 4-Bromofluorobenzene	99.5	0	70-130		%Rec	1	6/21/2022 8:07:11 PM	A88912
Surr: Dibromofluoromethane	92.6	0	70-130		%Rec	1	6/21/2022 8:07:11 PM	A88912
Surr: Toluene-d8	102	0	70-130		%Rec	1	6/21/2022 8:07:11 PM	A88912

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206781**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-14-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/14/2022 8:00:00 AM
Lab ID: 2206781-001B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	6/20/2022 9:46:48 PM	68189

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206781**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-14-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/14/2022 8:00:00 AM
Lab ID: 2206781-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **ED**	
Diesel Range Organics (DRO)	0.035	0.016	0.064	J	mg/L	1	6/28/2022 10:31:48 PM	68185
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	6/28/2022 10:31:48 PM	68185
Surr: DNOP	86.7	0	42.2-138		%Rec	1	6/28/2022 10:31:48 PM	68185
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	6/29/2022 1:31:10 PM	68202
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	6/29/2022 1:31:10 PM	68202
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	6/29/2022 1:31:10 PM	68202
Di-n-octyl phthalate	ND	12	20		µg/L	1	6/29/2022 1:31:10 PM	68202
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	6/29/2022 1:31:10 PM	68202
Diethyl phthalate	ND	6.0	10		µg/L	1	6/29/2022 1:31:10 PM	68202
Dimethyl phthalate	ND	6.0	10		µg/L	1	6/29/2022 1:31:10 PM	68202
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	6/29/2022 1:31:10 PM	68202
2,4-Dinitrophenol	ND	16	20		µg/L	1	6/29/2022 1:31:10 PM	68202
2-Methylphenol	ND	5.0	10		µg/L	1	6/29/2022 1:31:10 PM	68202
3+4-Methylphenol	ND	5.1	10		µg/L	1	6/29/2022 1:31:10 PM	68202
Phenol	ND	18	20		µg/L	1	6/29/2022 1:31:10 PM	68202
Pyridine	ND	14	40		µg/L	1	6/29/2022 1:31:10 PM	68202
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	6/29/2022 1:31:10 PM	68202
Surr: 2-Fluorophenol	53.9	0	29.4-87.7		%Rec	1	6/29/2022 1:31:10 PM	68202
Surr: Phenol-d5	41.0	0	28.5-64.7		%Rec	1	6/29/2022 1:31:10 PM	68202
Surr: 2,4,6-Tribromophenol	69.2	0	18.6-129		%Rec	1	6/29/2022 1:31:10 PM	68202
Surr: Nitrobenzene-d5	67.8	0	36.9-103		%Rec	1	6/29/2022 1:31:10 PM	68202
Surr: 2-Fluorobiphenyl	69.0	0	38.1-99.9		%Rec	1	6/29/2022 1:31:10 PM	68202
Surr: 4-Terphenyl-d14	84.9	0	48-155		%Rec	1	6/29/2022 1:31:10 PM	68202
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	6/28/2022 12:42:00 PM	68202
Naphthalene	ND	0.20	0.30		µg/L	1	6/28/2022 12:42:00 PM	68202
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	6/28/2022 12:42:00 PM	68202
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	6/28/2022 12:42:00 PM	68202
Acenaphthene	ND	0.14	0.30		µg/L	1	6/28/2022 12:42:00 PM	68202
Fluorene	ND	0.095	0.30		µg/L	1	6/28/2022 12:42:00 PM	68202
Phenanthrene	ND	0.16	0.30		µg/L	1	6/28/2022 12:42:00 PM	68202
Anthracene	ND	0.14	0.30		µg/L	1	6/28/2022 12:42:00 PM	68202
Fluoranthene	ND	0.14	0.30		µg/L	1	6/28/2022 12:42:00 PM	68202
Pyrene	ND	0.32	1.0		µg/L	1	6/28/2022 12:42:00 PM	68202
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	6/28/2022 12:42:00 PM	68202
Chrysene	ND	0.25	0.30		µg/L	1	6/28/2022 12:42:00 PM	68202
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	6/28/2022 12:42:00 PM	68202
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	6/28/2022 12:42:00 PM	68202

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206781**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-14-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/14/2022 8:00:00 AM
Lab ID: 2206781-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	79.6	0	31.6-100		%Rec	1	6/28/2022 12:42:00 PM	68202
Surr: 2-Fluorobiphenyl	77.0	0	26.7-90.1		%Rec	1	6/28/2022 12:42:00 PM	68202
Surr: 4-Terphenyl-d14	108	0	72.3-147		%Rec	1	6/28/2022 12:42:00 PM	68202

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206781**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-14-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/14/2022 8:00:00 AM
Lab ID: 2206781-001D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	ND	0.0016	0.0030		mg/L	1	6/20/2022 2:32:43 PM	68172
Beryllium	ND	0.00088	0.0020		mg/L	1	6/20/2022 2:32:43 PM	68172
Cadmium	ND	0.0018	0.0020		mg/L	1	6/20/2022 2:32:43 PM	68172
Chromium	ND	0.0020	0.0060		mg/L	1	6/20/2022 2:32:43 PM	68172
Cobalt	ND	0.0035	0.0060		mg/L	1	6/20/2022 2:32:43 PM	68172
Nickel	ND	0.0053	0.010		mg/L	1	6/20/2022 2:32:43 PM	68172
Silver	ND	0.0018	0.0050		mg/L	1	6/20/2022 2:32:43 PM	68172
Vanadium	ND	0.0035	0.050		mg/L	1	6/20/2022 2:32:43 PM	68172
Zinc	ND	0.0039	0.010		mg/L	1	6/20/2022 2:32:43 PM	68172
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/20/2022 1:57:48 PM	68172
Arsenic	ND	0.00013	0.0010		mg/L	1	6/20/2022 1:57:48 PM	68172
Lead	ND	0.000061	0.00050		mg/L	1	6/20/2022 1:57:48 PM	68172
Selenium	ND	0.00037	0.0010		mg/L	1	6/20/2022 1:57:48 PM	68172
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/17/2022 1:40:17 PM	68186

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206781**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-14-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/14/2022 8:00:00 AM
Lab ID: 2206781-001E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	ND	0.0011	0.0020		mg/L	1	6/15/2022 7:23:30 PM	B88784
Beryllium	ND	0.00088	0.0020		mg/L	1	6/15/2022 7:23:30 PM	B88784
Cadmium	ND	0.00098	0.0020		mg/L	1	6/15/2022 7:23:30 PM	B88784
Chromium	ND	0.0020	0.0060		mg/L	1	6/15/2022 7:23:30 PM	B88784
Cobalt	ND	0.0024	0.0060		mg/L	1	6/15/2022 7:23:30 PM	B88784
Nickel	ND	0.0033	0.010		mg/L	1	6/15/2022 7:23:30 PM	B88784
Silver	ND	0.0013	0.0050		mg/L	1	6/15/2022 7:23:30 PM	B88784
Vanadium	ND	0.0017	0.050		mg/L	1	6/15/2022 7:23:30 PM	B88784
Zinc	0.0058	0.0032	0.010	J	mg/L	1	6/15/2022 7:23:30 PM	B88784
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/21/2022 11:09:58 AM	B88918
Arsenic	ND	0.00012	0.0010		mg/L	1	6/21/2022 11:09:58 AM	B88918
Lead	ND	0.000057	0.00050		mg/L	1	6/21/2022 11:09:58 AM	B88918
Selenium	ND	0.00034	0.0010		mg/L	1	6/21/2022 11:09:58 AM	B88918
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/17/2022 1:42:24 PM	68186

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206781**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-3
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/14/2022 8:30:00 AM
Lab ID: 2206781-002A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	6/23/2022 12:43:22 PM	G88994
Surr: BFB	96.4	0	70-130		%Rec	1	6/23/2022 12:43:22 PM	G88994
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	0.23	1.0		µg/L	1	6/21/2022 8:34:11 PM	A88912
Toluene	ND	0.20	1.0		µg/L	1	6/21/2022 8:34:11 PM	A88912
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/21/2022 8:34:11 PM	A88912
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	6/21/2022 8:34:11 PM	A88912
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/21/2022 8:34:11 PM	A88912
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/21/2022 8:34:11 PM	A88912
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/21/2022 8:34:11 PM	A88912
Acetone	ND	2.5	10		µg/L	1	6/21/2022 8:34:11 PM	A88912
Bromomethane	ND	0.85	3.0		µg/L	1	6/21/2022 8:34:11 PM	A88912
2-Butanone	ND	2.0	10		µg/L	1	6/21/2022 8:34:11 PM	A88912
Carbon disulfide	ND	0.59	10		µg/L	1	6/21/2022 8:34:11 PM	A88912
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/21/2022 8:34:11 PM	A88912
Chloroform	ND	0.13	1.0		µg/L	1	6/21/2022 8:34:11 PM	A88912
Chloromethane	ND	0.41	3.0		µg/L	1	6/21/2022 8:34:11 PM	A88912
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/21/2022 8:34:11 PM	A88912
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/21/2022 8:34:11 PM	A88912
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/21/2022 8:34:11 PM	A88912
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/21/2022 8:34:11 PM	A88912
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/21/2022 8:34:11 PM	A88912
Methylene Chloride	2.1	0.50	3.0	J	µg/L	1	6/21/2022 8:34:11 PM	A88912
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/21/2022 8:34:11 PM	A88912
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/21/2022 8:34:11 PM	A88912
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	6/21/2022 8:34:11 PM	A88912
Styrene	ND	0.14	1.0		µg/L	1	6/21/2022 8:34:11 PM	A88912
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/21/2022 8:34:11 PM	A88912
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/21/2022 8:34:11 PM	A88912
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/21/2022 8:34:11 PM	A88912
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/21/2022 8:34:11 PM	A88912
Xylenes, Total	ND	0.37	1.5		µg/L	1	6/21/2022 8:34:11 PM	A88912
Surr: 1,2-Dichloroethane-d4	93.6	0	70-130		%Rec	1	6/21/2022 8:34:11 PM	A88912
Surr: 4-Bromofluorobenzene	108	0	70-130		%Rec	1	6/21/2022 8:34:11 PM	A88912
Surr: Dibromofluoromethane	94.6	0	70-130		%Rec	1	6/21/2022 8:34:11 PM	A88912
Surr: Toluene-d8	102	0	70-130		%Rec	1	6/21/2022 8:34:11 PM	A88912

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206781**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-3
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/14/2022 8:30:00 AM
Lab ID: 2206781-002B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	6/21/2022 3:31:26 PM	68189

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206781**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-3
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/14/2022 8:30:00 AM
Lab ID: 2206781-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **ED**	
Diesel Range Organics (DRO)	0.036	0.016	0.064	J	mg/L	1	6/28/2022 10:55:37 PM	68185
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	6/28/2022 10:55:37 PM	68185
Surr: DNOP	92.2	0	42.2-138		%Rec	1	6/28/2022 10:55:37 PM	68185
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	6/29/2022 2:13:11 PM	68202
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	6/29/2022 2:13:11 PM	68202
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	6/29/2022 2:13:11 PM	68202
Di-n-octyl phthalate	ND	12	20		µg/L	1	6/29/2022 2:13:11 PM	68202
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	6/29/2022 2:13:11 PM	68202
Diethyl phthalate	ND	6.0	10		µg/L	1	6/29/2022 2:13:11 PM	68202
Dimethyl phthalate	ND	6.0	10		µg/L	1	6/29/2022 2:13:11 PM	68202
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	6/29/2022 2:13:11 PM	68202
2,4-Dinitrophenol	ND	16	20		µg/L	1	6/29/2022 2:13:11 PM	68202
2-Methylphenol	ND	5.0	10		µg/L	1	6/29/2022 2:13:11 PM	68202
3+4-Methylphenol	ND	5.1	10		µg/L	1	6/29/2022 2:13:11 PM	68202
Phenol	ND	18	20		µg/L	1	6/29/2022 2:13:11 PM	68202
Pyridine	ND	14	40		µg/L	1	6/29/2022 2:13:11 PM	68202
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	6/29/2022 2:13:11 PM	68202
Surr: 2-Fluorophenol	24.0	0	29.4-87.7	S	%Rec	1	6/29/2022 2:13:11 PM	68202
Surr: Phenol-d5	18.0	0	28.5-64.7	S	%Rec	1	6/29/2022 2:13:11 PM	68202
Surr: 2,4,6-Tribromophenol	31.7	0	18.6-129		%Rec	1	6/29/2022 2:13:11 PM	68202
Surr: Nitrobenzene-d5	29.8	0	36.9-103	S	%Rec	1	6/29/2022 2:13:11 PM	68202
Surr: 2-Fluorobiphenyl	30.2	0	38.1-99.9	S	%Rec	1	6/29/2022 2:13:11 PM	68202
Surr: 4-Terphenyl-d14	49.4	0	48-155		%Rec	1	6/29/2022 2:13:11 PM	68202
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	6/28/2022 1:26:00 PM	68202
Naphthalene	ND	0.20	0.30		µg/L	1	6/28/2022 1:26:00 PM	68202
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	6/28/2022 1:26:00 PM	68202
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	6/28/2022 1:26:00 PM	68202
Acenaphthene	ND	0.14	0.30		µg/L	1	6/28/2022 1:26:00 PM	68202
Fluorene	ND	0.095	0.30		µg/L	1	6/28/2022 1:26:00 PM	68202
Phenanthrene	ND	0.16	0.30		µg/L	1	6/28/2022 1:26:00 PM	68202
Anthracene	ND	0.14	0.30		µg/L	1	6/28/2022 1:26:00 PM	68202
Fluoranthene	ND	0.14	0.30		µg/L	1	6/28/2022 1:26:00 PM	68202
Pyrene	ND	0.32	1.0		µg/L	1	6/28/2022 1:26:00 PM	68202
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	6/28/2022 1:26:00 PM	68202
Chrysene	ND	0.25	0.30		µg/L	1	6/28/2022 1:26:00 PM	68202
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	6/28/2022 1:26:00 PM	68202
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	6/28/2022 1:26:00 PM	68202

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206781**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-3
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/14/2022 8:30:00 AM
Lab ID: 2206781-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	36.8	0	31.6-100		%Rec	1	6/28/2022 1:26:00 PM	68202
Surr: 2-Fluorobiphenyl	36.3	0	26.7-90.1		%Rec	1	6/28/2022 1:26:00 PM	68202
Surr: 4-Terphenyl-d14	73.5	0	72.3-147		%Rec	1	6/28/2022 1:26:00 PM	68202

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206781**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-3
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/14/2022 8:30:00 AM
Lab ID: 2206781-002D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	0.012	0.0016	0.0030		mg/L	1	6/20/2022 2:34:19 PM	68172
Beryllium	ND	0.00088	0.0020		mg/L	1	6/20/2022 2:34:19 PM	68172
Cadmium	ND	0.0018	0.0020		mg/L	1	6/20/2022 2:34:19 PM	68172
Chromium	ND	0.0020	0.0060		mg/L	1	6/20/2022 2:34:19 PM	68172
Cobalt	0.0036	0.0035	0.0060	J	mg/L	1	6/20/2022 2:34:19 PM	68172
Nickel	ND	0.0053	0.010		mg/L	1	6/20/2022 2:34:19 PM	68172
Silver	ND	0.0018	0.0050		mg/L	1	6/20/2022 2:34:19 PM	68172
Vanadium	ND	0.0035	0.050		mg/L	1	6/20/2022 2:34:19 PM	68172
Zinc	0.016	0.0039	0.010		mg/L	1	6/20/2022 2:34:19 PM	68172
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/20/2022 2:00:14 PM	68172
Arsenic	0.0040	0.00013	0.0010		mg/L	1	6/20/2022 6:25:51 PM	68172
Lead	0.00021	0.000061	0.00050	J	mg/L	1	6/20/2022 2:00:14 PM	68172
Selenium	0.0013	0.00037	0.0010		mg/L	1	6/20/2022 6:25:51 PM	68172
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/17/2022 1:44:31 PM	68186

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206781**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-3
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/14/2022 8:30:00 AM
Lab ID: 2206781-002E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.011	0.0011	0.0020		mg/L	1	6/15/2022 9:30:07 PM	B88784
Beryllium	ND	0.00088	0.0020		mg/L	1	6/15/2022 9:30:07 PM	B88784
Cadmium	ND	0.00098	0.0020		mg/L	1	6/15/2022 9:30:07 PM	B88784
Chromium	ND	0.0020	0.0060		mg/L	1	6/15/2022 9:30:07 PM	B88784
Cobalt	ND	0.0024	0.0060		mg/L	1	6/15/2022 9:30:07 PM	B88784
Nickel	ND	0.0033	0.010		mg/L	1	6/15/2022 9:30:07 PM	B88784
Silver	0.0058	0.0013	0.0050		mg/L	1	6/20/2022 5:42:05 PM	B88897
Vanadium	0.0019	0.0017	0.050	J	mg/L	1	6/15/2022 9:30:07 PM	B88784
Zinc	0.011	0.0032	0.010		mg/L	1	6/15/2022 9:30:07 PM	B88784
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/21/2022 11:18:04 AM	B88918
Arsenic	0.0036	0.00012	0.0010		mg/L	1	6/21/2022 11:18:04 AM	B88918
Lead	ND	0.000057	0.00050		mg/L	1	6/21/2022 11:18:04 AM	B88918
Selenium	0.0011	0.00034	0.0010		mg/L	1	6/21/2022 11:18:04 AM	B88918
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/17/2022 1:46:39 PM	68186

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206781**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-4
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/14/2022 9:00:00 AM
Lab ID: 2206781-003A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	6/23/2022 2:18:14 PM	G88994
Surr: BFB	95.8	0	70-130		%Rec	1	6/23/2022 2:18:14 PM	G88994
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	0.23	1.0		µg/L	1	6/22/2022 2:52:09 AM	A88912
Toluene	ND	0.20	1.0		µg/L	1	6/22/2022 2:52:09 AM	A88912
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/22/2022 2:52:09 AM	A88912
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	6/22/2022 2:52:09 AM	A88912
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/22/2022 2:52:09 AM	A88912
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/22/2022 2:52:09 AM	A88912
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/22/2022 2:52:09 AM	A88912
Acetone	ND	2.5	10		µg/L	1	6/22/2022 2:52:09 AM	A88912
Bromomethane	ND	0.85	3.0		µg/L	1	6/22/2022 2:52:09 AM	A88912
2-Butanone	ND	2.0	10		µg/L	1	6/22/2022 2:52:09 AM	A88912
Carbon disulfide	ND	0.59	10		µg/L	1	6/22/2022 2:52:09 AM	A88912
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/22/2022 2:52:09 AM	A88912
Chloroform	ND	0.13	1.0		µg/L	1	6/22/2022 2:52:09 AM	A88912
Chloromethane	ND	0.41	3.0		µg/L	1	6/22/2022 2:52:09 AM	A88912
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/22/2022 2:52:09 AM	A88912
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/22/2022 2:52:09 AM	A88912
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/22/2022 2:52:09 AM	A88912
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/22/2022 2:52:09 AM	A88912
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/22/2022 2:52:09 AM	A88912
Methylene Chloride	1.6	0.50	3.0	J	µg/L	1	6/22/2022 2:52:09 AM	A88912
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/22/2022 2:52:09 AM	A88912
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/22/2022 2:52:09 AM	A88912
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	6/22/2022 2:52:09 AM	A88912
Styrene	ND	0.14	1.0		µg/L	1	6/22/2022 2:52:09 AM	A88912
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/22/2022 2:52:09 AM	A88912
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/22/2022 2:52:09 AM	A88912
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/22/2022 2:52:09 AM	A88912
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/22/2022 2:52:09 AM	A88912
Xylenes, Total	ND	0.37	1.5		µg/L	1	6/22/2022 2:52:09 AM	A88912
Surr: 1,2-Dichloroethane-d4	96.3	0	70-130		%Rec	1	6/22/2022 2:52:09 AM	A88912
Surr: 4-Bromofluorobenzene	105	0	70-130		%Rec	1	6/22/2022 2:52:09 AM	A88912
Surr: Dibromofluoromethane	97.9	0	70-130		%Rec	1	6/22/2022 2:52:09 AM	A88912
Surr: Toluene-d8	99.9	0	70-130		%Rec	1	6/22/2022 2:52:09 AM	A88912

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206781**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-4
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/14/2022 9:00:00 AM
Lab ID: 2206781-003B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	6/21/2022 4:01:40 PM	68189

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206781**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-4
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/14/2022 9:00:00 AM
Lab ID: 2206781-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **ED**	
Diesel Range Organics (DRO)	ND	0.016	0.064		mg/L	1	6/28/2022 11:19:24 PM	68185
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	6/28/2022 11:19:24 PM	68185
Surr: DNOP	66.8	0	42.2-138		%Rec	1	6/28/2022 11:19:24 PM	68185
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	6/29/2022 2:56:09 PM	68202
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	6/29/2022 2:56:09 PM	68202
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	6/29/2022 2:56:09 PM	68202
Di-n-octyl phthalate	ND	12	20		µg/L	1	6/29/2022 2:56:09 PM	68202
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	6/29/2022 2:56:09 PM	68202
Diethyl phthalate	ND	6.0	10		µg/L	1	6/29/2022 2:56:09 PM	68202
Dimethyl phthalate	ND	6.0	10		µg/L	1	6/29/2022 2:56:09 PM	68202
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	6/29/2022 2:56:09 PM	68202
2,4-Dinitrophenol	ND	16	20		µg/L	1	6/29/2022 2:56:09 PM	68202
2-Methylphenol	ND	5.0	10		µg/L	1	6/29/2022 2:56:09 PM	68202
3+4-Methylphenol	ND	5.1	10		µg/L	1	6/29/2022 2:56:09 PM	68202
Phenol	ND	18	20		µg/L	1	6/29/2022 2:56:09 PM	68202
Pyridine	ND	14	40		µg/L	1	6/29/2022 2:56:09 PM	68202
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	6/29/2022 2:56:09 PM	68202
Surr: 2-Fluorophenol	49.4	0	29.4-87.7		%Rec	1	6/29/2022 2:56:09 PM	68202
Surr: Phenol-d5	37.0	0	28.5-64.7		%Rec	1	6/29/2022 2:56:09 PM	68202
Surr: 2,4,6-Tribromophenol	70.3	0	18.6-129		%Rec	1	6/29/2022 2:56:09 PM	68202
Surr: Nitrobenzene-d5	59.3	0	36.9-103		%Rec	1	6/29/2022 2:56:09 PM	68202
Surr: 2-Fluorobiphenyl	62.8	0	38.1-99.9		%Rec	1	6/29/2022 2:56:09 PM	68202
Surr: 4-Terphenyl-d14	86.2	0	48-155		%Rec	1	6/29/2022 2:56:09 PM	68202
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	6/28/2022 2:10:00 PM	68202
Naphthalene	ND	0.20	0.30		µg/L	1	6/28/2022 2:10:00 PM	68202
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	6/28/2022 2:10:00 PM	68202
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	6/28/2022 2:10:00 PM	68202
Acenaphthene	ND	0.14	0.30		µg/L	1	6/28/2022 2:10:00 PM	68202
Fluorene	ND	0.095	0.30		µg/L	1	6/28/2022 2:10:00 PM	68202
Phenanthrene	ND	0.16	0.30		µg/L	1	6/28/2022 2:10:00 PM	68202
Anthracene	ND	0.14	0.30		µg/L	1	6/28/2022 2:10:00 PM	68202
Fluoranthene	ND	0.14	0.30		µg/L	1	6/28/2022 2:10:00 PM	68202
Pyrene	ND	0.32	1.0		µg/L	1	6/28/2022 2:10:00 PM	68202
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	6/28/2022 2:10:00 PM	68202
Chrysene	ND	0.25	0.30		µg/L	1	6/28/2022 2:10:00 PM	68202
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	6/28/2022 2:10:00 PM	68202
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	6/28/2022 2:10:00 PM	68202

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206781**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-4
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/14/2022 9:00:00 AM
Lab ID: 2206781-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	70.6	0	31.6-100		%Rec	1	6/28/2022 2:10:00 PM	68202
Surr: 2-Fluorobiphenyl	69.9	0	26.7-90.1		%Rec	1	6/28/2022 2:10:00 PM	68202
Surr: 4-Terphenyl-d14	109	0	72.3-147		%Rec	1	6/28/2022 2:10:00 PM	68202

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206781**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-4
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/14/2022 9:00:00 AM
Lab ID: 2206781-003D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	0.014	0.0016	0.0030		mg/L	1	6/20/2022 2:35:57 PM	68172
Beryllium	ND	0.00088	0.0020		mg/L	1	6/20/2022 2:35:57 PM	68172
Cadmium	ND	0.0018	0.0020		mg/L	1	6/20/2022 2:35:57 PM	68172
Chromium	ND	0.0020	0.0060		mg/L	1	6/20/2022 2:35:57 PM	68172
Cobalt	0.0036	0.0035	0.0060	J	mg/L	1	6/20/2022 2:35:57 PM	68172
Nickel	ND	0.0053	0.010		mg/L	1	6/20/2022 2:35:57 PM	68172
Silver	ND	0.0018	0.0050		mg/L	1	6/20/2022 2:35:57 PM	68172
Vanadium	ND	0.0035	0.050		mg/L	1	6/20/2022 2:35:57 PM	68172
Zinc	ND	0.0039	0.010		mg/L	1	6/20/2022 2:35:57 PM	68172
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/20/2022 2:02:40 PM	68172
Arsenic	0.0029	0.00063	0.0050	J	mg/L	5	6/22/2022 12:42:25 PM	68172
Lead	ND	0.000061	0.00050		mg/L	1	6/20/2022 2:02:40 PM	68172
Selenium	ND	0.0019	0.0050		mg/L	5	6/22/2022 12:42:25 PM	68172
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/17/2022 2:41:05 PM	68186

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206781**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-4
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/14/2022 9:00:00 AM
Lab ID: 2206781-003E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.013	0.0011	0.0020		mg/L	1	6/15/2022 9:35:04 PM	B88784
Beryllium	ND	0.00088	0.0020		mg/L	1	6/15/2022 9:35:04 PM	B88784
Cadmium	ND	0.00098	0.0020		mg/L	1	6/15/2022 9:35:04 PM	B88784
Chromium	ND	0.0020	0.0060		mg/L	1	6/15/2022 9:35:04 PM	B88784
Cobalt	ND	0.0024	0.0060		mg/L	1	6/15/2022 9:35:04 PM	B88784
Nickel	ND	0.0033	0.010		mg/L	1	6/15/2022 9:35:04 PM	B88784
Silver	0.0050	0.0013	0.0050		mg/L	1	6/20/2022 5:44:29 PM	B88897
Vanadium	ND	0.0017	0.050		mg/L	1	6/15/2022 9:35:04 PM	B88784
Zinc	0.0096	0.0032	0.010	J	mg/L	1	6/15/2022 9:35:04 PM	B88784
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/21/2022 11:23:27 AM	B88918
Arsenic	0.0029	0.00012	0.0010		mg/L	1	6/21/2022 11:23:27 AM	B88918
Lead	ND	0.000057	0.00050		mg/L	1	6/21/2022 11:23:27 AM	B88918
Selenium	0.00070	0.00034	0.0010	J	mg/L	1	6/21/2022 11:23:27 AM	B88918
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/17/2022 2:43:13 PM	68186

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206781**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: East LDU
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/14/2022 9:40:00 AM
Lab ID: 2206781-004A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	0.41	0.0090	0.050		mg/L	1	6/23/2022 2:42:06 PM	G88994
Surr: BFB	213	0	70-130	S	%Rec	1	6/23/2022 2:42:06 PM	G88994
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	25	0.23	1.0		µg/L	1	6/22/2022 12:03:26 PM	A88962
Toluene	1.7	0.20	1.0		µg/L	1	6/22/2022 12:03:26 PM	A88962
Ethylbenzene	20	0.21	1.0		µg/L	1	6/22/2022 12:03:26 PM	A88962
Methyl tert-butyl ether (MTBE)	1.5	0.39	1.0		µg/L	1	6/22/2022 12:03:26 PM	A88962
1,2,4-Trimethylbenzene	10	0.12	1.0		µg/L	1	6/22/2022 12:03:26 PM	A88962
1,3,5-Trimethylbenzene	8.4	0.18	1.0		µg/L	1	6/22/2022 12:03:26 PM	A88962
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/22/2022 12:03:26 PM	A88962
Acetone	ND	2.5	10		µg/L	1	6/22/2022 12:03:26 PM	A88962
Bromomethane	ND	0.85	3.0		µg/L	1	6/22/2022 12:03:26 PM	A88962
2-Butanone	ND	2.0	10		µg/L	1	6/22/2022 12:03:26 PM	A88962
Carbon disulfide	ND	0.59	10		µg/L	1	6/22/2022 12:03:26 PM	A88962
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/22/2022 12:03:26 PM	A88962
Chloroform	0.24	0.13	1.0	J	µg/L	1	6/22/2022 12:03:26 PM	A88962
Chloromethane	0.94	0.41	3.0	J	µg/L	1	6/22/2022 12:03:26 PM	A88962
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/22/2022 12:03:26 PM	A88962
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/22/2022 12:03:26 PM	A88962
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/22/2022 12:03:26 PM	A88962
Isopropylbenzene	4.3	0.18	1.0		µg/L	1	6/22/2022 12:03:26 PM	A88962
4-Isopropyltoluene	1.3	0.20	1.0		µg/L	1	6/22/2022 12:03:26 PM	A88962
Methylene Chloride	27	0.50	3.0		µg/L	1	6/22/2022 12:03:26 PM	A88962
n-Butylbenzene	0.87	0.25	3.0	J	µg/L	1	6/22/2022 12:03:26 PM	A88962
n-Propylbenzene	4.5	0.18	1.0		µg/L	1	6/22/2022 12:03:26 PM	A88962
sec-Butylbenzene	2.2	0.14	1.0		µg/L	1	6/22/2022 12:03:26 PM	A88962
Styrene	ND	0.14	1.0		µg/L	1	6/22/2022 12:03:26 PM	A88962
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/22/2022 12:03:26 PM	A88962
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/22/2022 12:03:26 PM	A88962
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/22/2022 12:03:26 PM	A88962
Vinyl chloride	0.52	0.32	1.0	J	µg/L	1	6/22/2022 12:03:26 PM	A88962
Xylenes, Total	14	0.37	1.5		µg/L	1	6/22/2022 12:03:26 PM	A88962
Surr: 1,2-Dichloroethane-d4	99.4	0	70-130		%Rec	1	6/22/2022 12:03:26 PM	A88962
Surr: 4-Bromofluorobenzene	99.9	0	70-130		%Rec	1	6/22/2022 12:03:26 PM	A88962
Surr: Dibromofluoromethane	95.7	0	70-130		%Rec	1	6/22/2022 12:03:26 PM	A88962
Surr: Toluene-d8	96.1	0	70-130		%Rec	1	6/22/2022 12:03:26 PM	A88962

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206781**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: East LDU
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/14/2022 9:40:00 AM
Lab ID: 2206781-004B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	6/20/2022 11:17:55 PM	68189

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206781**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: East LDU
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/14/2022 9:40:00 AM
Lab ID: 2206781-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **ED**	
Diesel Range Organics (DRO)	3.6	0.016	0.064		mg/L	1	6/28/2022 11:43:07 PM	68185
Motor Oil Range Organics (MRO)	0.061	0.052	0.080	J	mg/L	1	6/28/2022 11:43:07 PM	68185
Surr: DNOP	83.4	0	42.2-138		%Rec	1	6/28/2022 11:43:07 PM	68185
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	6/29/2022 3:38:23 PM	68202
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	6/29/2022 3:38:23 PM	68202
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	6/29/2022 3:38:23 PM	68202
Di-n-octyl phthalate	ND	12	20		µg/L	1	6/29/2022 3:38:23 PM	68202
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	6/29/2022 3:38:23 PM	68202
Diethyl phthalate	ND	6.0	10		µg/L	1	6/29/2022 3:38:23 PM	68202
Dimethyl phthalate	ND	6.0	10		µg/L	1	6/29/2022 3:38:23 PM	68202
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	6/29/2022 3:38:23 PM	68202
2,4-Dinitrophenol	ND	16	20		µg/L	1	6/29/2022 3:38:23 PM	68202
2-Methylphenol	ND	5.0	10		µg/L	1	6/29/2022 3:38:23 PM	68202
3+4-Methylphenol	ND	5.1	10		µg/L	1	6/29/2022 3:38:23 PM	68202
Phenol	ND	18	20		µg/L	1	6/29/2022 3:38:23 PM	68202
Pyridine	ND	14	40		µg/L	1	6/29/2022 3:38:23 PM	68202
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	6/29/2022 3:38:23 PM	68202
Surr: 2-Fluorophenol	1.79	0	29.4-87.7	S	%Rec	1	6/29/2022 3:38:23 PM	68202
Surr: Phenol-d5	10.9	0	28.5-64.7	S	%Rec	1	6/29/2022 3:38:23 PM	68202
Surr: 2,4,6-Tribromophenol	10.7	0	18.6-129	S	%Rec	1	6/29/2022 3:38:23 PM	68202
Surr: Nitrobenzene-d5	33.5	0	36.9-103	S	%Rec	1	6/29/2022 3:38:23 PM	68202
Surr: 2-Fluorobiphenyl	40.4	0	38.1-99.9		%Rec	1	6/29/2022 3:38:23 PM	68202
Surr: 4-Terphenyl-d14	55.1	0	48-155		%Rec	1	6/29/2022 3:38:23 PM	68202
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	0.40	0.11	1.0	J	µg/L	1	6/28/2022 2:54:00 PM	68202
Naphthalene	ND	0.20	0.30		µg/L	1	6/28/2022 2:54:00 PM	68202
1-Methylnaphthalene	0.48	0.15	0.30		µg/L	1	6/28/2022 2:54:00 PM	68202
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	6/28/2022 2:54:00 PM	68202
Acenaphthene	0.64	0.14	0.30		µg/L	1	6/28/2022 2:54:00 PM	68202
Fluorene	1.2	0.095	0.30		µg/L	1	6/28/2022 2:54:00 PM	68202
Phenanthrene	2.2	0.16	0.30		µg/L	1	6/28/2022 2:54:00 PM	68202
Anthracene	0.46	0.14	0.30		µg/L	1	6/28/2022 2:54:00 PM	68202
Fluoranthene	0.68	0.14	0.30		µg/L	1	6/28/2022 2:54:00 PM	68202
Pyrene	ND	0.32	1.0		µg/L	1	6/28/2022 2:54:00 PM	68202
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	6/28/2022 2:54:00 PM	68202
Chrysene	ND	0.25	0.30		µg/L	1	6/28/2022 2:54:00 PM	68202
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	6/28/2022 2:54:00 PM	68202
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	6/28/2022 2:54:00 PM	68202

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206781**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: East LDU
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/14/2022 9:40:00 AM
Lab ID: 2206781-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	40.0	0	31.6-100		%Rec	1	6/28/2022 2:54:00 PM	68202
Surr: 2-Fluorobiphenyl	37.5	0	26.7-90.1		%Rec	1	6/28/2022 2:54:00 PM	68202
Surr: 4-Terphenyl-d14	56.9	0	72.3-147	S	%Rec	1	6/28/2022 2:54:00 PM	68202

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206781**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: East LDU
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/14/2022 9:40:00 AM
Lab ID: 2206781-004D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	0.14	0.0016	0.0030		mg/L	1	6/20/2022 2:37:34 PM	68172
Beryllium	0.0045	0.00088	0.0020	*	mg/L	1	6/20/2022 2:37:34 PM	68172
Cadmium	ND	0.0018	0.0020		mg/L	1	6/20/2022 2:37:34 PM	68172
Chromium	5.3	0.020	0.060	*	mg/L	10	6/23/2022 4:29:11 PM	68172
Cobalt	0.021	0.0035	0.0060		mg/L	1	6/20/2022 2:37:34 PM	68172
Nickel	3.3	0.053	0.10	*	mg/L	10	6/23/2022 4:29:11 PM	68172
Silver	ND	0.0018	0.0050		mg/L	1	6/20/2022 2:37:34 PM	68172
Vanadium	0.12	0.0035	0.050		mg/L	1	6/20/2022 2:37:34 PM	68172
Zinc	ND	0.0039	0.010		mg/L	1	6/20/2022 2:37:34 PM	68172
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	6/20/2022 6:08:42 PM	68172
Arsenic	0.0013	0.00063	0.0050	J	mg/L	5	6/20/2022 6:08:42 PM	68172
Lead	0.00048	0.00031	0.0025	J	mg/L	5	6/20/2022 6:08:42 PM	68172
Selenium	ND	0.0019	0.0050		mg/L	5	6/20/2022 6:08:42 PM	68172
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/17/2022 2:45:21 PM	68186

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206781**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: East LDU
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/14/2022 9:40:00 AM
Lab ID: 2206781-004E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.053	0.0011	0.0020		mg/L	1	6/15/2022 9:49:01 PM	B88784
Beryllium	0.0045	0.00088	0.0020	*	mg/L	1	6/15/2022 9:49:01 PM	B88784
Cadmium	ND	0.00098	0.0020		mg/L	1	6/15/2022 9:49:01 PM	B88784
Chromium	2.9	0.0098	0.030	*	mg/L	5	6/15/2022 9:51:18 PM	B88784
Cobalt	0.014	0.0024	0.0060		mg/L	1	6/15/2022 9:49:01 PM	B88784
Nickel	3.3	0.016	0.050	*	mg/L	5	6/15/2022 9:51:18 PM	B88784
Silver	ND	0.0013	0.0050		mg/L	1	6/15/2022 9:49:01 PM	B88784
Vanadium	0.018	0.0017	0.050	J	mg/L	1	6/15/2022 9:49:01 PM	B88784
Zinc	0.12	0.0032	0.010		mg/L	1	6/15/2022 9:49:01 PM	B88784
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/21/2022 11:26:08 AM	B88918
Arsenic	0.00098	0.00061	0.0050	J	mg/L	5	6/21/2022 1:05:42 PM	B88918
Lead	ND	0.00028	0.0025		mg/L	5	6/21/2022 1:05:42 PM	B88918
Selenium	ND	0.0017	0.0050		mg/L	5	6/21/2022 1:05:42 PM	B88918
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/17/2022 2:47:31 PM	68186

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206781**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: West LDU
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/14/2022 10:15:00 AM
Lab ID: 2206781-005A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	0.050	0.0090	0.050	J	mg/L	1	6/23/2022 3:05:56 PM	G88994
Surr: BFB	106	0	70-130		%Rec	1	6/23/2022 3:05:56 PM	G88994
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	0.43	0.23	1.0	J	µg/L	1	6/22/2022 3:46:05 AM	A88912
Toluene	ND	0.20	1.0		µg/L	1	6/22/2022 3:46:05 AM	A88912
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/22/2022 3:46:05 AM	A88912
Methyl tert-butyl ether (MTBE)	2.2	0.39	1.0		µg/L	1	6/22/2022 3:46:05 AM	A88912
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/22/2022 3:46:05 AM	A88912
1,3,5-Trimethylbenzene	0.18	0.18	1.0	J	µg/L	1	6/22/2022 3:46:05 AM	A88912
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/22/2022 3:46:05 AM	A88912
Acetone	8.5	2.5	10	J	µg/L	1	6/22/2022 3:46:05 AM	A88912
Bromomethane	ND	0.85	3.0		µg/L	1	6/22/2022 3:46:05 AM	A88912
2-Butanone	ND	2.0	10		µg/L	1	6/22/2022 3:46:05 AM	A88912
Carbon disulfide	ND	0.59	10		µg/L	1	6/22/2022 3:46:05 AM	A88912
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/22/2022 3:46:05 AM	A88912
Chloroform	ND	0.13	1.0		µg/L	1	6/22/2022 3:46:05 AM	A88912
Chloromethane	ND	0.41	3.0		µg/L	1	6/22/2022 3:46:05 AM	A88912
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/22/2022 3:46:05 AM	A88912
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/22/2022 3:46:05 AM	A88912
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/22/2022 3:46:05 AM	A88912
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/22/2022 3:46:05 AM	A88912
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/22/2022 3:46:05 AM	A88912
Methylene Chloride	15	0.50	3.0		µg/L	1	6/22/2022 3:46:05 AM	A88912
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/22/2022 3:46:05 AM	A88912
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/22/2022 3:46:05 AM	A88912
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	6/22/2022 3:46:05 AM	A88912
Styrene	ND	0.14	1.0		µg/L	1	6/22/2022 3:46:05 AM	A88912
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/22/2022 3:46:05 AM	A88912
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/22/2022 3:46:05 AM	A88912
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/22/2022 3:46:05 AM	A88912
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/22/2022 3:46:05 AM	A88912
Xylenes, Total	ND	0.37	1.5		µg/L	1	6/22/2022 3:46:05 AM	A88912
Surr: 1,2-Dichloroethane-d4	93.7	0	70-130		%Rec	1	6/22/2022 3:46:05 AM	A88912
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	6/22/2022 3:46:05 AM	A88912
Surr: Dibromofluoromethane	93.5	0	70-130		%Rec	1	6/22/2022 3:46:05 AM	A88912
Surr: Toluene-d8	96.5	0	70-130		%Rec	1	6/22/2022 3:46:05 AM	A88912

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206781**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: West LDU
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/14/2022 10:15:00 AM
Lab ID: 2206781-005B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	6/20/2022 11:48:13 PM	68189

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206781**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: West LDU
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/14/2022 10:15:00 AM
Lab ID: 2206781-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **ED**	
Diesel Range Organics (DRO)	2.3	0.016	0.064		mg/L	1	6/29/2022 12:06:53 AM	68185
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	6/29/2022 12:06:53 AM	68185
Surr: DNOP	92.8	0	42.2-138		%Rec	1	6/29/2022 12:06:53 AM	68185
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	6/29/2022 4:21:41 PM	68202
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	6/29/2022 4:21:41 PM	68202
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	6/29/2022 4:21:41 PM	68202
Di-n-octyl phthalate	ND	12	20		µg/L	1	6/29/2022 4:21:41 PM	68202
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	6/29/2022 4:21:41 PM	68202
Diethyl phthalate	ND	6.0	10		µg/L	1	6/29/2022 4:21:41 PM	68202
Dimethyl phthalate	ND	6.0	10		µg/L	1	6/29/2022 4:21:41 PM	68202
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	6/29/2022 4:21:41 PM	68202
2,4-Dinitrophenol	ND	16	20		µg/L	1	6/29/2022 4:21:41 PM	68202
2-Methylphenol	ND	5.0	10		µg/L	1	6/29/2022 4:21:41 PM	68202
3+4-Methylphenol	ND	5.1	10		µg/L	1	6/29/2022 4:21:41 PM	68202
Phenol	ND	18	20		µg/L	1	6/29/2022 4:21:41 PM	68202
Pyridine	ND	14	40		µg/L	1	6/29/2022 4:21:41 PM	68202
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	6/29/2022 4:21:41 PM	68202
Surr: 2-Fluorophenol	56.8	0	29.4-87.7		%Rec	1	6/29/2022 4:21:41 PM	68202
Surr: Phenol-d5	0	0	28.5-64.7	S	%Rec	1	6/29/2022 4:21:41 PM	68202
Surr: 2,4,6-Tribromophenol	71.4	0	18.6-129		%Rec	1	6/29/2022 4:21:41 PM	68202
Surr: Nitrobenzene-d5	65.5	0	36.9-103		%Rec	1	6/29/2022 4:21:41 PM	68202
Surr: 2-Fluorobiphenyl	70.3	0	38.1-99.9		%Rec	1	6/29/2022 4:21:41 PM	68202
Surr: 4-Terphenyl-d14	85.4	0	48-155		%Rec	1	6/29/2022 4:21:41 PM	68202
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	9.8	0.11	1.0		µg/L	1	6/28/2022 3:38:00 PM	68202
Naphthalene	ND	0.20	0.30		µg/L	1	6/28/2022 3:38:00 PM	68202
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	6/28/2022 3:38:00 PM	68202
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	6/28/2022 3:38:00 PM	68202
Acenaphthene	ND	0.14	0.30		µg/L	1	6/28/2022 3:38:00 PM	68202
Fluorene	ND	0.095	0.30		µg/L	1	6/28/2022 3:38:00 PM	68202
Phenanthrene	ND	0.16	0.30		µg/L	1	6/28/2022 3:38:00 PM	68202
Anthracene	ND	0.14	0.30		µg/L	1	6/28/2022 3:38:00 PM	68202
Fluoranthene	ND	0.14	0.30		µg/L	1	6/28/2022 3:38:00 PM	68202
Pyrene	ND	0.32	1.0		µg/L	1	6/28/2022 3:38:00 PM	68202
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	6/28/2022 3:38:00 PM	68202
Chrysene	ND	0.25	0.30		µg/L	1	6/28/2022 3:38:00 PM	68202
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	6/28/2022 3:38:00 PM	68202
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	6/28/2022 3:38:00 PM	68202

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206781**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: West LDU
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/14/2022 10:15:00 AM
Lab ID: 2206781-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	77.8	0	31.6-100		%Rec	1	6/28/2022 3:38:00 PM	68202
Surr: 2-Fluorobiphenyl	64.9	0	26.7-90.1		%Rec	1	6/28/2022 3:38:00 PM	68202
Surr: 4-Terphenyl-d14	81.7	0	72.3-147		%Rec	1	6/28/2022 3:38:00 PM	68202

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206781**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: West LDU
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/14/2022 10:15:00 AM
Lab ID: 2206781-005D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	0.067	0.0016	0.0030		mg/L	1	6/20/2022 2:38:59 PM	68172
Beryllium	ND	0.00088	0.0020		mg/L	1	6/20/2022 2:38:59 PM	68172
Cadmium	ND	0.0018	0.0020		mg/L	1	6/20/2022 2:38:59 PM	68172
Chromium	1.0	0.0098	0.030	*	mg/L	5	6/21/2022 6:10:11 PM	68172
Cobalt	0.012	0.0035	0.0060		mg/L	1	6/20/2022 2:38:59 PM	68172
Nickel	1.1	0.027	0.050	*	mg/L	5	6/21/2022 6:10:11 PM	68172
Silver	ND	0.0018	0.0050		mg/L	1	6/20/2022 2:38:59 PM	68172
Vanadium	0.025	0.0035	0.050	J	mg/L	1	6/20/2022 2:38:59 PM	68172
Zinc	ND	0.0039	0.010		mg/L	1	6/20/2022 2:38:59 PM	68172
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	6/20/2022 6:16:02 PM	68172
Arsenic	0.00097	0.00063	0.0050	J	mg/L	5	6/20/2022 6:16:02 PM	68172
Lead	0.0017	0.00031	0.0025	J	mg/L	5	6/20/2022 6:16:02 PM	68172
Selenium	ND	0.0019	0.0050		mg/L	5	6/20/2022 6:16:02 PM	68172
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/17/2022 2:49:40 PM	68186

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206781**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: West LDU
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/14/2022 10:15:00 AM
Lab ID: 2206781-005E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.039	0.0011	0.0020		mg/L	1	6/15/2022 9:53:21 PM	B88784
Beryllium	ND	0.00088	0.0020		mg/L	1	6/15/2022 9:53:21 PM	B88784
Cadmium	ND	0.00098	0.0020		mg/L	1	6/15/2022 9:53:21 PM	B88784
Chromium	0.51	0.0020	0.0060	*	mg/L	1	6/15/2022 9:53:21 PM	B88784
Cobalt	0.0039	0.0024	0.0060	J	mg/L	1	6/15/2022 9:53:21 PM	B88784
Nickel	0.96	0.0033	0.010	*	mg/L	1	6/15/2022 9:53:21 PM	B88784
Silver	ND	0.0013	0.0050		mg/L	1	6/15/2022 9:53:21 PM	B88784
Vanadium	ND	0.0017	0.050		mg/L	1	6/15/2022 9:53:21 PM	B88784
Zinc	0.064	0.0032	0.010		mg/L	1	6/15/2022 9:53:21 PM	B88784
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/21/2022 11:42:18 AM	B88918
Arsenic	ND	0.00061	0.0050		mg/L	5	6/21/2022 1:08:23 PM	B88918
Lead	0.00043	0.000057	0.00050	J	mg/L	1	6/21/2022 11:42:18 AM	B88918
Selenium	ND	0.0017	0.0050		mg/L	5	6/21/2022 1:08:23 PM	B88918
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/17/2022 2:51:57 PM	68186

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206781**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB-6-9-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/14/2022 10:15:00 AM
Lab ID: 2206781-006A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	0.23	1.0		µg/L	1	6/22/2022 4:13:02 AM	A88912
Toluene	0.32	0.20	1.0	J	µg/L	1	6/22/2022 4:13:02 AM	A88912
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/22/2022 4:13:02 AM	A88912
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	6/22/2022 4:13:02 AM	A88912
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/22/2022 4:13:02 AM	A88912
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/22/2022 4:13:02 AM	A88912
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/22/2022 4:13:02 AM	A88912
Acetone	3.5	2.5	10	J	µg/L	1	6/22/2022 4:13:02 AM	A88912
Bromomethane	ND	0.85	3.0		µg/L	1	6/22/2022 4:13:02 AM	A88912
2-Butanone	ND	2.0	10		µg/L	1	6/22/2022 4:13:02 AM	A88912
Carbon disulfide	ND	0.59	10		µg/L	1	6/22/2022 4:13:02 AM	A88912
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/22/2022 4:13:02 AM	A88912
Chloroform	ND	0.13	1.0		µg/L	1	6/22/2022 4:13:02 AM	A88912
Chloromethane	ND	0.41	3.0		µg/L	1	6/22/2022 4:13:02 AM	A88912
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/22/2022 4:13:02 AM	A88912
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/22/2022 4:13:02 AM	A88912
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/22/2022 4:13:02 AM	A88912
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/22/2022 4:13:02 AM	A88912
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/22/2022 4:13:02 AM	A88912
Methylene Chloride	0.72	0.50	3.0	J	µg/L	1	6/22/2022 4:13:02 AM	A88912
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/22/2022 4:13:02 AM	A88912
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/22/2022 4:13:02 AM	A88912
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	6/22/2022 4:13:02 AM	A88912
Styrene	ND	0.14	1.0		µg/L	1	6/22/2022 4:13:02 AM	A88912
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/22/2022 4:13:02 AM	A88912
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/22/2022 4:13:02 AM	A88912
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/22/2022 4:13:02 AM	A88912
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/22/2022 4:13:02 AM	A88912
Xylenes, Total	ND	0.37	1.5		µg/L	1	6/22/2022 4:13:02 AM	A88912
Surr: 1,2-Dichloroethane-d4	92.0	0	70-130		%Rec	1	6/22/2022 4:13:02 AM	A88912
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	6/22/2022 4:13:02 AM	A88912
Surr: Dibromofluoromethane	96.0	0	70-130		%Rec	1	6/22/2022 4:13:02 AM	A88912
Surr: Toluene-d8	97.7	0	70-130		%Rec	1	6/22/2022 4:13:02 AM	A88912

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206781**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-9-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/14/2022
Lab ID: 2206781-007A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	0.52	0.0090	0.050		mg/L	1	6/23/2022 3:29:40 PM	G88994
Surr: BFB	230	0	70-130	S	%Rec	1	6/23/2022 3:29:40 PM	G88994
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	21	0.23	1.0		µg/L	1	6/22/2022 4:39:57 AM	A88912
Toluene	1.7	0.20	1.0		µg/L	1	6/22/2022 4:39:57 AM	A88912
Ethylbenzene	19	0.21	1.0		µg/L	1	6/22/2022 4:39:57 AM	A88912
Methyl tert-butyl ether (MTBE)	1.5	0.39	1.0		µg/L	1	6/22/2022 4:39:57 AM	A88912
1,2,4-Trimethylbenzene	9.6	0.12	1.0		µg/L	1	6/22/2022 4:39:57 AM	A88912
1,3,5-Trimethylbenzene	8.2	0.18	1.0		µg/L	1	6/22/2022 4:39:57 AM	A88912
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/22/2022 4:39:57 AM	A88912
Acetone	ND	2.5	10		µg/L	1	6/22/2022 4:39:57 AM	A88912
Bromomethane	ND	0.85	3.0		µg/L	1	6/22/2022 4:39:57 AM	A88912
2-Butanone	ND	2.0	10		µg/L	1	6/22/2022 4:39:57 AM	A88912
Carbon disulfide	ND	0.59	10		µg/L	1	6/22/2022 4:39:57 AM	A88912
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/22/2022 4:39:57 AM	A88912
Chloroform	ND	0.13	1.0		µg/L	1	6/22/2022 4:39:57 AM	A88912
Chloromethane	ND	0.41	3.0		µg/L	1	6/22/2022 4:39:57 AM	A88912
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/22/2022 4:39:57 AM	A88912
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/22/2022 4:39:57 AM	A88912
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/22/2022 4:39:57 AM	A88912
Isopropylbenzene	4.2	0.18	1.0		µg/L	1	6/22/2022 4:39:57 AM	A88912
4-Isopropyltoluene	1.3	0.20	1.0		µg/L	1	6/22/2022 4:39:57 AM	A88912
Methylene Chloride	220	5.0	30		µg/L	10	6/22/2022 12:30:29 PM	A88962
n-Butylbenzene	0.81	0.25	3.0	J	µg/L	1	6/22/2022 4:39:57 AM	A88912
n-Propylbenzene	4.3	0.18	1.0		µg/L	1	6/22/2022 4:39:57 AM	A88912
sec-Butylbenzene	2.0	0.14	1.0		µg/L	1	6/22/2022 4:39:57 AM	A88912
Styrene	ND	0.14	1.0		µg/L	1	6/22/2022 4:39:57 AM	A88912
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/22/2022 4:39:57 AM	A88912
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/22/2022 4:39:57 AM	A88912
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/22/2022 4:39:57 AM	A88912
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/22/2022 4:39:57 AM	A88912
Xylenes, Total	14	0.37	1.5		µg/L	1	6/22/2022 4:39:57 AM	A88912
Surr: 1,2-Dichloroethane-d4	102	0	70-130		%Rec	1	6/22/2022 4:39:57 AM	A88912
Surr: 4-Bromofluorobenzene	97.9	0	70-130		%Rec	1	6/22/2022 4:39:57 AM	A88912
Surr: Dibromofluoromethane	92.7	0	70-130		%Rec	1	6/22/2022 4:39:57 AM	A88912
Surr: Toluene-d8	100	0	70-130		%Rec	1	6/22/2022 4:39:57 AM	A88912

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206781**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-9-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/14/2022
Lab ID: 2206781-007B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	6/21/2022 12:18:30 AM	68189

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206781**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-9-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/14/2022
Lab ID: 2206781-007C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **ED**	
Diesel Range Organics (DRO)	3.5	0.16	0.64		mg/L	10	6/30/2022 7:40:30 PM	68185
Motor Oil Range Organics (MRO)	ND	0.52	0.80	D	mg/L	10	6/30/2022 7:40:30 PM	68185
Surr: DNOP	0	0	42.2-138	S	%Rec	10	6/30/2022 7:40:30 PM	68185
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	6/29/2022 5:04:33 PM	68202
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	6/29/2022 5:04:33 PM	68202
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	6/29/2022 5:04:33 PM	68202
Di-n-octyl phthalate	ND	12	20		µg/L	1	6/29/2022 5:04:33 PM	68202
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	6/29/2022 5:04:33 PM	68202
Diethyl phthalate	ND	6.0	10		µg/L	1	6/29/2022 5:04:33 PM	68202
Dimethyl phthalate	ND	6.0	10		µg/L	1	6/29/2022 5:04:33 PM	68202
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	6/29/2022 5:04:33 PM	68202
2,4-Dinitrophenol	ND	16	20		µg/L	1	6/29/2022 5:04:33 PM	68202
2-Methylphenol	ND	5.0	10		µg/L	1	6/29/2022 5:04:33 PM	68202
3+4-Methylphenol	ND	5.1	10		µg/L	1	6/29/2022 5:04:33 PM	68202
Phenol	ND	18	20		µg/L	1	6/29/2022 5:04:33 PM	68202
Pyridine	ND	14	40		µg/L	1	6/29/2022 5:04:33 PM	68202
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	6/29/2022 5:04:33 PM	68202
Surr: 2-Fluorophenol	44.6	0	29.4-87.7		%Rec	1	6/29/2022 5:04:33 PM	68202
Surr: Phenol-d5	32.4	0	28.5-64.7		%Rec	1	6/29/2022 5:04:33 PM	68202
Surr: 2,4,6-Tribromophenol	70.0	0	18.6-129		%Rec	1	6/29/2022 5:04:33 PM	68202
Surr: Nitrobenzene-d5	52.9	0	36.9-103		%Rec	1	6/29/2022 5:04:33 PM	68202
Surr: 2-Fluorobiphenyl	55.9	0	38.1-99.9		%Rec	1	6/29/2022 5:04:33 PM	68202
Surr: 4-Terphenyl-d14	72.1	0	48-155		%Rec	1	6/29/2022 5:04:33 PM	68202
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	1.4	0.11	1.0		µg/L	1	6/28/2022 4:22:00 PM	68202
Naphthalene	ND	0.20	0.30		µg/L	1	6/28/2022 4:22:00 PM	68202
1-Methylnaphthalene	0.34	0.15	0.30		µg/L	1	6/28/2022 4:22:00 PM	68202
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	6/28/2022 4:22:00 PM	68202
Acenaphthene	0.68	0.14	0.30		µg/L	1	6/28/2022 4:22:00 PM	68202
Fluorene	1.3	0.095	0.30		µg/L	1	6/28/2022 4:22:00 PM	68202
Phenanthrene	2.5	0.16	0.30		µg/L	1	6/28/2022 4:22:00 PM	68202
Anthracene	0.52	0.14	0.30		µg/L	1	6/28/2022 4:22:00 PM	68202
Fluoranthene	0.76	0.14	0.30		µg/L	1	6/28/2022 4:22:00 PM	68202
Pyrene	0.34	0.32	1.0	J	µg/L	1	6/28/2022 4:22:00 PM	68202
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	6/28/2022 4:22:00 PM	68202
Chrysene	ND	0.25	0.30		µg/L	1	6/28/2022 4:22:00 PM	68202
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	6/28/2022 4:22:00 PM	68202
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	6/28/2022 4:22:00 PM	68202

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206781**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-9-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/14/2022
Lab ID: 2206781-007C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	62.1	0	31.6-100		%Rec	1	6/28/2022 4:22:00 PM	68202
Surr: 2-Fluorobiphenyl	49.8	0	26.7-90.1		%Rec	1	6/28/2022 4:22:00 PM	68202
Surr: 4-Terphenyl-d14	65.7	0	72.3-147	S	%Rec	1	6/28/2022 4:22:00 PM	68202

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206781**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-9-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/14/2022
Lab ID: 2206781-007D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	0.14	0.0016	0.0030		mg/L	1	6/20/2022 2:43:06 PM	68172
Beryllium	0.0046	0.00088	0.0020	*	mg/L	1	6/20/2022 2:43:06 PM	68172
Cadmium	ND	0.0018	0.0020		mg/L	1	6/20/2022 2:43:06 PM	68172
Chromium	4.7	0.0098	0.030	*	mg/L	5	6/21/2022 6:24:11 PM	68172
Cobalt	0.024	0.0035	0.0060		mg/L	1	6/20/2022 2:43:06 PM	68172
Nickel	3.4	0.027	0.050	*	mg/L	5	6/21/2022 6:24:11 PM	68172
Silver	ND	0.0018	0.0050		mg/L	1	6/21/2022 5:24:00 PM	68172
Vanadium	0.13	0.0035	0.050		mg/L	1	6/20/2022 2:43:06 PM	68172
Zinc	0.16	0.0039	0.010		mg/L	1	6/21/2022 5:24:00 PM	68172
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0089	0.020		mg/L	20	6/20/2022 6:18:30 PM	68172
Arsenic	ND	0.0025	0.020		mg/L	20	6/20/2022 6:18:30 PM	68172
Lead	ND	0.0012	0.010		mg/L	20	6/20/2022 6:18:30 PM	68172
Selenium	ND	0.0074	0.020		mg/L	20	6/20/2022 6:18:30 PM	68172
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/17/2022 2:54:08 PM	68186

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206781**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-9-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/14/2022
Lab ID: 2206781-007E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.052	0.0011	0.0020		mg/L	1	6/15/2022 9:57:41 PM	B88784
Beryllium	0.0044	0.00088	0.0020	*	mg/L	1	6/15/2022 9:57:41 PM	B88784
Cadmium	ND	0.00098	0.0020		mg/L	1	6/15/2022 9:57:41 PM	B88784
Chromium	2.8	0.0098	0.030	*	mg/L	5	6/15/2022 9:59:56 PM	B88784
Cobalt	0.014	0.0024	0.0060		mg/L	1	6/15/2022 9:57:41 PM	B88784
Nickel	3.2	0.016	0.050	*	mg/L	5	6/15/2022 9:59:56 PM	B88784
Silver	ND	0.0013	0.0050		mg/L	1	6/15/2022 9:57:41 PM	B88784
Vanadium	0.018	0.0017	0.050	J	mg/L	1	6/15/2022 9:57:41 PM	B88784
Zinc	0.12	0.0032	0.010		mg/L	1	6/15/2022 9:57:41 PM	B88784
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	6/21/2022 1:19:09 PM	B88918
Arsenic	0.00081	0.00061	0.0050	J	mg/L	5	6/21/2022 1:19:09 PM	B88918
Lead	ND	0.00028	0.0025		mg/L	5	6/21/2022 1:19:09 PM	B88918
Selenium	ND	0.0017	0.0050		mg/L	5	6/21/2022 1:19:09 PM	B88918
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/17/2022 2:56:15 PM	68186

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206781**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 2nd Qtr
Collection Date:
Lab ID: 2206781-008A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	0.23	1.0		µg/L	1	6/21/2022 9:01:10 PM	A88912
Toluene	ND	0.20	1.0		µg/L	1	6/21/2022 9:01:10 PM	A88912
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/21/2022 9:01:10 PM	A88912
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	6/21/2022 9:01:10 PM	A88912
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/21/2022 9:01:10 PM	A88912
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/21/2022 9:01:10 PM	A88912
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/21/2022 9:01:10 PM	A88912
Acetone	ND	2.5	10		µg/L	1	6/21/2022 9:01:10 PM	A88912
Bromomethane	ND	0.85	3.0		µg/L	1	6/21/2022 9:01:10 PM	A88912
2-Butanone	ND	2.0	10		µg/L	1	6/21/2022 9:01:10 PM	A88912
Carbon disulfide	ND	0.59	10		µg/L	1	6/21/2022 9:01:10 PM	A88912
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/21/2022 9:01:10 PM	A88912
Chloroform	ND	0.13	1.0		µg/L	1	6/21/2022 9:01:10 PM	A88912
Chloromethane	0.76	0.41	3.0	J	µg/L	1	6/21/2022 9:01:10 PM	A88912
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/21/2022 9:01:10 PM	A88912
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/21/2022 9:01:10 PM	A88912
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/21/2022 9:01:10 PM	A88912
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/21/2022 9:01:10 PM	A88912
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/21/2022 9:01:10 PM	A88912
Methylene Chloride	0.52	0.50	3.0	J	µg/L	1	6/21/2022 9:01:10 PM	A88912
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/21/2022 9:01:10 PM	A88912
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/21/2022 9:01:10 PM	A88912
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	6/21/2022 9:01:10 PM	A88912
Styrene	ND	0.14	1.0		µg/L	1	6/21/2022 9:01:10 PM	A88912
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/21/2022 9:01:10 PM	A88912
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/21/2022 9:01:10 PM	A88912
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/21/2022 9:01:10 PM	A88912
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/21/2022 9:01:10 PM	A88912
Xylenes, Total	ND	0.37	1.5		µg/L	1	6/21/2022 9:01:10 PM	A88912
Surr: 1,2-Dichloroethane-d4	92.8	0	70-130		%Rec	1	6/21/2022 9:01:10 PM	A88912
Surr: 4-Bromofluorobenzene	100	0	70-130		%Rec	1	6/21/2022 9:01:10 PM	A88912
Surr: Dibromofluoromethane	94.9	0	70-130		%Rec	1	6/21/2022 9:01:10 PM	A88912
Surr: Toluene-d8	99.8	0	70-130		%Rec	1	6/21/2022 9:01:10 PM	A88912

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206781**
Date Reported: **7/8/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 2nd Qtr
Collection Date:
Lab ID: 2206781-008B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	6/21/2022 12:48:48 AM	68189

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

ANALYTICAL REPORT

June 25, 2022

Hall Environmental Analysis Laboratory

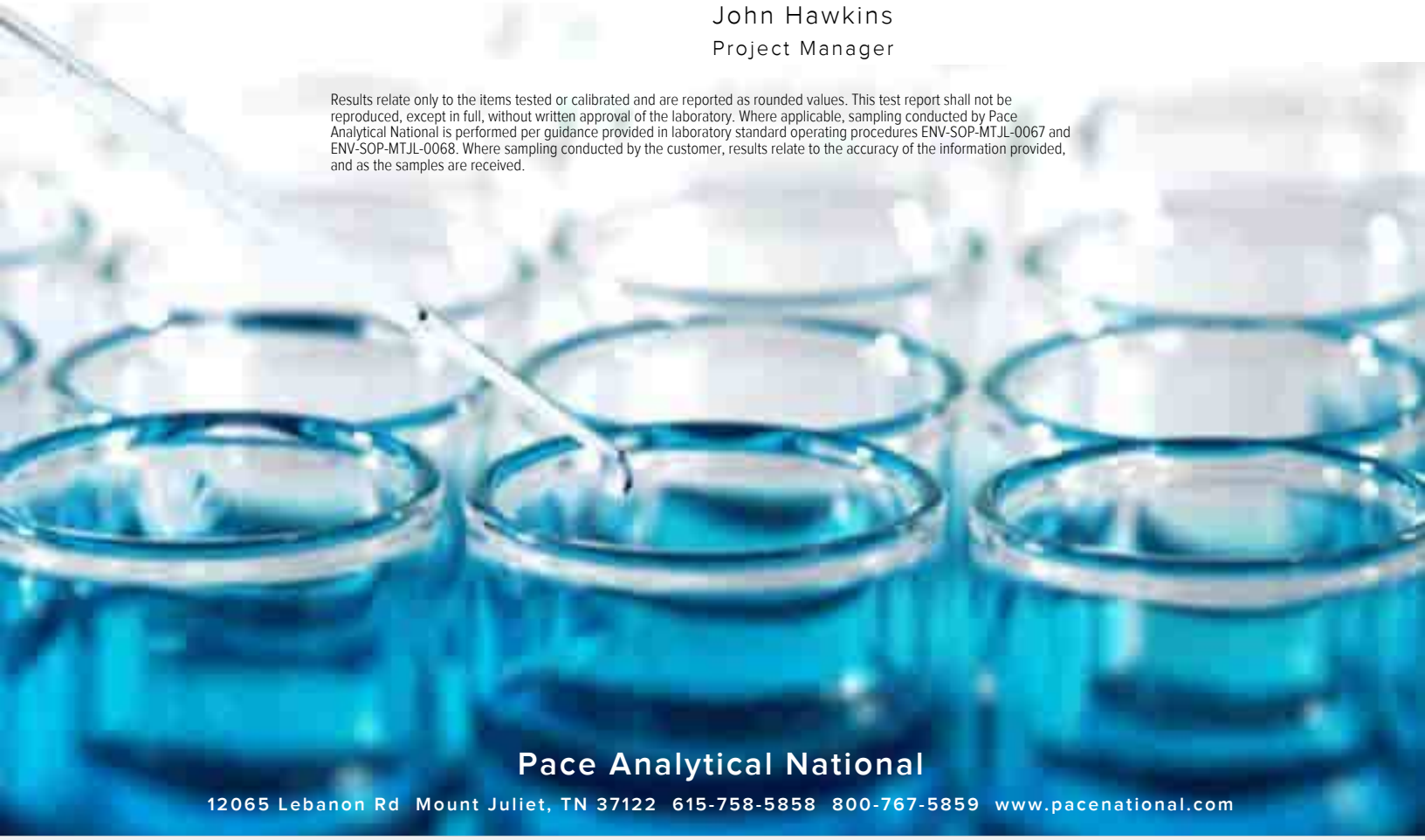
Sample Delivery Group:	L1505741
Samples Received:	06/16/2022
Project Number:	
Description:	

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By:

John Hawkins
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 4

Sr: Sample Results 5

2206781-001F EB-6-14-22 L1505741-01 5

2206781-002F PW-3 L1505741-02 6

2206781-003F PW-4 L1505741-03 7

2206781-004F EAST LDU L1505741-04 8

2206781-005F WEST LDU L1505741-05 9

2206781-007F DUP-6-9-22 L1505741-06 10

Qc: Quality Control Summary 11

Wet Chemistry by Method 4500CN E-2016 11

Gl: Glossary of Terms 12

Al: Accreditations & Locations 13

Sc: Sample Chain of Custody 14

Released to Imaging: 4/21/2023 9:40:26 AM

SAMPLE SUMMARY

2206781-001F EB-6-14-22 L1505741-01 WW

Collected by | Collected date/time 06/14/22 08:00 | Received date/time 06/16/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1883737	1	06/23/22 18:47	06/24/22 09:22	LDT	Mt. Juliet, TN

2206781-002F PW-3 L1505741-02 WW

Collected by | Collected date/time 06/14/22 08:30 | Received date/time 06/16/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1883737	1	06/23/22 18:47	06/24/22 09:23	LDT	Mt. Juliet, TN

2206781-003F PW-4 L1505741-03 WW

Collected by | Collected date/time 06/14/22 09:00 | Received date/time 06/16/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1883737	1	06/23/22 18:47	06/24/22 09:26	LDT	Mt. Juliet, TN

2206781-004F EAST LDU L1505741-04 WW

Collected by | Collected date/time 06/14/22 09:40 | Received date/time 06/16/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1883737	1	06/23/22 18:47	06/24/22 09:27	LDT	Mt. Juliet, TN

2206781-005F WEST LDU L1505741-05 WW

Collected by | Collected date/time 06/14/22 10:15 | Received date/time 06/16/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1883737	1	06/23/22 18:47	06/24/22 09:28	LDT	Mt. Juliet, TN

2206781-007F DUP-6-9-22 L1505741-06 WW

Collected by | Collected date/time 06/14/22 00:00 | Received date/time 06/16/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1883737	1	06/23/22 18:47	06/24/22 09:29	LDT	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Received by OCD: 4/21/2023 9:21:57 AM

220678-001F EB-6-14-22
Collected date/time: 06/14/22 08:00

SAMPLE RESULTS - 01

L1505741

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	06/24/2022 09:22	WG1883737

Released to Imaging: 4/21/2023 9:40:26 AM

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	06/24/2022 09:23	WG1883737

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.0142		0.00500	1	06/24/2022 09:26	WG1883737

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	06/24/2022 09:27	WG1883737

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	06/24/2022 09:28	WG1883737

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	06/24/2022 09:29	WG1883737

Method Blank (MB)

(MB) R3807037-1 06/24/22 09:02

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1505254-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1505254-05 06/24/22 09:07 • (DUP) R3807037-3 06/24/22 09:08

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

L1505529-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1505529-05 06/24/22 09:14 • (DUP) R3807037-6 06/24/22 09:15

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3807037-2 06/24/22 09:03

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.105	105	87.1-120	

L1505529-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1505529-04 06/24/22 09:09 • (MS) R3807037-4 06/24/22 09:10 • (MSD) R3807037-5 06/24/22 09:11

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0999	0.0980	99.9	98.0	1	90.0-110			1.92	20

L1505529-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1505529-06 06/24/22 09:16 • (MS) R3807037-7 06/24/22 09:17 • (MSD) R3807037-8 06/24/22 09:18

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0972	0.0962	97.2	96.2	1	90.0-110			1.03	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
	The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

D179

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

SUB CONTRATOR:	Pace TN	COMPANY: PACE TN	PHONE: (800) 767-5859	FAX: (615) 758-5859	
ADDRESS:	12065 Lebanon Rd		ACCOUNT #:	EMAIL:	
CITY, STATE, ZIP:	Mt. Juliet, TN 37122				

L1505741

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS	
1	2206781-001F	EB-6-14-22	500AMBHDP F-NAOH	Groundwater	6/14/2022 8:00:00 AM	1	Total Cyanide J and MDL	-01
2	2206781-002F	PW-3	500AMBHDP F-NAOH	Groundwater	6/14/2022 8:30:00 AM	1	Total Cyanide J and MDL	-02
3	2206781-003F	PW-4	500AMBHDP F-NAOH	Groundwater	6/14/2022 9:00:00 AM	1	Total Cyanide J and MDL	-03
4	2206781-004F	East LDU	500AMBHDP F-NAOH	Groundwater	6/14/2022 9:40:00 AM	1	Total Cyanide J and MDL	-04
5	2206781-005F	West LDU	500AMBHDP F-NAOH	Groundwater	6/14/2022 10:15:00 AM	1	Total Cyanide J and MDL	-05
6	2206781-007F	DUP-6-9-22	500AMBHDP F-NAOH	Groundwater	6/14/2022	1	Total Cyanide J and MDL	-06

5755 8089 3826

Sample Receipt Checklist:

COC Seal Present/Intact:	Y N	If Applicable	
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	Y N	Pres.Correct/Check:	Y N
Correct bottles used:	Y N	DRA7	
Sufficient volume sent:	Y N	2.7 +0 = 2.7	
RAD Screen <0.5 mR/hr:	Y N		

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By: CMC	Date: 6/15/2022	Time: 10:12 AM	Received By: Matt M	Date: 6/16/22	Time: 09:00
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☒ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:

☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY

Temp of samples _____ ℃ Attempt to Cool ? _____

Comments: _____

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206781**

08-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **MB-68172**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **68172**	RunNo: **88908**
Prep Date: **6/16/2022**	Analysis Date: **6/20/2022**	SeqNo: **3157155** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LCSLL-68172**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **68172**	RunNo: **88908**
Prep Date: **6/16/2022**	Analysis Date: **6/20/2022**	SeqNo: **3157156** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0027	0.0030	0.002000	0	137	50	150			J
Beryllium	0.0016	0.0020	0.002000	0	80.6	50	150			J
Cadmium	0.0018	0.0020	0.002000	0	92.4	50	150			J
Chromium	0.0050	0.0060	0.006000	0	83.1	50	150			J
Cobalt	0.0076	0.0060	0.006000	0	127	50	150			
Nickel	0.0046	0.010	0.005000	0	92.7	50	150			J
Silver	0.0051	0.0050	0.005000	0	101	50	150			
Vanadium	0.0087	0.050	0.01000	0	87.4	50	150			J
Zinc	0.011	0.010	0.01000	0	114	50	150			

Sample ID: **LCS-68172**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **68172**	RunNo: **88908**
Prep Date: **6/16/2022**	Analysis Date: **6/20/2022**	SeqNo: **3157157** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0030	0.5000	0	99.1	85	115			
Beryllium	0.52	0.0020	0.5000	0	104	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.4	85	115			
Chromium	0.49	0.0060	0.5000	0	97.9	85	115			
Cobalt	0.48	0.0060	0.5000	0	95.8	85	115			
Nickel	0.47	0.010	0.5000	0	93.7	85	115			
Silver	0.10	0.0050	0.1000	0	100	85	115			
Vanadium	0.50	0.050	0.5000	0	100	85	115			
Zinc	0.47	0.010	0.5000	0	94.8	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206781**

08-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **2206781-005DMS** SampType: **MS** TestCode: **EPA Method 200.7: Metals**

Client ID: **West LDU** Batch ID: **68172** RunNo: **88908**

Prep Date: **6/16/2022** Analysis Date: **6/20/2022** SeqNo: **3157172** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.56	0.0030	0.5000	0.06750	97.5	70	130			
Beryllium	0.50	0.0020	0.5000	0	101	70	130			
Cadmium	0.50	0.0020	0.5000	0	99.4	70	130			
Cobalt	0.48	0.0060	0.5000	0.01222	93.7	70	130			
Silver	0.098	0.0050	0.1000	0	97.8	70	130			
Vanadium	0.53	0.050	0.5000	0.02470	101	70	130			
Zinc	0.44	0.010	0.5000	0	87.6	70	130			

Sample ID: **2206781-005DMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Metals**

Client ID: **West LDU** Batch ID: **68172** RunNo: **88908**

Prep Date: **6/16/2022** Analysis Date: **6/20/2022** SeqNo: **3157173** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.56	0.0030	0.5000	0.06750	98.8	70	130	1.15	20	
Beryllium	0.51	0.0020	0.5000	0	102	70	130	1.22	20	
Cadmium	0.51	0.0020	0.5000	0	101	70	130	1.89	20	
Cobalt	0.49	0.0060	0.5000	0.01222	95.1	70	130	1.45	20	
Silver	0.099	0.0050	0.1000	0	98.7	70	130	0.963	20	
Vanadium	0.53	0.050	0.5000	0.02470	100	70	130	0.582	20	
Zinc	0.44	0.010	0.5000	0	88.5	70	130	0.945	20	

Sample ID: **2206781-007DMS** SampType: **MS** TestCode: **EPA Method 200.7: Metals**

Client ID: **DUP-6-9-22** Batch ID: **68172** RunNo: **88908**

Prep Date: **6/16/2022** Analysis Date: **6/20/2022** SeqNo: **3157178** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.62	0.0030	0.5000	0.1425	95.4	70	130			
Beryllium	0.51	0.0020	0.5000	0.004611	102	70	130			
Cadmium	0.46	0.0020	0.5000	0	92.1	70	130			
Cobalt	0.49	0.0060	0.5000	0.02435	93.6	70	130			
Vanadium	0.63	0.050	0.5000	0.1278	99.8	70	130			

Sample ID: **2206781-007DMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Metals**

Client ID: **DUP-6-9-22** Batch ID: **68172** RunNo: **88908**

Prep Date: **6/16/2022** Analysis Date: **6/20/2022** SeqNo: **3157179** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.62	0.0030	0.5000	0.1425	94.9	70	130	0.353	20	
Beryllium	0.52	0.0020	0.5000	0.004611	102	70	130	0.149	20	
Cadmium	0.46	0.0020	0.5000	0	92.8	70	130	0.730	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206781**

08-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **2206781-007DMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Metals**

Client ID: **DUP-6-9-22** Batch ID: **68172** RunNo: **88908**

Prep Date: **6/16/2022** Analysis Date: **6/20/2022** SeqNo: **3157179** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	0.50	0.0060	0.5000	0.02435	94.9	70	130	1.33	20	
Vanadium	0.63	0.050	0.5000	0.1278	99.5	70	130	0.276	20	

Sample ID: **2206781-005DMS** SampType: **MS** TestCode: **EPA Method 200.7: Metals**

Client ID: **West LDU** Batch ID: **68172** RunNo: **88936**

Prep Date: **6/16/2022** Analysis Date: **6/21/2022** SeqNo: **3158298** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	1.5	0.030	0.5000	1.011	97.8	70	130			
Nickel	1.5	0.050	0.5000	1.081	93.6	70	130			

Sample ID: **2206781-005DMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Metals**

Client ID: **West LDU** Batch ID: **68172** RunNo: **88936**

Prep Date: **6/16/2022** Analysis Date: **6/21/2022** SeqNo: **3158299** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	1.5	0.030	0.5000	1.011	96.2	70	130	0.527	20	
Nickel	1.6	0.050	0.5000	1.081	96.5	70	130	0.913	20	

Sample ID: **2206781-007DMS** SampType: **MS** TestCode: **EPA Method 200.7: Metals**

Client ID: **DUP-6-9-22** Batch ID: **68172** RunNo: **88936**

Prep Date: **6/16/2022** Analysis Date: **6/21/2022** SeqNo: **3158301** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.047	0.0050	0.1000	0	46.5	70	130			S
Zinc	0.63	0.010	0.5000	0.1610	93.0	70	130			

Sample ID: **2206781-007DMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Metals**

Client ID: **DUP-6-9-22** Batch ID: **68172** RunNo: **88936**

Prep Date: **6/16/2022** Analysis Date: **6/21/2022** SeqNo: **3158302** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.049	0.0050	0.1000	0	49.1	70	130	5.33	20	S
Zinc	0.62	0.010	0.5000	0.1610	91.3	70	130	1.34	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206781**

08-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **MB-B** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**

Client ID: **PBW** Batch ID: **B88784** RunNo: **88784**

Prep Date: Analysis Date: **6/15/2022** SeqNo: **3152486** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS-B** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**

Client ID: **BatchQC** Batch ID: **B88784** RunNo: **88784**

Prep Date: Analysis Date: **6/15/2022** SeqNo: **3152487** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0023	0.0020	0.002000	0	114	50	150			
Beryllium	0.0019	0.0020	0.002000	0	92.5	50	150			J
Cadmium	0.0025	0.0020	0.002000	0	127	50	150			
Chromium	0.0064	0.0060	0.006000	0	106	50	150			
Cobalt	0.0071	0.0060	0.006000	0	118	50	150			
Nickel	0.0032	0.010	0.005000	0	64.9	50	150			J
Silver	0.0047	0.0050	0.005000	0	94.6	50	150			J
Vanadium	0.010	0.050	0.01000	0	101	50	150			J
Zinc	0.011	0.010	0.01000	0	112	50	150			

Sample ID: **LCS-B** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**

Client ID: **LCSW** Batch ID: **B88784** RunNo: **88784**

Prep Date: Analysis Date: **6/15/2022** SeqNo: **3152488** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	98.9	85	115			
Beryllium	0.50	0.0020	0.5000	0	99.7	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.5	85	115			
Chromium	0.50	0.0060	0.5000	0	99.1	85	115			
Cobalt	0.48	0.0060	0.5000	0	95.9	85	115			
Nickel	0.48	0.010	0.5000	0	96.0	85	115			
Silver	0.10	0.0050	0.1000	0	104	85	115			
Vanadium	0.50	0.050	0.5000	0	101	85	115			
Zinc	0.47	0.010	0.5000	0	94.3	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206781**

08-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **2206781-001EMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB-6-14-22**	Batch ID: **B88784**	RunNo: **88784**
Prep Date:	Analysis Date: **6/15/2022**	SeqNo: **3152504** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0020	0.5000	0	102	70	130			
Beryllium	0.52	0.0020	0.5000	0	104	70	130			
Cadmium	0.51	0.0020	0.5000	0	102	70	130			
Chromium	0.51	0.0060	0.5000	0	102	70	130			
Cobalt	0.49	0.0060	0.5000	0	97.9	70	130			
Nickel	0.49	0.010	0.5000	0	98.5	70	130			
Silver	0.11	0.0050	0.1000	0	108	70	130			
Vanadium	0.51	0.050	0.5000	0	101	70	130			
Zinc	0.50	0.010	0.5000	0.005808	99.1	70	130			

Sample ID: **2206781-001EMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB-6-14-22**	Batch ID: **B88784**	RunNo: **88784**
Prep Date:	Analysis Date: **6/15/2022**	SeqNo: **3152505** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0020	0.5000	0	102	70	130	0.498	20	
Beryllium	0.53	0.0020	0.5000	0	105	70	130	0.780	20	
Cadmium	0.51	0.0020	0.5000	0	102	70	130	0.336	20	
Chromium	0.51	0.0060	0.5000	0	102	70	130	0.372	20	
Cobalt	0.49	0.0060	0.5000	0	97.9	70	130	0.0229	20	
Nickel	0.49	0.010	0.5000	0	98.7	70	130	0.294	20	
Silver	0.11	0.0050	0.1000	0	112	70	130	3.37	20	
Vanadium	0.51	0.050	0.5000	0	102	70	130	1.01	20	
Zinc	0.50	0.010	0.5000	0.005808	98.7	70	130	0.494	20	

Sample ID: **MB-B**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B88897**	RunNo: **88897**
Prep Date:	Analysis Date: **6/20/2022**	SeqNo: **3156651** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	ND	0.0050								

Sample ID: **LLLCS-B**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B88897**	RunNo: **88897**
Prep Date:	Analysis Date: **6/20/2022**	SeqNo: **3156652** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.0055	0.0050	0.005000	0	110	50	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206781**
08-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Qtr

Sample ID: **LCS-B**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B88897**	RunNo: **88897**
Prep Date:	Analysis Date: **6/20/2022**	SeqNo: **3156653** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.10	0.0050	0.1000	0	103	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206781**
08-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Qtr

Sample ID: **MB-68172** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **68172** RunNo: **88865**
Prep Date: **6/16/2022** Analysis Date: **6/20/2022** SeqNo: **3155295** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **MSLCSLL-68172** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **68172** RunNo: **88865**
Prep Date: **6/16/2022** Analysis Date: **6/20/2022** SeqNo: **3155296** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0011	0.0010	0.001000	0	105	50	150			
Arsenic	0.00092	0.0010	0.001000	0	91.5	50	150			J
Lead	0.00049	0.00050	0.0005000	0	97.5	50	150			J
Selenium	0.0010	0.0010	0.001000	0	105	50	150			

Sample ID: **MSLCS-68172** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **68172** RunNo: **88865**
Prep Date: **6/16/2022** Analysis Date: **6/20/2022** SeqNo: **3155297** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	99.6	85	115			
Arsenic	0.025	0.0010	0.02500	0	102	85	115			
Lead	0.012	0.00050	0.01250	0	98.5	85	115			
Selenium	0.026	0.0010	0.02500	0	106	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206781**
08-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Qtr

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B88918**	RunNo: **88918**
Prep Date:	Analysis Date: **6/21/2022**	SeqNo: **3157492** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B88918**	RunNo: **88918**
Prep Date:	Analysis Date: **6/21/2022**	SeqNo: **3157493** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0011	0.0010	0.001000	0	113	50	150			
Arsenic	0.0012	0.0010	0.001000	0	117	50	150			
Lead	0.00057	0.00050	0.0005000	0	114	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B88918**	RunNo: **88918**
Prep Date:	Analysis Date: **6/21/2022**	SeqNo: **3157494** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	101	85	115			
Arsenic	0.026	0.0010	0.02500	0	105	85	115			
Lead	0.013	0.00050	0.01250	0	101	85	115			
Selenium	0.026	0.0010	0.02500	0	102	85	115			

Sample ID: **LCSD**	SampType: **LCSD**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSS02**	Batch ID: **B88918**	RunNo: **88918**
Prep Date:	Analysis Date: **6/21/2022**	SeqNo: **3157495** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	103	85	115	1.71	20	
Arsenic	0.026	0.0010	0.02500	0	105	85	115	0.0894	20	
Lead	0.013	0.00050	0.01250	0	103	85	115	2.56	20	
Selenium	0.025	0.0010	0.02500	0	100	85	115	1.84	20	

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B88918**	RunNo: **88918**
Prep Date:	Analysis Date: **6/21/2022**	SeqNo: **3157510** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.00092	0.0010	0.001000	0	92.2	50	150			J

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206781**
08-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Qtr

Sample ID: **2206781-001EMSLL** SampType: **MS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **EB-6-14-22** Batch ID: **B88918** RunNo: **88918**
Prep Date: Analysis Date: **6/21/2022** SeqNo: **3157516** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	101	70	130			
Arsenic	0.025	0.0010	0.02500	0	98.4	70	130			
Lead	0.012	0.00050	0.01250	0	93.2	70	130			
Selenium	0.025	0.0010	0.02500	0	100	70	130			

Sample ID: **2206781-001EMSDL** SampType: **MSD** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **EB-6-14-22** Batch ID: **B88918** RunNo: **88918**
Prep Date: Analysis Date: **6/21/2022** SeqNo: **3157517** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	105	70	130	4.05	20	
Arsenic	0.026	0.0010	0.02500	0	102	70	130	3.79	20	
Lead	0.012	0.00050	0.01250	0	96.8	70	130	3.83	20	
Selenium	0.026	0.0010	0.02500	0	105	70	130	4.82	20	

Sample ID: **2206781-002EMSLL** SampType: **MS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PW-3** Batch ID: **B88918** RunNo: **88918**
Prep Date: Analysis Date: **6/21/2022** SeqNo: **3157519** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.027	0.0010	0.02500	0	107	70	130			
Arsenic	0.031	0.0010	0.02500	0.003579	108	70	130			
Lead	0.012	0.00050	0.01250	0	92.7	70	130			
Selenium	0.028	0.0010	0.02500	0.001073	106	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206781**
08-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Qtr

Sample ID: **MB-68186**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **PBW**	Batch ID: **68186**	RunNo: **88841**							
Prep Date: **6/17/2022**	Analysis Date: **6/17/2022**	SeqNo: **3154507**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-68186**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **BatchQC**	Batch ID: **68186**	RunNo: **88841**							
Prep Date: **6/17/2022**	Analysis Date: **6/17/2022**	SeqNo: **3154508**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00022	0.00020	0.0001500	0	145	50	150			

Sample ID: **LCS-68186**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **LCSW**	Batch ID: **68186**	RunNo: **88841**							
Prep Date: **6/17/2022**	Analysis Date: **6/17/2022**	SeqNo: **3154509**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0053	0.00020	0.005000	0	105	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206781**

08-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **MB-68189**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **68189**	RunNo: **88885**
Prep Date: **6/20/2022**	Analysis Date: **6/20/2022**	SeqNo: **3156949** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **MB-68189**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **68189**	RunNo: **88885**
Prep Date: **6/20/2022**	Analysis Date: **6/20/2022**	SeqNo: **3156952** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-68189**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW**	Batch ID: **68189**	RunNo: **88885**
Prep Date: **6/20/2022**	Analysis Date: **6/20/2022**	SeqNo: **3156955** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.10	0.010	0.1000	0	99.6	70	130			

Sample ID: **LCSD-68189**	SampType: **LCSD**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSS02**	Batch ID: **68189**	RunNo: **88885**
Prep Date: **6/20/2022**	Analysis Date: **6/20/2022**	SeqNo: **3156957** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	115	70	130	14.4	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206781**
08-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Qtr

Sample ID: **MB-68185**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **PBW**	Batch ID: **68185**	RunNo: **89114**
Prep Date: **6/17/2022**	Analysis Date: **6/28/2022**	SeqNo: **3168760** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.018	0.064								J
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.034		0.03750		90.2	42.2	138			

Sample ID: **LCS-68185**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSW**	Batch ID: **68185**	RunNo: **89114**
Prep Date: **6/17/2022**	Analysis Date: **6/28/2022**	SeqNo: **3168761** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.17	0.064	0.1875	0	92.4	31.7	75.4			S
Surr: DNOP	0.020		0.01875		106	42.2	138			

Sample ID: **LCSD-68185**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02**	Batch ID: **68185**	RunNo: **89114**
Prep Date: **6/17/2022**	Analysis Date: **6/28/2022**	SeqNo: **3168763** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.17	0.064	0.1875	0	90.2	31.7	75.4	2.40	20	S
Surr: DNOP	0.020		0.01875		108	42.2	138	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206781**

08-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **G88994**	RunNo: **88994**
Prep Date:	Analysis Date: **6/23/2022**	SeqNo: **3160360** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	19		20.00		96.0	70	130			

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **G88994**	RunNo: **88994**
Prep Date:	Analysis Date: **6/23/2022**	SeqNo: **3160361** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.55	0.050	0.5000	0	109	80	120			
Surr: BFB	42		20.00		211	70	130			S

Sample ID: **2206781-002ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PW-3**	Batch ID: **G88994**	RunNo: **88994**
Prep Date:	Analysis Date: **6/23/2022**	SeqNo: **3160366** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.54	0.050	0.5000	0	107	70	130			
Surr: BFB	43		20.00		216	70	130			S

Sample ID: **2206781-002amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PW-3**	Batch ID: **G88994**	RunNo: **88994**
Prep Date:	Analysis Date: **6/23/2022**	SeqNo: **3160367** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.52	0.050	0.5000	0	104	70	130	2.73	20	
Surr: BFB	43		20.00		214	70	130	0	0	S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206781**
08-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Qtr

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **A88912**	RunNo: **88912**
Prep Date:	Analysis Date: **6/21/2022**	SeqNo: **3157839** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	98.1	70	130			
Toluene	20	1.0	20.00	0	98.3	70	130			
Chlorobenzene	19	1.0	20.00	0	96.4	70	130			
1,1-Dichloroethene	19	1.0	20.00	0	97.4	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	92.1	70	130			
Surr: 1,2-Dichloroethane-d4	9.6		10.00		96.0	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	9.6		10.00		95.6	70	130			
Surr: Toluene-d8	9.4		10.00		93.7	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **A88912**	RunNo: **88912**
Prep Date:	Analysis Date: **6/21/2022**	SeqNo: **3157862** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206781**
08-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Qtr

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW** Batch ID: **A88912** RunNo: **88912**
Prep Date: Analysis Date: **6/21/2022** SeqNo: **3157862** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.9		10.00		98.9	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	9.8		10.00		97.7	70	130			
Surr: Toluene-d8	10		10.00		103	70	130			

Sample ID: **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW** Batch ID: **A88962** RunNo: **88962**
Prep Date: Analysis Date: **6/22/2022** SeqNo: **3159131** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	99.1	70	130			
Toluene	19	1.0	20.00	0	96.7	70	130			
Chlorobenzene	19	1.0	20.00	0	96.4	70	130			
1,1-Dichloroethene	18	1.0	20.00	0	92.4	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	89.4	70	130			
Surr: 1,2-Dichloroethane-d4	9.1		10.00		90.6	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	9.9		10.00		99.2	70	130			
Surr: Toluene-d8	9.6		10.00		96.1	70	130			

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW** Batch ID: **A88962** RunNo: **88962**
Prep Date: Analysis Date: **6/22/2022** SeqNo: **3159170** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206781**
08-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Qtr

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **A88962**	RunNo: **88962**
Prep Date:	Analysis Date: **6/22/2022**	SeqNo: **3159170** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.8		10.00		97.6	70	130			
Surr: 4-Bromofluorobenzene	9.6		10.00		96.0	70	130			
Surr: Dibromofluoromethane	9.9		10.00		98.9	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206781**
08-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Qtr

Sample ID: **mb-68202** SampType: **MBLK** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW** Batch ID: **68202** RunNo: **89133**
Prep Date: **6/17/2022** Analysis Date: **6/29/2022** SeqNo: **3167345** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Anthracene	ND	10								
Benz(a)anthracene	ND	5.0								
Benzo(b)fluoranthene	ND	10								
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	10								
2,4-Dinitrophenol	ND	20								
Fluoranthene	ND	10								
Fluorene	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
1-Methylnaphthalene	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
Naphthalene	ND	5.0								
Phenanthrene	ND	10								
Phenol	ND	20								
Pyrene	ND	10								
Pyridine	ND	40								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	110		200.0		56.8	29.4	87.7			
Surr: Phenol-d5	87		200.0		43.4	28.5	64.7			
Surr: 2,4,6-Tribromophenol	140		200.0		70.7	18.6	129			
Surr: Nitrobenzene-d5	64		100.0		63.8	36.9	103			
Surr: 2-Fluorobiphenyl	72		100.0		71.9	38.1	99.9			
Surr: 4-Terphenyl-d14	89		100.0		88.9	48	155			

Sample ID: **lcs-68202** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW** Batch ID: **68202** RunNo: **89133**
Prep Date: **6/17/2022** Analysis Date: **6/29/2022** SeqNo: **3167346** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206781**

08-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **lcs-68202**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **68202**	RunNo: **89133**
Prep Date: **6/17/2022**	Analysis Date: **6/29/2022**	SeqNo: **3167346** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	74	10	100.0	0	73.9	21.3	104			
1,4-Dichlorobenzene	65	5.0	100.0	0	64.8	15	89.8			
Phenol	90	20	200.0	0	44.8	17	61.1			
Pyrene	91	10	100.0	0	90.7	61	123			
Surr: 2-Fluorophenol	110		200.0		57.1	29.4	87.7			
Surr: Phenol-d5	87		200.0		43.4	28.5	64.7			
Surr: 2,4,6-Tribromophenol	170		200.0		83.6	18.6	129			
Surr: Nitrobenzene-d5	75		100.0		74.6	36.9	103			
Surr: 2-Fluorobiphenyl	80		100.0		80.3	38.1	99.9			
Surr: 4-Terphenyl-d14	98		100.0		97.5	48	155			

Sample ID: **lcsd-68202**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **68202**	RunNo: **89133**
Prep Date: **6/17/2022**	Analysis Date: **6/29/2022**	SeqNo: **3167347** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	50	10	100.0	0	49.9	21.3	104	38.7	45.3	
1,4-Dichlorobenzene	40	5.0	100.0	0	40.1	15	89.8	47.0	39.6	R
Phenol	52	20	200.0	0	26.2	17	61.1	52.4	42.5	R
Pyrene	68	10	100.0	0	67.9	61	123	28.9	11.8	R
Surr: 2-Fluorophenol	66		200.0		33.0	29.4	87.7	0	0	
Surr: Phenol-d5	52		200.0		26.0	28.5	64.7	0	0	S
Surr: 2,4,6-Tribromophenol	130		200.0		66.7	18.6	129	0	0	
Surr: Nitrobenzene-d5	43		100.0		43.1	36.9	103	0	0	
Surr: 2-Fluorobiphenyl	50		100.0		49.9	38.1	99.9	0	0	
Surr: 4-Terphenyl-d14	73		100.0		72.6	48	155	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206781**
08-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Qtr

Sample ID: **mb-68202** SampType: **MBLK** TestCode: **EPA Method 8270SIM**
Client ID: **PBW** Batch ID: **68202** RunNo: **89096**
Prep Date: **6/17/2022** Analysis Date: **6/28/2022** SeqNo: **3165504** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.30								
1-Methylnaphthalene	ND	0.30								
2-Methylnaphthalene	ND	0.30								
Acenaphthene	ND	0.30								
Fluorene	ND	0.30								
Phenanthrene	ND	0.30								
Anthracene	ND	0.30								
Fluoranthene	ND	0.30								
Pyrene	ND	1.0								
Benz(a)anthracene	ND	0.30								
Chrysene	ND	0.30								
Benzo(b)fluoranthene	ND	0.30								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	78		100.0		78.5	31.6	100			
Surr: 2,4,6-Tribromophenol	100		200.0		50.3	22	101			
Surr: 2-Fluorobiphenyl	76		100.0		75.8	26.7	90.1			
Surr: 4-Terphenyl-d14	110		100.0		107	72.3	147			

Sample ID: **lcs-68202 lf** SampType: **LCS** TestCode: **EPA Method 8270SIM**
Client ID: **LCSW** Batch ID: **68202** RunNo: **89096**
Prep Date: **6/17/2022** Analysis Date: **6/28/2022** SeqNo: **3165505** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.78	0.10	2.000	0	39.0	20.2	48.4			
Naphthalene	1.5	0.30	2.000	0	73.0	21.3	79.9			
1-Methylnaphthalene	1.5	0.30	2.000	0	73.0	22.2	80.3			
2-Methylnaphthalene	1.5	0.30	2.000	0	73.0	20.6	80.1			
Acenaphthene	1.5	0.30	2.000	0	77.0	29.8	82.7			
Fluorene	1.6	0.30	2.000	0	81.0	33.3	86			
Phenanthrene	1.7	0.30	2.000	0	84.0	38.2	93.9			
Anthracene	1.8	0.30	2.000	0	90.0	41.1	95.6			
Fluoranthene	2.1	0.30	2.000	0	105	52.9	123			
Pyrene	1.7	1.0	2.000	0	85.0	51	113			
Benz(a)anthracene	2.0	0.30	2.000	0	101	51	147			
Chrysene	1.7	0.30	2.000	0	84.0	55.3	115			
Benzo(b)fluoranthene	1.7	0.30	2.000	0	87.0	44.4	136			
Indeno(1,2,3-cd)pyrene	1.8	0.30	2.000	0	90.0	31.4	165			
Surr: Nitrobenzene-d5	76		100.0		76.3	31.6	100			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206781**

08-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **lcs-68202 lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **68202**	RunNo: **89096**
Prep Date: **6/17/2022**	Analysis Date: **6/28/2022**	SeqNo: **3165505** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	97		200.0		48.4	22	101			
Surr: 2-Fluorobiphenyl	72		100.0		71.9	26.7	90.1			
Surr: 4-Terphenyl-d14	91		100.0		90.6	72.3	147			

Sample ID: **lcsd-68202 lf**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02**	Batch ID: **68202**	RunNo: **89096**
Prep Date: **6/17/2022**	Analysis Date: **6/28/2022**	SeqNo: **3165506** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.80	0.10	2.000	0	40.0	20.2	48.4	2.53	30.1	
Naphthalene	1.4	0.30	2.000	0	71.0	21.3	79.9	2.78	25.6	
1-Methylnaphthalene	1.4	0.30	2.000	0	72.0	22.2	80.3	1.38	25	
2-Methylnaphthalene	1.4	0.30	2.000	0	71.0	20.6	80.1	2.78	25	
Acenaphthene	1.5	0.30	2.000	0	77.0	29.8	82.7	0	27.8	
Fluorene	1.6	0.30	2.000	0	81.0	33.3	86	0	26.4	
Phenanthrene	1.7	0.30	2.000	0	84.0	38.2	93.9	0	27.9	
Anthracene	1.8	0.30	2.000	0	90.0	41.1	95.6	0	25.6	
Fluoranthene	2.1	0.30	2.000	0	103	52.9	123	1.92	22.8	
Pyrene	1.7	1.0	2.000	0	85.0	51	113	0	20	
Benz(a)anthracene	2.0	0.30	2.000	0	101	51	147	0	24.1	
Chrysene	1.7	0.30	2.000	0	84.0	55.3	115	0	20	
Benzo(b)fluoranthene	1.7	0.30	2.000	0	87.0	44.4	136	0	24.5	
Indeno(1,2,3-cd)pyrene	1.7	0.30	2.000	0	85.0	31.4	165	5.71	21.1	
Surr: Nitrobenzene-d5	79		100.0		78.7	31.6	100	0	0	
Surr: 2,4,6-Tribromophenol	97		200.0		48.6	22	101	0	0	
Surr: 2-Fluorobiphenyl	74		100.0		73.7	26.7	90.1	0	0	
Surr: 4-Terphenyl-d14	93		100.0		93.1	72.3	147	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **Marathon** Work Order Number: **2206781** RcptNo: **1**

Received By: **Cheyenne Cason** **6/15/2022 7:00:00 AM**

Completed By: **Cheyenne Cason** **6/15/2022 8:12:37 AM**

Reviewed By: SGC 6/15/22

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☑ No ☐ NA ☐
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: 12 6 (<2 or >12 unless noted)

Adjusted? NO

Checked by: YM 6/15/22

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.8	Good	Yes			
2	3.1	Good	Yes			
3	0.8	Good	Yes			

Released to Imaging: 4/21/2023 9:40:26 AM

Received by OCD: 4/21/2023 9:21:57 AM

Chain of Custody Record

Client: Marathon Gallup Refinery

Mailing Address: 92 Giant Crossing Road
Jamestown, NM,87347

Phone #: 808-640-1823

Email or Fax#:

QA/QC Package:
X Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

X EDD (Type)

X Standard Rush

Project Name:
2022 GW Sampling 2nd Quarter

Project #: **697-080-001**

Project Manager:
Lesli Alexander/Mackensie Swift

Sampler:

On Ice: ☑ Yes ☐ No

# of Coolers: 3

Cooler Temp(including CF): See Remarks

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2206781
6/14	8:00		EB-6.14.22	14		001
6/14	8:30		PW-3	14		002
6/14	9:00		PW-3-4 per Brian email dislike	14		003
6/14	9:40		EAST LDU	14		004
6/14	10:15		WEST LDU	14		005
6/14	10:15		FB-6.14.22	3		006
6/14	—		Dup-6.14.22	14		007
			Trip Blank			008

Analysis Request

See Analyte List	8260B: VOC	8270C: SVOC	8270C SIM: PAH, 1,4 Dioxane	8015: TPH GRO/DRO/MRO	E200.7: Metals	E200.7: Dissolved Metals	E245.1 Mercury	E504.1: EDB	E335.4: Cyanide Subbed		537.1: PFAS	SM 5201B: BOD	410.4: COD	SM9223B E. Coli
X	X	X	X	X	X	X	X	X	X					
X	X	X	X	X	X	X	X	X	X					
X	X	X	X	X	X	X	X	X	X					
X	X	X	X	X	X	X	X	X	X					
X	X	X	X	X	X	X	X	X	X					
	X	X												
X	X	X	X	X	X	X	X	X	X					

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
6/14	11:30	Hilario Trejo	Anne Comer		6/15/22	0700
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

WEST LDU and LDU WEST on Lables are the same well. WEST LDU
4.8-0=4.8
3.1-0=3.1
0.8-0=0.8

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

August 15, 2022

Lesli Alexander

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX (505) 632-3911

RE: 2022 GW Sampling 2nd Qtr OrderNo.: 2206866

Dear Lesli Alexander:

Hall Environmental Analysis Laboratory received 10 sample(s) on 6/16/2022 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued July 08, 2022.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **2206866**
Date: **8/15/2022**

CLIENT: Marathon
Project: 2022 GW Sampling 2nd Qtr

Analytical notes Regarding EPA Method 8270:
Sample OW-59 had poor surrogate recoveries due to the emulsive nature of the sample.

Analytical Notes Regarding EPA Method 8270:
Naphthalene, 1-methylnaphthalene and 2-methylnaphthalene may be reported by either EPA Method 8270 or EPA Method 8270SIMS, depending which method needs the least dilution. In this report Naphthalene, 1-methylnaphthalene and 2-methylnaphthalene were reported by EPA Method 8270 instead of EPA Method 8270SIMS for samples OW-66 and OW-55.

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-15-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 8:15:00 AM
Lab ID: 2206866-001A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	6/23/2022 3:53:30 PM	G88994
Surr: BFB	99.2	0	70-130		%Rec	1	6/23/2022 3:53:30 PM	G88994
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	6/25/2022 7:01:00 PM	R89027
Toluene	ND	0.20	1.0		µg/L	1	6/25/2022 7:01:00 PM	R89027
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/25/2022 7:01:00 PM	R89027
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	6/25/2022 7:01:00 PM	R89027
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/25/2022 7:01:00 PM	R89027
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/25/2022 7:01:00 PM	R89027
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/25/2022 7:01:00 PM	R89027
Acetone	3.4	2.5	10	J	µg/L	1	6/25/2022 7:01:00 PM	R89027
Bromomethane	ND	0.85	3.0		µg/L	1	6/25/2022 7:01:00 PM	R89027
2-Butanone	ND	2.0	10		µg/L	1	6/25/2022 7:01:00 PM	R89027
Carbon disulfide	ND	0.59	10		µg/L	1	6/25/2022 7:01:00 PM	R89027
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/25/2022 7:01:00 PM	R89027
Chloroform	ND	0.13	1.0		µg/L	1	6/25/2022 7:01:00 PM	R89027
Chloromethane	ND	0.41	3.0		µg/L	1	6/25/2022 7:01:00 PM	R89027
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/25/2022 7:01:00 PM	R89027
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/25/2022 7:01:00 PM	R89027
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/25/2022 7:01:00 PM	R89027
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/25/2022 7:01:00 PM	R89027
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/25/2022 7:01:00 PM	R89027
Methylene Chloride	8.5	5.0	30	J	µg/L	10	6/27/2022 3:24:00 PM	W89041
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/25/2022 7:01:00 PM	R89027
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/25/2022 7:01:00 PM	R89027
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	6/25/2022 7:01:00 PM	R89027
Styrene	ND	0.14	1.0		µg/L	1	6/25/2022 7:01:00 PM	R89027
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/25/2022 7:01:00 PM	R89027
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/25/2022 7:01:00 PM	R89027
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/25/2022 7:01:00 PM	R89027
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/25/2022 7:01:00 PM	R89027
Xylenes, Total	ND	0.37	1.5		µg/L	1	6/25/2022 7:01:00 PM	R89027
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%Rec	1	6/25/2022 7:01:00 PM	R89027
Surr: 4-Bromofluorobenzene	93.3	0	70-130		%Rec	1	6/25/2022 7:01:00 PM	R89027
Surr: Dibromofluoromethane	95.4	0	70-130		%Rec	1	6/25/2022 7:01:00 PM	R89027
Surr: Toluene-d8	85.0	0	70-130		%Rec	1	6/25/2022 7:01:00 PM	R89027

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-15-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 8:15:00 AM
Lab ID: 2206866-001B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	6/21/2022 6:05:33 AM	68190

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-15-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 8:15:00 AM
Lab ID: 2206866-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **ED**	
Diesel Range Organics (DRO)	0.019	0.016	0.064	J	mg/L	1	6/29/2022 12:54:36 AM	68185
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	6/29/2022 12:54:36 AM	68185
Surr: DNOP	95.8	0	42.2-138		%Rec	1	6/29/2022 12:54:36 AM	68185
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	6/29/2022 5:47:33 PM	68202
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	6/29/2022 5:47:33 PM	68202
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	6/29/2022 5:47:33 PM	68202
Di-n-octyl phthalate	ND	12	20		µg/L	1	6/29/2022 5:47:33 PM	68202
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	6/29/2022 5:47:33 PM	68202
Diethyl phthalate	ND	6.0	10		µg/L	1	6/29/2022 5:47:33 PM	68202
Dimethyl phthalate	ND	6.0	10		µg/L	1	6/29/2022 5:47:33 PM	68202
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	6/29/2022 5:47:33 PM	68202
2,4-Dinitrophenol	ND	16	20		µg/L	1	6/29/2022 5:47:33 PM	68202
2-Methylphenol	ND	5.0	10		µg/L	1	6/29/2022 5:47:33 PM	68202
3+4-Methylphenol	ND	5.1	10		µg/L	1	6/29/2022 5:47:33 PM	68202
Phenol	ND	18	20		µg/L	1	6/29/2022 5:47:33 PM	68202
Pyridine	ND	14	40		µg/L	1	6/29/2022 5:47:33 PM	68202
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	6/29/2022 5:47:33 PM	68202
Surr: 2-Fluorophenol	52.0	0	29.4-87.7		%Rec	1	6/29/2022 5:47:33 PM	68202
Surr: Phenol-d5	37.8	0	28.5-64.7		%Rec	1	6/29/2022 5:47:33 PM	68202
Surr: 2,4,6-Tribromophenol	71.5	0	18.6-129		%Rec	1	6/29/2022 5:47:33 PM	68202
Surr: Nitrobenzene-d5	64.0	0	36.9-103		%Rec	1	6/29/2022 5:47:33 PM	68202
Surr: 2-Fluorobiphenyl	68.5	0	38.1-99.9		%Rec	1	6/29/2022 5:47:33 PM	68202
Surr: 4-Terphenyl-d14	76.6	0	48-155		%Rec	1	6/29/2022 5:47:33 PM	68202
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	6/28/2022 5:06:00 PM	68202
Naphthalene	ND	0.20	0.30		µg/L	1	6/28/2022 5:06:00 PM	68202
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	6/28/2022 5:06:00 PM	68202
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	6/28/2022 5:06:00 PM	68202
Acenaphthene	ND	0.14	0.30		µg/L	1	6/28/2022 5:06:00 PM	68202
Fluorene	ND	0.095	0.30		µg/L	1	6/28/2022 5:06:00 PM	68202
Phenanthrene	ND	0.16	0.30		µg/L	1	6/28/2022 5:06:00 PM	68202
Anthracene	ND	0.14	0.30		µg/L	1	6/28/2022 5:06:00 PM	68202
Fluoranthene	ND	0.14	0.30		µg/L	1	6/28/2022 5:06:00 PM	68202
Pyrene	ND	0.32	1.0		µg/L	1	6/28/2022 5:06:00 PM	68202
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	6/28/2022 5:06:00 PM	68202
Chrysene	ND	0.25	0.30		µg/L	1	6/28/2022 5:06:00 PM	68202
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	6/28/2022 5:06:00 PM	68202
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	6/28/2022 5:06:00 PM	68202

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-15-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 8:15:00 AM
Lab ID: 2206866-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	74.8	0	31.6-100		%Rec	1	6/28/2022 5:06:00 PM	68202
Surr: 2-Fluorobiphenyl	67.2	0	26.7-90.1		%Rec	1	6/28/2022 5:06:00 PM	68202
Surr: 4-Terphenyl-d14	89.0	0	72.3-147		%Rec	1	6/28/2022 5:06:00 PM	68202

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-15-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 8:15:00 AM
Lab ID: 2206866-001D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	ND	0.0016	0.0030		mg/L	1	6/20/2022 2:53:31 PM	68172
Beryllium	ND	0.00088	0.0020		mg/L	1	6/20/2022 2:53:31 PM	68172
Cadmium	ND	0.0018	0.0020		mg/L	1	6/20/2022 2:53:31 PM	68172
Chromium	ND	0.0020	0.0060		mg/L	1	6/20/2022 2:53:31 PM	68172
Cobalt	ND	0.0035	0.0060		mg/L	1	6/20/2022 2:53:31 PM	68172
Nickel	ND	0.0053	0.010		mg/L	1	6/20/2022 2:53:31 PM	68172
Silver	ND	0.0018	0.0050		mg/L	1	6/20/2022 2:53:31 PM	68172
Vanadium	ND	0.0035	0.050		mg/L	1	6/20/2022 2:53:31 PM	68172
Zinc	ND	0.0039	0.010		mg/L	1	6/20/2022 2:53:31 PM	68172
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/20/2022 2:17:21 PM	68172
Arsenic	ND	0.00013	0.0010		mg/L	1	6/20/2022 2:17:21 PM	68172
Lead	ND	0.000061	0.00050		mg/L	1	6/20/2022 2:17:21 PM	68172
Selenium	ND	0.00037	0.0010		mg/L	1	6/20/2022 2:17:21 PM	68172
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/20/2022 11:38:12 AM	68219

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-15-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 8:15:00 AM
Lab ID: 2206866-001E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	ND	0.0011	0.0020		mg/L	1	6/20/2022 5:47:00 PM	B88897
Beryllium	ND	0.00088	0.0020		mg/L	1	6/20/2022 5:47:00 PM	B88897
Cadmium	ND	0.00098	0.0020		mg/L	1	6/20/2022 5:47:00 PM	B88897
Chromium	ND	0.0020	0.0060		mg/L	1	6/20/2022 5:47:00 PM	B88897
Cobalt	ND	0.0024	0.0060		mg/L	1	6/20/2022 5:47:00 PM	B88897
Nickel	ND	0.0033	0.010		mg/L	1	6/20/2022 5:47:00 PM	B88897
Silver	ND	0.0013	0.0050		mg/L	1	6/20/2022 5:47:00 PM	B88897
Vanadium	ND	0.0017	0.050		mg/L	1	6/20/2022 5:47:00 PM	B88897
Zinc	0.0054	0.0032	0.010	J	mg/L	1	6/20/2022 5:47:00 PM	B88897
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/21/2022 11:47:41 AM	B88918
Arsenic	ND	0.00012	0.0010		mg/L	1	6/21/2022 11:47:41 AM	B88918
Lead	ND	0.000057	0.00050		mg/L	1	6/21/2022 11:47:41 AM	B88918
Selenium	ND	0.00034	0.0010		mg/L	1	6/21/2022 11:47:41 AM	B88918
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/20/2022 11:40:20 AM	68219

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-15-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 8:15:00 AM
Lab ID: 2206866-001F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PAC**	
Cyanide	ND	0.00500	0.00500		mg/L	1	6/28/2022 11:18:00 AM	R89389

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-1
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 8:25:00 AM
Lab ID: 2206866-002A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	6/23/2022 4:17:21 PM	G88994
Surr: BFB	95.4	0	70-130		%Rec	1	6/23/2022 4:17:21 PM	G88994
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	6/25/2022 8:10:00 PM	R89027
Toluene	ND	0.20	1.0		µg/L	1	6/25/2022 8:10:00 PM	R89027
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/25/2022 8:10:00 PM	R89027
Methyl tert-butyl ether (MTBE)	1.9	0.39	1.0		µg/L	1	6/25/2022 8:10:00 PM	R89027
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/25/2022 8:10:00 PM	R89027
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/25/2022 8:10:00 PM	R89027
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/25/2022 8:10:00 PM	R89027
Acetone	ND	2.5	10		µg/L	1	6/25/2022 8:10:00 PM	R89027
Bromomethane	ND	0.85	3.0		µg/L	1	6/25/2022 8:10:00 PM	R89027
2-Butanone	ND	2.0	10		µg/L	1	6/25/2022 8:10:00 PM	R89027
Carbon disulfide	ND	0.59	10		µg/L	1	6/25/2022 8:10:00 PM	R89027
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/25/2022 8:10:00 PM	R89027
Chloroform	ND	0.13	1.0		µg/L	1	6/25/2022 8:10:00 PM	R89027
Chloromethane	ND	0.41	3.0		µg/L	1	6/25/2022 8:10:00 PM	R89027
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/25/2022 8:10:00 PM	R89027
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/25/2022 8:10:00 PM	R89027
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/25/2022 8:10:00 PM	R89027
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/25/2022 8:10:00 PM	R89027
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/25/2022 8:10:00 PM	R89027
Methylene Chloride	ND	0.50	3.0		µg/L	1	6/25/2022 8:10:00 PM	R89027
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/25/2022 8:10:00 PM	R89027
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/25/2022 8:10:00 PM	R89027
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	6/25/2022 8:10:00 PM	R89027
Styrene	ND	0.14	1.0		µg/L	1	6/25/2022 8:10:00 PM	R89027
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/25/2022 8:10:00 PM	R89027
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/25/2022 8:10:00 PM	R89027
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/25/2022 8:10:00 PM	R89027
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/25/2022 8:10:00 PM	R89027
Xylenes, Total	ND	0.37	1.5		µg/L	1	6/25/2022 8:10:00 PM	R89027
Surr: 1,2-Dichloroethane-d4	92.3	0	70-130		%Rec	1	6/25/2022 8:10:00 PM	R89027
Surr: 4-Bromofluorobenzene	86.3	0	70-130		%Rec	1	6/25/2022 8:10:00 PM	R89027
Surr: Dibromofluoromethane	100	0	70-130		%Rec	1	6/25/2022 8:10:00 PM	R89027
Surr: Toluene-d8	101	0	70-130		%Rec	1	6/25/2022 8:10:00 PM	R89027

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-1
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 8:25:00 AM
Lab ID: 2206866-002B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	6/21/2022 6:35:35 AM	68190

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-1
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 8:25:00 AM
Lab ID: 2206866-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **ED**	
Diesel Range Organics (DRO)	0.027	0.016	0.064	J	mg/L	1	6/29/2022 1:18:22 AM	68185
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	6/29/2022 1:18:22 AM	68185
Surr: DNOP	80.5	0	42.2-138		%Rec	1	6/29/2022 1:18:22 AM	68185
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	6/29/2022 6:31:36 PM	68202
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	6/29/2022 6:31:36 PM	68202
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	6/29/2022 6:31:36 PM	68202
Di-n-octyl phthalate	ND	12	20		µg/L	1	6/29/2022 6:31:36 PM	68202
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	6/29/2022 6:31:36 PM	68202
Diethyl phthalate	ND	6.0	10		µg/L	1	6/29/2022 6:31:36 PM	68202
Dimethyl phthalate	ND	6.0	10		µg/L	1	6/29/2022 6:31:36 PM	68202
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	6/29/2022 6:31:36 PM	68202
2,4-Dinitrophenol	ND	16	20		µg/L	1	6/29/2022 6:31:36 PM	68202
2-Methylphenol	ND	5.0	10		µg/L	1	6/29/2022 6:31:36 PM	68202
3+4-Methylphenol	ND	5.1	10		µg/L	1	6/29/2022 6:31:36 PM	68202
Phenol	ND	18	20		µg/L	1	6/29/2022 6:31:36 PM	68202
Pyridine	ND	14	40		µg/L	1	6/29/2022 6:31:36 PM	68202
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	6/29/2022 6:31:36 PM	68202
Surr: 2-Fluorophenol	61.8	0	29.4-87.7		%Rec	1	6/29/2022 6:31:36 PM	68202
Surr: Phenol-d5	44.5	0	28.5-64.7		%Rec	1	6/29/2022 6:31:36 PM	68202
Surr: 2,4,6-Tribromophenol	81.0	0	18.6-129		%Rec	1	6/29/2022 6:31:36 PM	68202
Surr: Nitrobenzene-d5	69.4	0	36.9-103		%Rec	1	6/29/2022 6:31:36 PM	68202
Surr: 2-Fluorobiphenyl	72.3	0	38.1-99.9		%Rec	1	6/29/2022 6:31:36 PM	68202
Surr: 4-Terphenyl-d14	85.7	0	48-155		%Rec	1	6/29/2022 6:31:36 PM	68202
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	0.26	0.11	1.0	J	µg/L	1	6/28/2022 5:51:00 PM	68202
Naphthalene	ND	0.20	0.30		µg/L	1	6/28/2022 5:51:00 PM	68202
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	6/28/2022 5:51:00 PM	68202
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	6/28/2022 5:51:00 PM	68202
Acenaphthene	ND	0.14	0.30		µg/L	1	6/28/2022 5:51:00 PM	68202
Fluorene	ND	0.095	0.30		µg/L	1	6/28/2022 5:51:00 PM	68202
Phenanthrene	ND	0.16	0.30		µg/L	1	6/28/2022 5:51:00 PM	68202
Anthracene	ND	0.14	0.30		µg/L	1	6/28/2022 5:51:00 PM	68202
Fluoranthene	ND	0.14	0.30		µg/L	1	6/28/2022 5:51:00 PM	68202
Pyrene	ND	0.32	1.0		µg/L	1	6/28/2022 5:51:00 PM	68202
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	6/28/2022 5:51:00 PM	68202
Chrysene	ND	0.25	0.30		µg/L	1	6/28/2022 5:51:00 PM	68202
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	6/28/2022 5:51:00 PM	68202
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	6/28/2022 5:51:00 PM	68202

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-1
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 8:25:00 AM
Lab ID: 2206866-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	82.0	0	31.6-100		%Rec	1	6/28/2022 5:51:00 PM	68202
Surr: 2-Fluorobiphenyl	75.3	0	26.7-90.1		%Rec	1	6/28/2022 5:51:00 PM	68202
Surr: 4-Terphenyl-d14	93.7	0	72.3-147		%Rec	1	6/28/2022 5:51:00 PM	68202

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-1
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 8:25:00 AM
Lab ID: 2206866-002D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	0.044	0.0016	0.0030		mg/L	1	6/20/2022 2:55:08 PM	68172
Beryllium	ND	0.00088	0.0020		mg/L	1	6/20/2022 2:55:08 PM	68172
Cadmium	ND	0.0018	0.0020		mg/L	1	6/20/2022 2:55:08 PM	68172
Chromium	0.0045	0.0020	0.0060	J	mg/L	1	6/20/2022 2:55:08 PM	68172
Cobalt	ND	0.0035	0.0060		mg/L	1	6/20/2022 2:55:08 PM	68172
Nickel	ND	0.0053	0.010		mg/L	1	6/20/2022 2:55:08 PM	68172
Silver	ND	0.0018	0.0050		mg/L	1	6/20/2022 2:55:08 PM	68172
Vanadium	0.043	0.0035	0.050	J	mg/L	1	6/20/2022 2:55:08 PM	68172
Zinc	ND	0.0039	0.010		mg/L	1	6/20/2022 2:55:08 PM	68172
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/20/2022 4:48:01 PM	68172
Arsenic	0.00078	0.00013	0.0010	J	mg/L	1	6/20/2022 4:48:01 PM	68172
Lead	0.00025	0.000061	0.00050	J	mg/L	1	6/20/2022 4:48:01 PM	68172
Selenium	0.0026	0.00037	0.0010		mg/L	1	6/20/2022 4:48:01 PM	68172
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/20/2022 11:42:29 AM	68219

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-1
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 8:25:00 AM
Lab ID: 2206866-002E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.037	0.0011	0.0020		mg/L	1	6/20/2022 6:05:52 PM	B88897
Beryllium	ND	0.00088	0.0020		mg/L	1	6/20/2022 6:05:52 PM	B88897
Cadmium	ND	0.00098	0.0020		mg/L	1	6/20/2022 6:05:52 PM	B88897
Chromium	ND	0.0020	0.0060		mg/L	1	6/20/2022 6:05:52 PM	B88897
Cobalt	ND	0.0024	0.0060		mg/L	1	6/20/2022 6:05:52 PM	B88897
Nickel	ND	0.0033	0.010		mg/L	1	6/20/2022 6:05:52 PM	B88897
Silver	ND	0.0013	0.0050		mg/L	1	6/20/2022 6:05:52 PM	B88897
Vanadium	0.039	0.0017	0.050	J	mg/L	1	6/20/2022 6:05:52 PM	B88897
Zinc	0.048	0.0032	0.010		mg/L	1	6/20/2022 6:05:52 PM	B88897
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/21/2022 11:50:22 AM	B88918
Arsenic	0.00070	0.00012	0.0010	J	mg/L	1	6/21/2022 11:50:22 AM	B88918
Lead	ND	0.000057	0.00050		mg/L	1	6/21/2022 11:50:22 AM	B88918
Selenium	0.0021	0.00034	0.0010		mg/L	1	6/21/2022 11:50:22 AM	B88918
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/20/2022 11:44:38 AM	68219

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-1
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 8:25:00 AM
Lab ID: 2206866-002F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PAC**	
Cyanide	ND	0.00500	0.00500		mg/L	1	6/28/2022 11:21:00 AM	R89389

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-54
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 9:10:00 AM
Lab ID: 2206866-003A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	1.7	0.045	0.25		mg/L	5	6/23/2022 4:41:17 PM	G88994
Surr: BFB	99.9	0	70-130		%Rec	5	6/23/2022 4:41:17 PM	G88994
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	6.3	1.1	5.0		µg/L	5	6/25/2022 8:56:00 PM	R89027
Toluene	ND	1.0	5.0		µg/L	5	6/25/2022 8:56:00 PM	R89027
Ethylbenzene	5.8	1.1	5.0		µg/L	5	6/25/2022 8:56:00 PM	R89027
Methyl tert-butyl ether (MTBE)	1300	20	50		µg/L	50	6/25/2022 8:33:00 PM	R89027
1,2,4-Trimethylbenzene	2.4	0.61	5.0	J	µg/L	5	6/25/2022 8:56:00 PM	R89027
1,3,5-Trimethylbenzene	ND	0.91	5.0		µg/L	5	6/25/2022 8:56:00 PM	R89027
1,2-Dichloroethane (EDC)	ND	1.3	5.0		µg/L	5	6/25/2022 8:56:00 PM	R89027
Acetone	ND	13	50		µg/L	5	6/25/2022 8:56:00 PM	R89027
Bromomethane	ND	4.3	15		µg/L	5	6/25/2022 8:56:00 PM	R89027
2-Butanone	ND	10	50		µg/L	5	6/25/2022 8:56:00 PM	R89027
Carbon disulfide	ND	3.0	50		µg/L	5	6/25/2022 8:56:00 PM	R89027
Chlorobenzene	ND	0.78	5.0		µg/L	5	6/25/2022 8:56:00 PM	R89027
Chloroform	ND	0.67	5.0		µg/L	5	6/25/2022 8:56:00 PM	R89027
Chloromethane	ND	2.1	15		µg/L	5	6/25/2022 8:56:00 PM	R89027
cis-1,2-DCE	ND	1.9	5.0		µg/L	5	6/25/2022 8:56:00 PM	R89027
1,1-Dichloroethane	ND	1.4	5.0		µg/L	5	6/25/2022 8:56:00 PM	R89027
1,1-Dichloroethene	ND	1.0	5.0		µg/L	5	6/25/2022 8:56:00 PM	R89027
Isopropylbenzene	ND	0.91	5.0		µg/L	5	6/25/2022 8:56:00 PM	R89027
4-Isopropyltoluene	ND	1.0	5.0		µg/L	5	6/25/2022 8:56:00 PM	R89027
Methylene Chloride	ND	2.5	15		µg/L	5	6/25/2022 8:56:00 PM	R89027
n-Butylbenzene	ND	1.3	15		µg/L	5	6/25/2022 8:56:00 PM	R89027
n-Propylbenzene	ND	0.91	5.0		µg/L	5	6/25/2022 8:56:00 PM	R89027
sec-Butylbenzene	ND	0.72	5.0		µg/L	5	6/25/2022 8:56:00 PM	R89027
Styrene	ND	0.68	5.0		µg/L	5	6/25/2022 8:56:00 PM	R89027
Tetrachloroethene (PCE)	ND	1.8	5.0		µg/L	5	6/25/2022 8:56:00 PM	R89027
1,1,1-Trichloroethane	ND	1.5	5.0		µg/L	5	6/25/2022 8:56:00 PM	R89027
Trichloroethene (TCE)	ND	1.0	5.0		µg/L	5	6/25/2022 8:56:00 PM	R89027
Vinyl chloride	ND	1.6	5.0		µg/L	5	6/25/2022 8:56:00 PM	R89027
Xylenes, Total	2.2	1.9	7.5	J	µg/L	5	6/25/2022 8:56:00 PM	R89027
Surr: 1,2-Dichloroethane-d4	87.2	0	70-130		%Rec	5	6/25/2022 8:56:00 PM	R89027
Surr: 4-Bromofluorobenzene	78.9	0	70-130		%Rec	5	6/25/2022 8:56:00 PM	R89027
Surr: Dibromofluoromethane	95.4	0	70-130		%Rec	5	6/25/2022 8:56:00 PM	R89027
Surr: Toluene-d8	118	0	70-130		%Rec	5	6/25/2022 8:56:00 PM	R89027

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-54
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 9:10:00 AM
Lab ID: 2206866-003B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	6/21/2022 7:11:53 AM	68190

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-54
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 9:10:00 AM
Lab ID: 2206866-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **ED**	
Diesel Range Organics (DRO)	2.2	0.016	0.064		mg/L	1	6/29/2022 1:42:06 AM	68185
Motor Oil Range Organics (MRO)	1.1	0.052	0.080		mg/L	1	6/29/2022 1:42:06 AM	68185
Surr: DNOP	73.5	0	42.2-138		%Rec	1	6/29/2022 1:42:06 AM	68185
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	6/29/2022 7:15:03 PM	68202
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	6/29/2022 7:15:03 PM	68202
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	6/29/2022 7:15:03 PM	68202
Di-n-octyl phthalate	ND	12	20		µg/L	1	6/29/2022 7:15:03 PM	68202
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	6/29/2022 7:15:03 PM	68202
Diethyl phthalate	ND	6.0	10		µg/L	1	6/29/2022 7:15:03 PM	68202
Dimethyl phthalate	ND	6.0	10		µg/L	1	6/29/2022 7:15:03 PM	68202
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	6/29/2022 7:15:03 PM	68202
2,4-Dinitrophenol	ND	16	20		µg/L	1	6/29/2022 7:15:03 PM	68202
2-Methylphenol	ND	5.0	10		µg/L	1	6/29/2022 7:15:03 PM	68202
3+4-Methylphenol	ND	5.1	10		µg/L	1	6/29/2022 7:15:03 PM	68202
Phenol	ND	18	20		µg/L	1	6/29/2022 7:15:03 PM	68202
Pyridine	ND	14	40		µg/L	1	6/29/2022 7:15:03 PM	68202
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	6/29/2022 7:15:03 PM	68202
Surr: 2-Fluorophenol	47.9	0	29.4-87.7		%Rec	1	6/29/2022 7:15:03 PM	68202
Surr: Phenol-d5	37.5	0	28.5-64.7		%Rec	1	6/29/2022 7:15:03 PM	68202
Surr: 2,4,6-Tribromophenol	76.0	0	18.6-129		%Rec	1	6/29/2022 7:15:03 PM	68202
Surr: Nitrobenzene-d5	60.5	0	36.9-103		%Rec	1	6/29/2022 7:15:03 PM	68202
Surr: 2-Fluorobiphenyl	64.8	0	38.1-99.9		%Rec	1	6/29/2022 7:15:03 PM	68202
Surr: 4-Terphenyl-d14	80.5	0	48-155		%Rec	1	6/29/2022 7:15:03 PM	68202
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	6/28/2022 6:39:00 PM	68202
Naphthalene	0.20	0.20	0.30	J	µg/L	1	6/28/2022 6:39:00 PM	68202
1-Methylnaphthalene	0.24	0.15	0.30	J	µg/L	1	6/28/2022 6:39:00 PM	68202
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	6/28/2022 6:39:00 PM	68202
Acenaphthene	ND	0.14	0.30		µg/L	1	6/28/2022 6:39:00 PM	68202
Fluorene	ND	0.095	0.30		µg/L	1	6/28/2022 6:39:00 PM	68202
Phenanthrene	ND	0.16	0.30		µg/L	1	6/28/2022 6:39:00 PM	68202
Anthracene	ND	0.14	0.30		µg/L	1	6/28/2022 6:39:00 PM	68202
Fluoranthene	ND	0.14	0.30		µg/L	1	6/28/2022 6:39:00 PM	68202
Pyrene	ND	0.32	1.0		µg/L	1	6/28/2022 6:39:00 PM	68202
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	6/28/2022 6:39:00 PM	68202
Chrysene	ND	0.25	0.30		µg/L	1	6/28/2022 6:39:00 PM	68202
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	6/28/2022 6:39:00 PM	68202
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	6/28/2022 6:39:00 PM	68202

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-54
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 9:10:00 AM
Lab ID: 2206866-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	70.5	0	31.6-100		%Rec	1	6/28/2022 6:39:00 PM	68202
Surr: 2-Fluorobiphenyl	59.9	0	26.7-90.1		%Rec	1	6/28/2022 6:39:00 PM	68202
Surr: 4-Terphenyl-d14	70.2	0	72.3-147	S	%Rec	1	6/28/2022 6:39:00 PM	68202

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-54
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 9:10:00 AM
Lab ID: 2206866-003D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	0.47	0.0016	0.0030		mg/L	1	6/20/2022 2:56:31 PM	68172
Beryllium	ND	0.00088	0.0020		mg/L	1	6/20/2022 2:56:31 PM	68172
Cadmium	ND	0.0018	0.0020		mg/L	1	6/20/2022 2:56:31 PM	68172
Chromium	0.0059	0.0020	0.0060	J	mg/L	1	6/20/2022 2:56:31 PM	68172
Cobalt	0.095	0.0035	0.0060		mg/L	1	6/20/2022 2:56:31 PM	68172
Nickel	0.25	0.0053	0.010	*	mg/L	1	6/20/2022 2:56:31 PM	68172
Silver	ND	0.0018	0.0050		mg/L	1	6/20/2022 2:56:31 PM	68172
Vanadium	0.016	0.0035	0.050	J	mg/L	1	6/20/2022 2:56:31 PM	68172
Zinc	0.029	0.0039	0.010		mg/L	1	6/23/2022 4:30:35 PM	68172
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/20/2022 4:52:57 PM	68172
Arsenic	0.0051	0.00063	0.0050		mg/L	5	6/20/2022 6:28:18 PM	68172
Lead	0.019	0.000061	0.00050	*	mg/L	1	6/20/2022 4:52:57 PM	68172
Selenium	ND	0.0019	0.0050		mg/L	5	6/20/2022 6:28:18 PM	68172
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/20/2022 11:46:47 AM	68219

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-54
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 9:10:00 AM
Lab ID: 2206866-003E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.16	0.0011	0.0020		mg/L	1	6/20/2022 6:08:05 PM	B88897
Beryllium	ND	0.00088	0.0020		mg/L	1	6/20/2022 6:08:05 PM	B88897
Cadmium	ND	0.00098	0.0020		mg/L	1	6/20/2022 6:08:05 PM	B88897
Chromium	ND	0.0020	0.0060		mg/L	1	6/20/2022 6:08:05 PM	B88897
Cobalt	0.067	0.0024	0.0060		mg/L	1	6/20/2022 6:08:05 PM	B88897
Nickel	0.23	0.0033	0.010	*	mg/L	1	6/20/2022 6:08:05 PM	B88897
Silver	0.0013	0.0013	0.0050	J	mg/L	1	6/20/2022 6:08:05 PM	B88897
Vanadium	ND	0.0017	0.050		mg/L	1	6/20/2022 6:08:05 PM	B88897
Zinc	0.012	0.0032	0.010		mg/L	1	6/20/2022 6:08:05 PM	B88897
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/21/2022 11:53:03 AM	B88918
Arsenic	0.0036	0.00012	0.0010		mg/L	1	6/21/2022 11:53:03 AM	B88918
Lead	0.0078	0.000057	0.00050		mg/L	1	6/21/2022 11:53:03 AM	B88918
Selenium	ND	0.00034	0.0010		mg/L	1	6/21/2022 11:53:03 AM	B88918
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/20/2022 11:48:57 AM	68219

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-54
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 9:10:00 AM
Lab ID: 2206866-003F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PAC**	
Cyanide	0.00561	0.00500	0.00500		mg/L	1	6/28/2022 11:22:00 AM	R89389

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-66
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 9:30:00 AM
Lab ID: 2206866-004A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	85	0.45	2.5		mg/L	50	6/23/2022 5:05:11 PM	G88994
Surr: BFB	104	0	70-130		%Rec	50	6/23/2022 5:05:11 PM	G88994
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	9600	110	500		µg/L	500	6/25/2022 9:42:00 PM	R89027
Toluene	11000	100	500		µg/L	500	6/25/2022 9:42:00 PM	R89027
Ethylbenzene	730	11	50		µg/L	50	6/25/2022 10:05:00 PM	R89027
Methyl tert-butyl ether (MTBE)	570	20	50		µg/L	50	6/25/2022 10:05:00 PM	R89027
1,2,4-Trimethylbenzene	960	6.1	50		µg/L	50	6/25/2022 10:05:00 PM	R89027
1,3,5-Trimethylbenzene	270	9.1	50		µg/L	50	6/25/2022 10:05:00 PM	R89027
1,2-Dichloroethane (EDC)	ND	13	50		µg/L	50	6/25/2022 10:05:00 PM	R89027
Acetone	ND	130	500		µg/L	50	6/25/2022 10:05:00 PM	R89027
Bromomethane	ND	43	150		µg/L	50	6/25/2022 10:05:00 PM	R89027
2-Butanone	ND	100	500		µg/L	50	6/25/2022 10:05:00 PM	R89027
Carbon disulfide	ND	30	500		µg/L	50	6/25/2022 10:05:00 PM	R89027
Chlorobenzene	ND	7.8	50		µg/L	50	6/25/2022 10:05:00 PM	R89027
Chloroform	ND	6.7	50		µg/L	50	6/25/2022 10:05:00 PM	R89027
Chloromethane	ND	21	150		µg/L	50	6/25/2022 10:05:00 PM	R89027
cis-1,2-DCE	ND	19	50		µg/L	50	6/25/2022 10:05:00 PM	R89027
1,1-Dichloroethane	ND	14	50		µg/L	50	6/25/2022 10:05:00 PM	R89027
1,1-Dichloroethene	ND	10	50		µg/L	50	6/25/2022 10:05:00 PM	R89027
Isopropylbenzene	17	9.1	50	J	µg/L	50	6/25/2022 10:05:00 PM	R89027
4-Isopropyltoluene	12	10	50	J	µg/L	50	6/25/2022 10:05:00 PM	R89027
Methylene Chloride	ND	25	150		µg/L	50	6/25/2022 10:05:00 PM	R89027
n-Butylbenzene	16	13	150	J	µg/L	50	6/25/2022 10:05:00 PM	R89027
n-Propylbenzene	53	9.1	50		µg/L	50	6/25/2022 10:05:00 PM	R89027
sec-Butylbenzene	ND	7.2	50		µg/L	50	6/25/2022 10:05:00 PM	R89027
Styrene	ND	6.8	50		µg/L	50	6/25/2022 10:05:00 PM	R89027
Tetrachloroethene (PCE)	ND	18	50		µg/L	50	6/25/2022 10:05:00 PM	R89027
1,1,1-Trichloroethane	ND	15	50		µg/L	50	6/25/2022 10:05:00 PM	R89027
Trichloroethene (TCE)	ND	10	50		µg/L	50	6/25/2022 10:05:00 PM	R89027
Vinyl chloride	ND	16	50		µg/L	50	6/25/2022 10:05:00 PM	R89027
Xylenes, Total	5800	19	75		µg/L	50	6/25/2022 10:05:00 PM	R89027
Surr: 1,2-Dichloroethane-d4	81.1	0	70-130		%Rec	50	6/25/2022 10:05:00 PM	R89027
Surr: 4-Bromofluorobenzene	89.8	0	70-130		%Rec	50	6/25/2022 10:05:00 PM	R89027
Surr: Dibromofluoromethane	96.0	0	70-130		%Rec	50	6/25/2022 10:05:00 PM	R89027
Surr: Toluene-d8	101	0	70-130		%Rec	50	6/25/2022 10:05:00 PM	R89027

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-66
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 9:30:00 AM
Lab ID: 2206866-004B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	6/21/2022 7:41:52 AM	68190

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-66
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 9:30:00 AM
Lab ID: 2206866-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **ED**	
Diesel Range Organics (DRO)	5.1	0.16	0.64		mg/L	10	6/30/2022 7:16:31 PM	68185
Motor Oil Range Organics (MRO)	ND	0.52	0.80	D	mg/L	10	6/30/2022 7:16:31 PM	68185
Surr: DNOP	0	0	42.2-138	S	%Rec	10	6/30/2022 7:16:31 PM	68185
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	6/29/2022 7:58:55 PM	68202
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	6/29/2022 7:58:55 PM	68202
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	6/29/2022 7:58:55 PM	68202
Di-n-octyl phthalate	ND	12	20		µg/L	1	6/29/2022 7:58:55 PM	68202
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	6/29/2022 7:58:55 PM	68202
Diethyl phthalate	ND	6.0	10		µg/L	1	6/29/2022 7:58:55 PM	68202
Dimethyl phthalate	ND	6.0	10		µg/L	1	6/29/2022 7:58:55 PM	68202
2,4-Dimethylphenol	12	5.8	10		µg/L	1	6/29/2022 7:58:55 PM	68202
2,4-Dinitrophenol	ND	16	20		µg/L	1	6/29/2022 7:58:55 PM	68202
1-Methylnaphthalene	24	4.3	5.0		µg/L	1	6/29/2022 7:58:55 PM	68202
2-Methylnaphthalene	41	4.2	5.0		µg/L	1	6/29/2022 7:58:55 PM	68202
2-Methylphenol	25	5.0	10		µg/L	1	6/29/2022 7:58:55 PM	68202
3+4-Methylphenol	28	5.1	10		µg/L	1	6/29/2022 7:58:55 PM	68202
Naphthalene	130	3.2	5.0		µg/L	1	6/29/2022 7:58:55 PM	68202
Phenol	32	18	20		µg/L	1	6/29/2022 7:58:55 PM	68202
Pyridine	ND	14	40		µg/L	1	6/29/2022 7:58:55 PM	68202
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	6/29/2022 7:58:55 PM	68202
Surr: 2-Fluorophenol	0	0	29.4-87.7	S	%Rec	1	6/29/2022 7:58:55 PM	68202
Surr: Phenol-d5	37.9	0	28.5-64.7		%Rec	1	6/29/2022 7:58:55 PM	68202
Surr: 2,4,6-Tribromophenol	79.7	0	18.6-129		%Rec	1	6/29/2022 7:58:55 PM	68202
Surr: Nitrobenzene-d5	65.0	0	36.9-103		%Rec	1	6/29/2022 7:58:55 PM	68202
Surr: 2-Fluorobiphenyl	68.8	0	38.1-99.9		%Rec	1	6/29/2022 7:58:55 PM	68202
Surr: 4-Terphenyl-d14	80.7	0	48-155		%Rec	1	6/29/2022 7:58:55 PM	68202
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	6/28/2022 7:32:00 PM	68202
Acenaphthene	0.28	0.14	0.30	J	µg/L	1	6/28/2022 7:32:00 PM	68202
Fluorene	0.86	0.095	0.30		µg/L	1	6/28/2022 7:32:00 PM	68202
Phenanthrene	0.94	0.16	0.30		µg/L	1	6/28/2022 7:32:00 PM	68202
Anthracene	ND	0.14	0.30		µg/L	1	6/28/2022 7:32:00 PM	68202
Fluoranthene	ND	0.14	0.30		µg/L	1	6/28/2022 7:32:00 PM	68202
Pyrene	ND	0.32	1.0		µg/L	1	6/28/2022 7:32:00 PM	68202
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	6/28/2022 7:32:00 PM	68202
Chrysene	ND	0.25	0.30		µg/L	1	6/28/2022 7:32:00 PM	68202
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	6/28/2022 7:32:00 PM	68202
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	6/28/2022 7:32:00 PM	68202

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-66
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 9:30:00 AM
Lab ID: 2206866-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	75.6	0	31.6-100		%Rec	1	6/28/2022 7:32:00 PM	68202
Surr: 2-Fluorobiphenyl	61.2	0	26.7-90.1		%Rec	1	6/28/2022 7:32:00 PM	68202
Surr: 4-Terphenyl-d14	71.3	0	72.3-147	S	%Rec	1	6/28/2022 7:32:00 PM	68202

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-66
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 9:30:00 AM
Lab ID: 2206866-004D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	2.0	0.0079	0.015	*	mg/L	5	6/23/2022 4:32:01 PM	68172
Beryllium	ND	0.00088	0.0020		mg/L	1	6/20/2022 2:57:54 PM	68172
Cadmium	ND	0.0018	0.0020		mg/L	1	6/20/2022 2:57:54 PM	68172
Chromium	0.010	0.0020	0.0060		mg/L	1	6/20/2022 2:57:54 PM	68172
Cobalt	0.0096	0.0035	0.0060		mg/L	1	6/20/2022 2:57:54 PM	68172
Nickel	0.36	0.0053	0.010	*	mg/L	1	6/20/2022 2:57:54 PM	68172
Silver	ND	0.0018	0.0050		mg/L	1	6/20/2022 2:57:54 PM	68172
Vanadium	0.026	0.0035	0.050	J	mg/L	1	6/20/2022 2:57:54 PM	68172
Zinc	0.013	0.0039	0.010		mg/L	1	6/21/2022 5:26:13 PM	68172
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/20/2022 4:55:23 PM	68172
Arsenic	0.0070	0.00063	0.0050		mg/L	5	6/20/2022 6:30:44 PM	68172
Lead	0.021	0.00031	0.0025	*	mg/L	5	6/20/2022 6:30:44 PM	68172
Selenium	0.0020	0.0019	0.0050	J	mg/L	5	6/20/2022 6:30:44 PM	68172
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/20/2022 11:51:07 AM	68219

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-66
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 9:30:00 AM
Lab ID: 2206866-004E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	1.4	0.0056	0.010		mg/L	5	6/20/2022 6:21:21 PM	B88897
Beryllium	ND	0.00088	0.0020		mg/L	1	6/20/2022 6:10:27 PM	B88897
Cadmium	ND	0.00098	0.0020		mg/L	1	6/20/2022 6:10:27 PM	B88897
Chromium	ND	0.0020	0.0060		mg/L	1	6/20/2022 6:10:27 PM	B88897
Cobalt	0.0033	0.0024	0.0060	J	mg/L	1	6/20/2022 6:10:27 PM	B88897
Nickel	0.34	0.0033	0.010	*	mg/L	1	6/20/2022 6:10:27 PM	B88897
Silver	ND	0.0013	0.0050		mg/L	1	6/20/2022 6:10:27 PM	B88897
Vanadium	0.0022	0.0017	0.050	J	mg/L	1	6/20/2022 6:10:27 PM	B88897
Zinc	0.016	0.0032	0.010		mg/L	1	6/20/2022 6:10:27 PM	B88897
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/21/2022 11:55:45 AM	B88918
Arsenic	0.0041	0.00012	0.0010		mg/L	1	6/21/2022 11:55:45 AM	B88918
Lead	0.00032	0.000057	0.00050	J	mg/L	1	6/21/2022 11:55:45 AM	B88918
Selenium	0.00038	0.00034	0.0010	J	mg/L	1	6/21/2022 11:55:45 AM	B88918
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/20/2022 11:53:15 AM	68219

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-66
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 9:30:00 AM
Lab ID: 2206866-004F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PAC**	
Cyanide	0.0134	0.00500	0.00500		mg/L	1	6/28/2022 11:23:00 AM	R89389

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-55
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 9:45:00 AM
Lab ID: 2206866-005A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	23	0.45	2.5		mg/L	50	6/23/2022 5:28:52 PM	G88994
Surr: BFB	108	0	70-130		%Rec	50	6/23/2022 5:28:52 PM	G88994
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	5700	110	500		µg/L	500	6/25/2022 10:51:00 PM	R89027
Toluene	150	10	50		µg/L	50	6/25/2022 11:14:00 PM	R89027
Ethylbenzene	430	11	50		µg/L	50	6/25/2022 11:14:00 PM	R89027
Methyl tert-butyl ether (MTBE)	960	20	50		µg/L	50	6/25/2022 11:14:00 PM	R89027
1,2,4-Trimethylbenzene	200	6.1	50		µg/L	50	6/25/2022 11:14:00 PM	R89027
1,3,5-Trimethylbenzene	58	9.1	50		µg/L	50	6/25/2022 11:14:00 PM	R89027
1,2-Dichloroethane (EDC)	ND	13	50		µg/L	50	6/25/2022 11:14:00 PM	R89027
Acetone	180	130	500	J	µg/L	50	6/25/2022 11:14:00 PM	R89027
Bromomethane	ND	43	150		µg/L	50	6/25/2022 11:14:00 PM	R89027
2-Butanone	ND	100	500		µg/L	50	6/25/2022 11:14:00 PM	R89027
Carbon disulfide	ND	30	500		µg/L	50	6/25/2022 11:14:00 PM	R89027
Chlorobenzene	ND	7.8	50		µg/L	50	6/25/2022 11:14:00 PM	R89027
Chloroform	ND	6.7	50		µg/L	50	6/25/2022 11:14:00 PM	R89027
Chloromethane	ND	21	150		µg/L	50	6/25/2022 11:14:00 PM	R89027
cis-1,2-DCE	ND	19	50		µg/L	50	6/25/2022 11:14:00 PM	R89027
1,1-Dichloroethane	ND	14	50		µg/L	50	6/25/2022 11:14:00 PM	R89027
1,1-Dichloroethene	ND	10	50		µg/L	50	6/25/2022 11:14:00 PM	R89027
Isopropylbenzene	26	9.1	50	J	µg/L	50	6/25/2022 11:14:00 PM	R89027
4-Isopropyltoluene	ND	10	50		µg/L	50	6/25/2022 11:14:00 PM	R89027
Methylene Chloride	ND	25	150		µg/L	50	6/25/2022 11:14:00 PM	R89027
n-Butylbenzene	ND	13	150		µg/L	50	6/25/2022 11:14:00 PM	R89027
n-Propylbenzene	50	9.1	50	J	µg/L	50	6/25/2022 11:14:00 PM	R89027
sec-Butylbenzene	ND	7.2	50		µg/L	50	6/25/2022 11:14:00 PM	R89027
Styrene	9.3	6.8	50	J	µg/L	50	6/25/2022 11:14:00 PM	R89027
Tetrachloroethene (PCE)	ND	18	50		µg/L	50	6/25/2022 11:14:00 PM	R89027
1,1,1-Trichloroethane	ND	15	50		µg/L	50	6/25/2022 11:14:00 PM	R89027
Trichloroethene (TCE)	ND	10	50		µg/L	50	6/25/2022 11:14:00 PM	R89027
Vinyl chloride	ND	16	50		µg/L	50	6/25/2022 11:14:00 PM	R89027
Xylenes, Total	520	19	75		µg/L	50	6/25/2022 11:14:00 PM	R89027
Surr: 1,2-Dichloroethane-d4	96.2	0	70-130		%Rec	50	6/25/2022 11:14:00 PM	R89027
Surr: 4-Bromofluorobenzene	113	0	70-130		%Rec	50	6/25/2022 11:14:00 PM	R89027
Surr: Dibromofluoromethane	95.7	0	70-130		%Rec	50	6/25/2022 11:14:00 PM	R89027
Surr: Toluene-d8	99.9	0	70-130		%Rec	50	6/25/2022 11:14:00 PM	R89027

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-55
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 9:45:00 AM
Lab ID: 2206866-005B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	6/21/2022 8:11:52 AM	68190

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-55
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 9:45:00 AM
Lab ID: 2206866-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **ED**	
Diesel Range Organics (DRO)	3.9	0.16	0.64		mg/L	10	6/30/2022 6:52:36 PM	68185
Motor Oil Range Organics (MRO)	ND	0.52	0.80	D	mg/L	10	6/30/2022 6:52:36 PM	68185
Surr: DNOP	0	0	42.2-138	S	%Rec	10	6/30/2022 6:52:36 PM	68185
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	6/30/2022 11:51:04 AM	68202
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	6/30/2022 11:51:04 AM	68202
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	6/30/2022 11:51:04 AM	68202
Di-n-octyl phthalate	ND	12	20		µg/L	1	6/30/2022 11:51:04 AM	68202
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	6/30/2022 11:51:04 AM	68202
Diethyl phthalate	ND	6.0	10		µg/L	1	6/30/2022 11:51:04 AM	68202
Dimethyl phthalate	ND	6.0	10		µg/L	1	6/30/2022 11:51:04 AM	68202
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	6/30/2022 11:51:04 AM	68202
2,4-Dinitrophenol	ND	16	20		µg/L	1	6/30/2022 11:51:04 AM	68202
1-Methylnaphthalene	28	4.3	5.0		µg/L	1	6/30/2022 11:51:04 AM	68202
2-Methylnaphthalene	15	4.2	5.0		µg/L	1	6/30/2022 11:51:04 AM	68202
2-Methylphenol	ND	5.0	10		µg/L	1	6/30/2022 11:51:04 AM	68202
3+4-Methylphenol	ND	5.1	10		µg/L	1	6/30/2022 11:51:04 AM	68202
Naphthalene	22	3.2	5.0		µg/L	1	6/30/2022 11:51:04 AM	68202
Phenol	24	18	20		µg/L	1	6/30/2022 11:51:04 AM	68202
Pyridine	ND	14	40		µg/L	1	6/30/2022 11:51:04 AM	68202
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	6/30/2022 11:51:04 AM	68202
Surr: 2-Fluorophenol	52.4	0	29.4-87.7		%Rec	1	6/30/2022 11:51:04 AM	68202
Surr: Phenol-d5	41.2	0	28.5-64.7		%Rec	1	6/30/2022 11:51:04 AM	68202
Surr: 2,4,6-Tribromophenol	71.1	0	18.6-129		%Rec	1	6/30/2022 11:51:04 AM	68202
Surr: Nitrobenzene-d5	61.9	0	36.9-103		%Rec	1	6/30/2022 11:51:04 AM	68202
Surr: 2-Fluorobiphenyl	64.3	0	38.1-99.9		%Rec	1	6/30/2022 11:51:04 AM	68202
Surr: 4-Terphenyl-d14	82.4	0	48-155		%Rec	1	6/30/2022 11:51:04 AM	68202
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	6/28/2022 9:31:00 PM	68202
Acenaphthene	0.60	0.14	0.30		µg/L	1	6/28/2022 9:31:00 PM	68202
Fluorene	1.8	0.095	0.30		µg/L	1	6/28/2022 9:31:00 PM	68202
Phenanthrene	1.5	0.16	0.30		µg/L	1	6/28/2022 9:31:00 PM	68202
Anthracene	ND	0.14	0.30		µg/L	1	6/28/2022 9:31:00 PM	68202
Fluoranthene	ND	0.14	0.30		µg/L	1	6/28/2022 9:31:00 PM	68202
Pyrene	ND	0.32	1.0		µg/L	1	6/28/2022 9:31:00 PM	68202
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	6/28/2022 9:31:00 PM	68202
Chrysene	ND	0.25	0.30		µg/L	1	6/28/2022 9:31:00 PM	68202
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	6/28/2022 9:31:00 PM	68202
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	6/28/2022 9:31:00 PM	68202

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-55
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 9:45:00 AM
Lab ID: 2206866-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	70.1	0	31.6-100		%Rec	1	6/28/2022 9:31:00 PM	68202
Surr: 2-Fluorobiphenyl	54.4	0	26.7-90.1		%Rec	1	6/28/2022 9:31:00 PM	68202
Surr: 4-Terphenyl-d14	71.4	0	72.3-147	S	%Rec	1	6/28/2022 9:31:00 PM	68202

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-55
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 9:45:00 AM
Lab ID: 2206866-005D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	0.74	0.0016	0.0030		mg/L	1	6/20/2022 2:59:17 PM	68172
Beryllium	ND	0.00088	0.0020		mg/L	1	6/20/2022 2:59:17 PM	68172
Cadmium	ND	0.0018	0.0020		mg/L	1	6/20/2022 2:59:17 PM	68172
Chromium	0.0068	0.0020	0.0060		mg/L	1	6/20/2022 2:59:17 PM	68172
Cobalt	0.033	0.0035	0.0060		mg/L	1	6/20/2022 2:59:17 PM	68172
Nickel	0.24	0.0053	0.010	*	mg/L	1	6/20/2022 2:59:17 PM	68172
Silver	ND	0.0018	0.0050		mg/L	1	6/20/2022 2:59:17 PM	68172
Vanadium	0.020	0.0035	0.050	J	mg/L	1	6/20/2022 2:59:17 PM	68172
Zinc	0.022	0.0039	0.010		mg/L	1	6/21/2022 5:40:26 PM	68172
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/20/2022 4:57:50 PM	68172
Arsenic	0.0084	0.00063	0.0050		mg/L	5	6/20/2022 6:33:10 PM	68172
Lead	0.0061	0.000061	0.00050		mg/L	1	6/20/2022 4:57:50 PM	68172
Selenium	ND	0.0019	0.0050		mg/L	5	6/20/2022 6:33:10 PM	68172
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/20/2022 11:55:23 AM	68219

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-55
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 9:45:00 AM
Lab ID: 2206866-005E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.57	0.0011	0.0020		mg/L	1	6/20/2022 6:12:37 PM	B88897
Beryllium	ND	0.00088	0.0020		mg/L	1	6/20/2022 6:12:37 PM	B88897
Cadmium	ND	0.00098	0.0020		mg/L	1	6/20/2022 6:12:37 PM	B88897
Chromium	ND	0.0020	0.0060		mg/L	1	6/20/2022 6:12:37 PM	B88897
Cobalt	0.0079	0.0024	0.0060		mg/L	1	6/20/2022 6:12:37 PM	B88897
Nickel	0.23	0.0033	0.010	*	mg/L	1	6/20/2022 6:12:37 PM	B88897
Silver	0.0018	0.0013	0.0050	J	mg/L	1	6/20/2022 6:12:37 PM	B88897
Vanadium	0.0032	0.0017	0.050	J	mg/L	1	6/20/2022 6:12:37 PM	B88897
Zinc	0.048	0.0032	0.010		mg/L	1	6/20/2022 6:12:37 PM	B88897
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/21/2022 11:58:26 AM	B88918
Arsenic	0.0045	0.00012	0.0010		mg/L	1	6/21/2022 11:58:26 AM	B88918
Lead	0.000059	0.000057	0.00050	J	mg/L	1	6/21/2022 11:58:26 AM	B88918
Selenium	ND	0.00034	0.0010		mg/L	1	6/21/2022 11:58:26 AM	B88918
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/20/2022 11:57:31 AM	68219

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-55
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 9:45:00 AM
Lab ID: 2206866-005F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PAC**	
Cyanide	0.00529	0.00500	0.00500		mg/L	1	6/28/2022 11:24:00 AM	R89389

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-56
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 10:10:00 AM
Lab ID: 2206866-006A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	0.45	0.0090	0.050		mg/L	1	6/23/2022 6:39:59 PM	G88994
Surr: BFB	1240	0	70-130	S	%Rec	1	6/23/2022 6:39:59 PM	G88994
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	1.0	0.23	1.0		µg/L	1	6/26/2022	R89027
Toluene	ND	0.20	1.0		µg/L	1	6/26/2022	R89027
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/26/2022	R89027
Methyl tert-butyl ether (MTBE)	38	0.39	1.0		µg/L	1	6/26/2022	R89027
1,2,4-Trimethylbenzene	0.23	0.12	1.0	J	µg/L	1	6/26/2022	R89027
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/26/2022	R89027
1,2-Dichloroethane (EDC)	14	0.25	1.0		µg/L	1	6/26/2022	R89027
Acetone	5.3	2.5	10	J	µg/L	1	6/26/2022	R89027
Bromomethane	ND	0.85	3.0		µg/L	1	6/26/2022	R89027
2-Butanone	ND	2.0	10		µg/L	1	6/26/2022	R89027
Carbon disulfide	ND	0.59	10		µg/L	1	6/26/2022	R89027
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/26/2022	R89027
Chloroform	ND	0.13	1.0		µg/L	1	6/26/2022	R89027
Chloromethane	0.93	0.41	3.0	J	µg/L	1	6/26/2022	R89027
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/26/2022	R89027
1,1-Dichloroethane	0.35	0.27	1.0	J	µg/L	1	6/26/2022	R89027
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/26/2022	R89027
Isopropylbenzene	0.76	0.18	1.0	J	µg/L	1	6/26/2022	R89027
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/26/2022	R89027
Methylene Chloride	ND	0.50	3.0		µg/L	1	6/26/2022	R89027
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/26/2022	R89027
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/26/2022	R89027
sec-Butylbenzene	0.16	0.14	1.0	J	µg/L	1	6/26/2022	R89027
Styrene	ND	0.14	1.0		µg/L	1	6/26/2022	R89027
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/26/2022	R89027
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/26/2022	R89027
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/26/2022	R89027
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/26/2022	R89027
Xylenes, Total	ND	0.37	1.5		µg/L	1	6/26/2022	R89027
Surr: 1,2-Dichloroethane-d4	94.2	0	70-130		%Rec	1	6/26/2022	R89027
Surr: 4-Bromofluorobenzene	86.7	0	70-130		%Rec	1	6/26/2022	R89027
Surr: Dibromofluoromethane	90.0	0	70-130		%Rec	1	6/26/2022	R89027
Surr: Toluene-d8	94.1	0	70-130		%Rec	1	6/26/2022	R89027

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-56
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 10:10:00 AM
Lab ID: 2206866-006B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	6/21/2022 8:42:03 AM	68190

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-56
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 10:10:00 AM
Lab ID: 2206866-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **ED**	
Diesel Range Organics (DRO)	1.1	0.016	0.064		mg/L	1	6/29/2022 2:53:18 AM	68185
Motor Oil Range Organics (MRO)	0.064	0.052	0.080	J	mg/L	1	6/29/2022 2:53:18 AM	68185
Surr: DNOP	93.7	0	42.2-138		%Rec	1	6/29/2022 2:53:18 AM	68185
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	6/30/2022 12:32:42 PM	68202
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	6/30/2022 12:32:42 PM	68202
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	6/30/2022 12:32:42 PM	68202
Di-n-octyl phthalate	ND	12	20		µg/L	1	6/30/2022 12:32:42 PM	68202
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	6/30/2022 12:32:42 PM	68202
Diethyl phthalate	ND	6.0	10		µg/L	1	6/30/2022 12:32:42 PM	68202
Dimethyl phthalate	ND	6.0	10		µg/L	1	6/30/2022 12:32:42 PM	68202
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	6/30/2022 12:32:42 PM	68202
2,4-Dinitrophenol	ND	16	20		µg/L	1	6/30/2022 12:32:42 PM	68202
2-Methylphenol	ND	5.0	10		µg/L	1	6/30/2022 12:32:42 PM	68202
3+4-Methylphenol	ND	5.1	10		µg/L	1	6/30/2022 12:32:42 PM	68202
Phenol	ND	18	20		µg/L	1	6/30/2022 12:32:42 PM	68202
Pyridine	ND	14	40		µg/L	1	6/30/2022 12:32:42 PM	68202
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	6/30/2022 12:32:42 PM	68202
Surr: 2-Fluorophenol	44.9	0	29.4-87.7		%Rec	1	6/30/2022 12:32:42 PM	68202
Surr: Phenol-d5	35.5	0	28.5-64.7		%Rec	1	6/30/2022 12:32:42 PM	68202
Surr: 2,4,6-Tribromophenol	68.1	0	18.6-129		%Rec	1	6/30/2022 12:32:42 PM	68202
Surr: Nitrobenzene-d5	52.3	0	36.9-103		%Rec	1	6/30/2022 12:32:42 PM	68202
Surr: 2-Fluorobiphenyl	54.2	0	38.1-99.9		%Rec	1	6/30/2022 12:32:42 PM	68202
Surr: 4-Terphenyl-d14	78.7	0	48-155		%Rec	1	6/30/2022 12:32:42 PM	68202
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	6/28/2022 10:23:00 PM	68202
Naphthalene	ND	0.20	0.30		µg/L	1	6/28/2022 10:23:00 PM	68202
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	6/28/2022 10:23:00 PM	68202
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	6/28/2022 10:23:00 PM	68202
Acenaphthene	ND	0.14	0.30		µg/L	1	6/28/2022 10:23:00 PM	68202
Fluorene	ND	0.095	0.30		µg/L	1	6/28/2022 10:23:00 PM	68202
Phenanthrene	ND	0.16	0.30		µg/L	1	6/28/2022 10:23:00 PM	68202
Anthracene	ND	0.14	0.30		µg/L	1	6/28/2022 10:23:00 PM	68202
Fluoranthene	ND	0.14	0.30		µg/L	1	6/28/2022 10:23:00 PM	68202
Pyrene	ND	0.32	1.0		µg/L	1	6/28/2022 10:23:00 PM	68202
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	6/28/2022 10:23:00 PM	68202
Chrysene	ND	0.25	0.30		µg/L	1	6/28/2022 10:23:00 PM	68202
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	6/28/2022 10:23:00 PM	68202
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	6/28/2022 10:23:00 PM	68202

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-56
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 10:10:00 AM
Lab ID: 2206866-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	63.6	0	31.6-100		%Rec	1	6/28/2022 10:23:00 PM	68202
Surr: 2-Fluorobiphenyl	53.2	0	26.7-90.1		%Rec	1	6/28/2022 10:23:00 PM	68202
Surr: 4-Terphenyl-d14	71.9	0	72.3-147	S	%Rec	1	6/28/2022 10:23:00 PM	68202

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-56
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 10:10:00 AM
Lab ID: 2206866-006D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	0.46	0.0016	0.0030		mg/L	1	6/20/2022 3:00:33 PM	68172
Beryllium	ND	0.00088	0.0020		mg/L	1	6/20/2022 3:00:33 PM	68172
Cadmium	ND	0.0018	0.0020		mg/L	1	6/20/2022 3:00:33 PM	68172
Chromium	ND	0.0020	0.0060		mg/L	1	6/20/2022 3:00:33 PM	68172
Cobalt	0.0047	0.0035	0.0060	J	mg/L	1	6/20/2022 3:00:33 PM	68172
Nickel	0.069	0.0053	0.010		mg/L	1	6/20/2022 3:00:33 PM	68172
Silver	ND	0.0018	0.0050		mg/L	1	6/20/2022 3:00:33 PM	68172
Vanadium	0.0063	0.0035	0.050	J	mg/L	1	6/20/2022 3:00:33 PM	68172
Zinc	0.0066	0.0039	0.010	J	mg/L	1	6/21/2022 5:42:36 PM	68172
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/20/2022 5:00:16 PM	68172
Arsenic	0.0042	0.00063	0.0050	J	mg/L	5	6/20/2022 6:35:37 PM	68172
Lead	0.0013	0.000061	0.00050		mg/L	1	6/20/2022 5:00:16 PM	68172
Selenium	ND	0.0019	0.0050		mg/L	5	6/20/2022 6:35:37 PM	68172
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/20/2022 12:03:54 PM	68219

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-56
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 10:10:00 AM
Lab ID: 2206866-006E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.37	0.0011	0.0020		mg/L	1	6/20/2022 6:14:47 PM	B88897
Beryllium	ND	0.00088	0.0020		mg/L	1	6/20/2022 6:14:47 PM	B88897
Cadmium	ND	0.00098	0.0020		mg/L	1	6/20/2022 6:14:47 PM	B88897
Chromium	ND	0.0020	0.0060		mg/L	1	6/20/2022 6:14:47 PM	B88897
Cobalt	ND	0.0024	0.0060		mg/L	1	6/20/2022 6:14:47 PM	B88897
Nickel	0.062	0.0033	0.010		mg/L	1	6/20/2022 6:14:47 PM	B88897
Silver	0.0017	0.0013	0.0050	J	mg/L	1	6/20/2022 6:14:47 PM	B88897
Vanadium	0.0018	0.0017	0.050	J	mg/L	1	6/20/2022 6:14:47 PM	B88897
Zinc	0.011	0.0032	0.010		mg/L	1	6/20/2022 6:14:47 PM	B88897
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/21/2022 12:01:07 PM	B88918
Arsenic	0.0020	0.00012	0.0010		mg/L	1	6/21/2022 12:01:07 PM	B88918
Lead	0.00025	0.000057	0.00050	J	mg/L	1	6/21/2022 12:01:07 PM	B88918
Selenium	0.00068	0.00034	0.0010	J	mg/L	1	6/21/2022 12:01:07 PM	B88918
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/20/2022 12:06:02 PM	68219

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-56
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 10:10:00 AM
Lab ID: 2206866-006F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PAC**	
Cyanide	0.00801	0.00500	0.00500		mg/L	1	6/28/2022 1:26:00 PM	R89389

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-59
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 10:40:00 AM
Lab ID: 2206866-007A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	0.35	0.0090	0.050		mg/L	1	6/23/2022 7:03:43 PM	G88994
Surr: BFB	6400	0	70-130	S	%Rec	1	6/23/2022 7:03:43 PM	G88994
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	6/26/2022 12:23:00 AM	R89027
Toluene	ND	0.20	1.0		µg/L	1	6/26/2022 12:23:00 AM	R89027
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/26/2022 12:23:00 AM	R89027
Methyl tert-butyl ether (MTBE)	9.6	0.39	1.0		µg/L	1	6/26/2022 12:23:00 AM	R89027
1,2,4-Trimethylbenzene	0.19	0.12	1.0	J	µg/L	1	6/26/2022 12:23:00 AM	R89027
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/26/2022 12:23:00 AM	R89027
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/26/2022 12:23:00 AM	R89027
Acetone	2.9	2.5	10	J	µg/L	1	6/26/2022 12:23:00 AM	R89027
Bromomethane	ND	0.85	3.0		µg/L	1	6/26/2022 12:23:00 AM	R89027
2-Butanone	ND	2.0	10		µg/L	1	6/26/2022 12:23:00 AM	R89027
Carbon disulfide	ND	0.59	10		µg/L	1	6/26/2022 12:23:00 AM	R89027
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/26/2022 12:23:00 AM	R89027
Chloroform	ND	0.13	1.0		µg/L	1	6/26/2022 12:23:00 AM	R89027
Chloromethane	ND	0.41	3.0		µg/L	1	6/26/2022 12:23:00 AM	R89027
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/26/2022 12:23:00 AM	R89027
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/26/2022 12:23:00 AM	R89027
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/26/2022 12:23:00 AM	R89027
Isopropylbenzene	0.38	0.18	1.0	J	µg/L	1	6/26/2022 12:23:00 AM	R89027
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/26/2022 12:23:00 AM	R89027
Methylene Chloride	ND	0.50	3.0		µg/L	1	6/26/2022 12:23:00 AM	R89027
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/26/2022 12:23:00 AM	R89027
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/26/2022 12:23:00 AM	R89027
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	6/26/2022 12:23:00 AM	R89027
Styrene	ND	0.14	1.0		µg/L	1	6/26/2022 12:23:00 AM	R89027
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/26/2022 12:23:00 AM	R89027
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/26/2022 12:23:00 AM	R89027
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/26/2022 12:23:00 AM	R89027
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/26/2022 12:23:00 AM	R89027
Xylenes, Total	ND	0.37	1.5		µg/L	1	6/26/2022 12:23:00 AM	R89027
Surr: 1,2-Dichloroethane-d4	92.8	0	70-130		%Rec	1	6/26/2022 12:23:00 AM	R89027
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	6/26/2022 12:23:00 AM	R89027
Surr: Dibromofluoromethane	95.7	0	70-130		%Rec	1	6/26/2022 12:23:00 AM	R89027
Surr: Toluene-d8	96.7	0	70-130		%Rec	1	6/26/2022 12:23:00 AM	R89027

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-59
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 10:40:00 AM
Lab ID: 2206866-007B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	6/21/2022 9:12:07 AM	68190

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-59
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 10:40:00 AM
Lab ID: 2206866-007C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **ED**	
Diesel Range Organics (DRO)	0.58	0.016	0.064		mg/L	1	6/29/2022 3:17:01 AM	68185
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	6/29/2022 3:17:01 AM	68185
Surr: DNOP	82.7	0	42.2-138		%Rec	1	6/29/2022 3:17:01 AM	68185
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	6/30/2022 3:21:31 PM	68218
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	6/30/2022 3:21:31 PM	68218
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	6/30/2022 3:21:31 PM	68218
Di-n-octyl phthalate	ND	12	20		µg/L	1	6/30/2022 3:21:31 PM	68218
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	6/30/2022 3:21:31 PM	68218
Diethyl phthalate	ND	6.0	10		µg/L	1	6/30/2022 3:21:31 PM	68218
Dimethyl phthalate	ND	6.0	10		µg/L	1	6/30/2022 3:21:31 PM	68218
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	6/30/2022 3:21:31 PM	68218
2,4-Dinitrophenol	ND	16	20		µg/L	1	6/30/2022 3:21:31 PM	68218
2-Methylphenol	ND	5.0	10		µg/L	1	6/30/2022 3:21:31 PM	68218
3+4-Methylphenol	ND	5.1	10		µg/L	1	6/30/2022 3:21:31 PM	68218
Phenol	ND	18	20		µg/L	1	6/30/2022 3:21:31 PM	68218
Pyridine	ND	14	40		µg/L	1	6/30/2022 3:21:31 PM	68218
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	6/30/2022 3:21:31 PM	68218
Surr: 2-Fluorophenol	27.8	0	29.4-87.7	S	%Rec	1	6/30/2022 3:21:31 PM	68218
Surr: Phenol-d5	36.8	0	28.5-64.7		%Rec	1	6/30/2022 3:21:31 PM	68218
Surr: 2,4,6-Tribromophenol	12.1	0	18.6-129	S	%Rec	1	6/30/2022 3:21:31 PM	68218
Surr: Nitrobenzene-d5	62.9	0	36.9-103		%Rec	1	6/30/2022 3:21:31 PM	68218
Surr: 2-Fluorobiphenyl	67.8	0	38.1-99.9		%Rec	1	6/30/2022 3:21:31 PM	68218
Surr: 4-Terphenyl-d14	82.7	0	48-155		%Rec	1	6/30/2022 3:21:31 PM	68218
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	5.9	0.11	1.0		µg/L	1	6/29/2022 1:48:00 AM	68218
Naphthalene	ND	0.20	0.30		µg/L	1	6/29/2022 1:48:00 AM	68218
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	6/29/2022 1:48:00 AM	68218
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	6/29/2022 1:48:00 AM	68218
Acenaphthene	ND	0.14	0.30		µg/L	1	6/29/2022 1:48:00 AM	68218
Fluorene	ND	0.095	0.30		µg/L	1	6/29/2022 1:48:00 AM	68218
Phenanthrene	ND	0.16	0.30		µg/L	1	6/29/2022 1:48:00 AM	68218
Anthracene	ND	0.14	0.30		µg/L	1	6/29/2022 1:48:00 AM	68218
Fluoranthene	ND	0.14	0.30		µg/L	1	6/29/2022 1:48:00 AM	68218
Pyrene	ND	0.32	1.0		µg/L	1	6/29/2022 1:48:00 AM	68218
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	6/29/2022 1:48:00 AM	68218
Chrysene	ND	0.25	0.30		µg/L	1	6/29/2022 1:48:00 AM	68218
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	6/29/2022 1:48:00 AM	68218
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	6/29/2022 1:48:00 AM	68218

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-59
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 10:40:00 AM
Lab ID: 2206866-007C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	72.6	0	31.6-100		%Rec	1	6/29/2022 1:48:00 AM	68218
Surr: 2-Fluorobiphenyl	60.8	0	26.7-90.1		%Rec	1	6/29/2022 1:48:00 AM	68218
Surr: 4-Terphenyl-d14	80.3	0	72.3-147		%Rec	1	6/29/2022 1:48:00 AM	68218

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-59
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 10:40:00 AM
Lab ID: 2206866-007D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	0.092	0.0079	0.015		mg/L	5	6/20/2022 3:47:28 PM	68172
Beryllium	ND	0.0044	0.010		mg/L	5	6/20/2022 3:47:28 PM	68172
Cadmium	ND	0.0088	0.010		mg/L	5	6/20/2022 3:47:28 PM	68172
Chromium	ND	0.0098	0.030		mg/L	5	6/20/2022 3:47:28 PM	68172
Cobalt	ND	0.018	0.030		mg/L	5	6/20/2022 3:47:28 PM	68172
Nickel	0.037	0.027	0.050	J	mg/L	5	6/20/2022 3:47:28 PM	68172
Silver	ND	0.0092	0.025		mg/L	5	6/20/2022 3:47:28 PM	68172
Vanadium	ND	0.018	0.25		mg/L	5	6/20/2022 3:47:28 PM	68172
Zinc	ND	0.019	0.050		mg/L	5	6/20/2022 3:47:28 PM	68172
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0044	0.010		mg/L	10	6/20/2022 6:38:04 PM	68172
Arsenic	0.0059	0.0013	0.010	J	mg/L	10	6/20/2022 6:38:04 PM	68172
Lead	0.0016	0.00061	0.0050	J	mg/L	10	6/20/2022 6:38:04 PM	68172
Selenium	ND	0.0037	0.010		mg/L	10	6/20/2022 6:38:04 PM	68172
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/20/2022 12:08:10 PM	68219

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-59
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 10:40:00 AM
Lab ID: 2206866-007E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.0098	0.0011	0.0020		mg/L	1	6/20/2022 6:18:58 PM	B88897
Beryllium	ND	0.00088	0.0020		mg/L	1	6/20/2022 6:18:58 PM	B88897
Cadmium	ND	0.00098	0.0020		mg/L	1	6/20/2022 6:18:58 PM	B88897
Chromium	ND	0.0020	0.0060		mg/L	1	6/20/2022 6:18:58 PM	B88897
Cobalt	ND	0.0024	0.0060		mg/L	1	6/20/2022 6:18:58 PM	B88897
Nickel	0.037	0.0033	0.010		mg/L	1	6/20/2022 6:18:58 PM	B88897
Silver	0.0050	0.0013	0.0050	J	mg/L	1	6/20/2022 6:18:58 PM	B88897
Vanadium	0.0052	0.0017	0.050	J	mg/L	1	6/20/2022 6:18:58 PM	B88897
Zinc	0.0062	0.0032	0.010	J	mg/L	1	6/20/2022 6:18:58 PM	B88897
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	6/21/2022 1:21:50 PM	D88918
Arsenic	0.0043	0.00061	0.0050	J	mg/L	5	6/21/2022 1:21:50 PM	D88918
Lead	ND	0.00028	0.0025		mg/L	5	6/21/2022 1:21:50 PM	D88918
Selenium	0.0018	0.0017	0.0050	J	mg/L	5	6/21/2022 1:21:50 PM	D88918
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/20/2022 12:10:18 PM	68219

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-59
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 10:40:00 AM
Lab ID: 2206866-007F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PAC**	
Cyanide	0.0193	0.00500	0.00500		mg/L	1	6/28/2022 1:29:00 PM	R89389

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-15-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022
Lab ID: 2206866-008A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	6/23/2022 7:27:21 PM	G88994
Surr: BFB	104	0	70-130		%Rec	1	6/23/2022 7:27:21 PM	G88994
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	6/27/2022 3:47:00 PM	W89041
Toluene	ND	0.20	1.0		µg/L	1	6/27/2022 3:47:00 PM	W89041
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/27/2022 3:47:00 PM	W89041
Methyl tert-butyl ether (MTBE)	2.2	0.39	1.0		µg/L	1	6/27/2022 3:47:00 PM	W89041
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/27/2022 3:47:00 PM	W89041
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/27/2022 3:47:00 PM	W89041
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/27/2022 3:47:00 PM	W89041
Acetone	ND	2.5	10		µg/L	1	6/27/2022 3:47:00 PM	W89041
Bromomethane	ND	0.85	3.0		µg/L	1	6/27/2022 3:47:00 PM	W89041
2-Butanone	ND	2.0	10		µg/L	1	6/27/2022 3:47:00 PM	W89041
Carbon disulfide	ND	0.59	10		µg/L	1	6/27/2022 3:47:00 PM	W89041
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/27/2022 3:47:00 PM	W89041
Chloroform	ND	0.13	1.0		µg/L	1	6/27/2022 3:47:00 PM	W89041
Chloromethane	ND	0.41	3.0		µg/L	1	6/27/2022 3:47:00 PM	W89041
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/27/2022 3:47:00 PM	W89041
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/27/2022 3:47:00 PM	W89041
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/27/2022 3:47:00 PM	W89041
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/27/2022 3:47:00 PM	W89041
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/27/2022 3:47:00 PM	W89041
Methylene Chloride	ND	0.50	3.0		µg/L	1	6/27/2022 3:47:00 PM	W89041
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/27/2022 3:47:00 PM	W89041
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/27/2022 3:47:00 PM	W89041
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	6/27/2022 3:47:00 PM	W89041
Styrene	ND	0.14	1.0		µg/L	1	6/27/2022 3:47:00 PM	W89041
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/27/2022 3:47:00 PM	W89041
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/27/2022 3:47:00 PM	W89041
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/27/2022 3:47:00 PM	W89041
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/27/2022 3:47:00 PM	W89041
Xylenes, Total	ND	0.37	1.5		µg/L	1	6/27/2022 3:47:00 PM	W89041
Surr: 1,2-Dichloroethane-d4	100	0	70-130		%Rec	1	6/27/2022 3:47:00 PM	W89041
Surr: 4-Bromofluorobenzene	98.3	0	70-130		%Rec	1	6/27/2022 3:47:00 PM	W89041
Surr: Dibromofluoromethane	106	0	70-130		%Rec	1	6/27/2022 3:47:00 PM	W89041
Surr: Toluene-d8	99.6	0	70-130		%Rec	1	6/27/2022 3:47:00 PM	W89041

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-15-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022
Lab ID: 2206866-008B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	6/21/2022 9:57:06 AM	68190

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-15-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022
Lab ID: 2206866-008C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **ED**	
Diesel Range Organics (DRO)	ND	0.016	0.064		mg/L	1	6/29/2022 3:40:39 AM	68185
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	6/29/2022 3:40:39 AM	68185
Surr: DNOP	76.7	0	42.2-138		%Rec	1	6/29/2022 3:40:39 AM	68185
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	6/30/2022 4:04:51 PM	68218
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	6/30/2022 4:04:51 PM	68218
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	6/30/2022 4:04:51 PM	68218
Di-n-octyl phthalate	ND	12	20		µg/L	1	6/30/2022 4:04:51 PM	68218
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	6/30/2022 4:04:51 PM	68218
Diethyl phthalate	ND	6.0	10		µg/L	1	6/30/2022 4:04:51 PM	68218
Dimethyl phthalate	ND	6.0	10		µg/L	1	6/30/2022 4:04:51 PM	68218
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	6/30/2022 4:04:51 PM	68218
2,4-Dinitrophenol	ND	16	20		µg/L	1	6/30/2022 4:04:51 PM	68218
2-Methylphenol	ND	5.0	10		µg/L	1	6/30/2022 4:04:51 PM	68218
3+4-Methylphenol	ND	5.1	10		µg/L	1	6/30/2022 4:04:51 PM	68218
Phenol	ND	18	20		µg/L	1	6/30/2022 4:04:51 PM	68218
Pyridine	ND	14	40		µg/L	1	6/30/2022 4:04:51 PM	68218
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	6/30/2022 4:04:51 PM	68218
Surr: 2-Fluorophenol	55.6	0	29.4-87.7		%Rec	1	6/30/2022 4:04:51 PM	68218
Surr: Phenol-d5	42.7	0	28.5-64.7		%Rec	1	6/30/2022 4:04:51 PM	68218
Surr: 2,4,6-Tribromophenol	70.1	0	18.6-129		%Rec	1	6/30/2022 4:04:51 PM	68218
Surr: Nitrobenzene-d5	63.9	0	36.9-103		%Rec	1	6/30/2022 4:04:51 PM	68218
Surr: 2-Fluorobiphenyl	67.6	0	38.1-99.9		%Rec	1	6/30/2022 4:04:51 PM	68218
Surr: 4-Terphenyl-d14	84.4	0	48-155		%Rec	1	6/30/2022 4:04:51 PM	68218
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	0.22	0.11	1.0	J	µg/L	1	6/29/2022 2:36:00 AM	68218
Naphthalene	ND	0.20	0.30		µg/L	1	6/29/2022 2:36:00 AM	68218
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	6/29/2022 2:36:00 AM	68218
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	6/29/2022 2:36:00 AM	68218
Acenaphthene	ND	0.14	0.30		µg/L	1	6/29/2022 2:36:00 AM	68218
Fluorene	ND	0.095	0.30		µg/L	1	6/29/2022 2:36:00 AM	68218
Phenanthrene	ND	0.16	0.30		µg/L	1	6/29/2022 2:36:00 AM	68218
Anthracene	ND	0.14	0.30		µg/L	1	6/29/2022 2:36:00 AM	68218
Fluoranthene	ND	0.14	0.30		µg/L	1	6/29/2022 2:36:00 AM	68218
Pyrene	ND	0.32	1.0		µg/L	1	6/29/2022 2:36:00 AM	68218
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	6/29/2022 2:36:00 AM	68218
Chrysene	ND	0.25	0.30		µg/L	1	6/29/2022 2:36:00 AM	68218
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	6/29/2022 2:36:00 AM	68218
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	6/29/2022 2:36:00 AM	68218

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-15-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022
Lab ID: 2206866-008C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	73.8	0	31.6-100		%Rec	1	6/29/2022 2:36:00 AM	68218
Surr: 2-Fluorobiphenyl	67.2	0	26.7-90.1		%Rec	1	6/29/2022 2:36:00 AM	68218
Surr: 4-Terphenyl-d14	85.4	0	72.3-147		%Rec	1	6/29/2022 2:36:00 AM	68218

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-15-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022
Lab ID: 2206866-008D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	0.045	0.0016	0.0030		mg/L	1	6/20/2022 3:03:19 PM	68172
Beryllium	ND	0.00088	0.0020		mg/L	1	6/20/2022 3:03:19 PM	68172
Cadmium	ND	0.0018	0.0020		mg/L	1	6/20/2022 3:03:19 PM	68172
Chromium	0.0044	0.0020	0.0060	J	mg/L	1	6/20/2022 3:03:19 PM	68172
Cobalt	ND	0.0035	0.0060		mg/L	1	6/20/2022 3:03:19 PM	68172
Nickel	ND	0.0053	0.010		mg/L	1	6/20/2022 3:03:19 PM	68172
Silver	ND	0.0018	0.0050		mg/L	1	6/20/2022 3:03:19 PM	68172
Vanadium	0.045	0.0035	0.050	J	mg/L	1	6/20/2022 3:03:19 PM	68172
Zinc	ND	0.0039	0.010		mg/L	1	6/20/2022 3:03:19 PM	68172
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/20/2022 5:10:03 PM	68172
Arsenic	0.00074	0.00013	0.0010	J	mg/L	1	6/20/2022 5:10:03 PM	68172
Lead	0.00024	0.000061	0.00050	J	mg/L	1	6/20/2022 5:10:03 PM	68172
Selenium	0.0023	0.00037	0.0010		mg/L	1	6/20/2022 5:10:03 PM	68172
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/20/2022 12:12:27 PM	68219

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-15-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022
Lab ID: 2206866-008E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.037	0.0011	0.0020		mg/L	1	6/20/2022 6:23:30 PM	B88897
Beryllium	ND	0.00088	0.0020		mg/L	1	6/20/2022 6:23:30 PM	B88897
Cadmium	ND	0.00098	0.0020		mg/L	1	6/20/2022 6:23:30 PM	B88897
Chromium	ND	0.0020	0.0060		mg/L	1	6/20/2022 6:23:30 PM	B88897
Cobalt	ND	0.0024	0.0060		mg/L	1	6/20/2022 6:23:30 PM	B88897
Nickel	ND	0.0033	0.010		mg/L	1	6/20/2022 6:23:30 PM	B88897
Silver	ND	0.0013	0.0050		mg/L	1	6/20/2022 6:23:30 PM	B88897
Vanadium	0.038	0.0017	0.050	J	mg/L	1	6/20/2022 6:23:30 PM	B88897
Zinc	0.020	0.0032	0.010		mg/L	1	6/20/2022 6:23:30 PM	B88897
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/21/2022 12:14:35 PM	D88918
Arsenic	0.00066	0.00012	0.0010	J	mg/L	1	6/21/2022 12:14:35 PM	D88918
Lead	ND	0.000057	0.00050		mg/L	1	6/21/2022 12:14:35 PM	D88918
Selenium	0.0021	0.00034	0.0010		mg/L	1	6/21/2022 12:14:35 PM	D88918
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/20/2022 12:14:36 PM	68219

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-15-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022
Lab ID: 2206866-008F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PAC**	
Cyanide	ND	0.00500	0.00500		mg/L	1	6/28/2022 1:30:00 PM	R89389

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB-6-15-22
Project: 2022 GW Sampling 2nd Qtr
Collection Date: 6/15/2022 10:40:00 AM
Lab ID: 2206866-009A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	6/27/2022 4:10:00 PM	W89041
Toluene	ND	0.20	1.0		µg/L	1	6/27/2022 4:10:00 PM	W89041
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/27/2022 4:10:00 PM	W89041
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	6/27/2022 4:10:00 PM	W89041
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/27/2022 4:10:00 PM	W89041
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/27/2022 4:10:00 PM	W89041
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/27/2022 4:10:00 PM	W89041
Acetone	4.2	2.5	10	J	µg/L	1	6/27/2022 4:10:00 PM	W89041
Bromomethane	ND	0.85	3.0		µg/L	1	6/27/2022 4:10:00 PM	W89041
2-Butanone	ND	2.0	10		µg/L	1	6/27/2022 4:10:00 PM	W89041
Carbon disulfide	ND	0.59	10		µg/L	1	6/27/2022 4:10:00 PM	W89041
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/27/2022 4:10:00 PM	W89041
Chloroform	ND	0.13	1.0		µg/L	1	6/27/2022 4:10:00 PM	W89041
Chloromethane	ND	0.41	3.0		µg/L	1	6/27/2022 4:10:00 PM	W89041
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/27/2022 4:10:00 PM	W89041
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/27/2022 4:10:00 PM	W89041
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/27/2022 4:10:00 PM	W89041
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/27/2022 4:10:00 PM	W89041
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/27/2022 4:10:00 PM	W89041
Methylene Chloride	ND	0.50	3.0		µg/L	1	6/27/2022 4:10:00 PM	W89041
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/27/2022 4:10:00 PM	W89041
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/27/2022 4:10:00 PM	W89041
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	6/27/2022 4:10:00 PM	W89041
Styrene	ND	0.14	1.0		µg/L	1	6/27/2022 4:10:00 PM	W89041
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/27/2022 4:10:00 PM	W89041
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/27/2022 4:10:00 PM	W89041
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/27/2022 4:10:00 PM	W89041
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/27/2022 4:10:00 PM	W89041
Xylenes, Total	ND	0.37	1.5		µg/L	1	6/27/2022 4:10:00 PM	W89041
Surr: 1,2-Dichloroethane-d4	98.0	0	70-130		%Rec	1	6/27/2022 4:10:00 PM	W89041
Surr: 4-Bromofluorobenzene	93.3	0	70-130		%Rec	1	6/27/2022 4:10:00 PM	W89041
Surr: Dibromofluoromethane	103	0	70-130		%Rec	1	6/27/2022 4:10:00 PM	W89041
Surr: Toluene-d8	99.6	0	70-130		%Rec	1	6/27/2022 4:10:00 PM	W89041

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 2nd Qtr
Collection Date:
Lab ID: 2206866-010A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
Toluene	ND	0.20	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
Naphthalene	ND	0.50	2.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
Acetone	ND	2.5	10		µg/L	1	6/27/2022 4:33:00 PM	W89041
Bromobenzene	ND	0.28	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
Bromodichloromethane	ND	0.20	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
Bromoform	ND	0.31	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
Bromomethane	ND	0.85	3.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
2-Butanone	ND	2.0	10		µg/L	1	6/27/2022 4:33:00 PM	W89041
Carbon disulfide	ND	0.59	10		µg/L	1	6/27/2022 4:33:00 PM	W89041
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
Chloroethane	ND	0.38	2.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
Chloroform	ND	0.13	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
Chloromethane	ND	0.41	3.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
4-Chlorotoluene	ND	0.34	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
Dibromochloromethane	ND	0.28	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
Dibromomethane	ND	0.31	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
Dichlorodifluoromethane	ND	0.40	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
1,2-Dichloropropane	ND	0.20	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 2nd Qtr
Collection Date:
Lab ID: 2206866-010A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Hexachlorobutadiene	ND	0.56	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
2-Hexanone	ND	1.8	10		µg/L	1	6/27/2022 4:33:00 PM	W89041
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
4-Methyl-2-pentanone	ND	0.88	10		µg/L	1	6/27/2022 4:33:00 PM	W89041
Methylene Chloride	ND	0.50	3.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
Styrene	ND	0.14	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
trans-1,2-DCE	ND	0.19	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
1,2,3-Trichlorobenzene	ND	0.25	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
1,1,2-Trichloroethane	ND	0.20	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
Trichlorofluoromethane	ND	0.16	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/27/2022 4:33:00 PM	W89041
Xylenes, Total	ND	0.37	1.5		µg/L	1	6/27/2022 4:33:00 PM	W89041
Surr: 1,2-Dichloroethane-d4	98.8	0	70-130		%Rec	1	6/27/2022 4:33:00 PM	W89041
Surr: 4-Bromofluorobenzene	107	0	70-130		%Rec	1	6/27/2022 4:33:00 PM	W89041
Surr: Dibromofluoromethane	99.5	0	70-130		%Rec	1	6/27/2022 4:33:00 PM	W89041
Surr: Toluene-d8	106	0	70-130		%Rec	1	6/27/2022 4:33:00 PM	W89041

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206866**
Date Reported: **8/15/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 2nd Qtr
Collection Date:
Lab ID: 2206866-010B
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	6/21/2022 10:27:05 AM	68190

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

ANALYTICAL REPORT

July 01, 2022

Hall Environmental Analysis Laboratory

Sample Delivery Group: L1506159

Samples Received: 06/17/2022

Project Number:

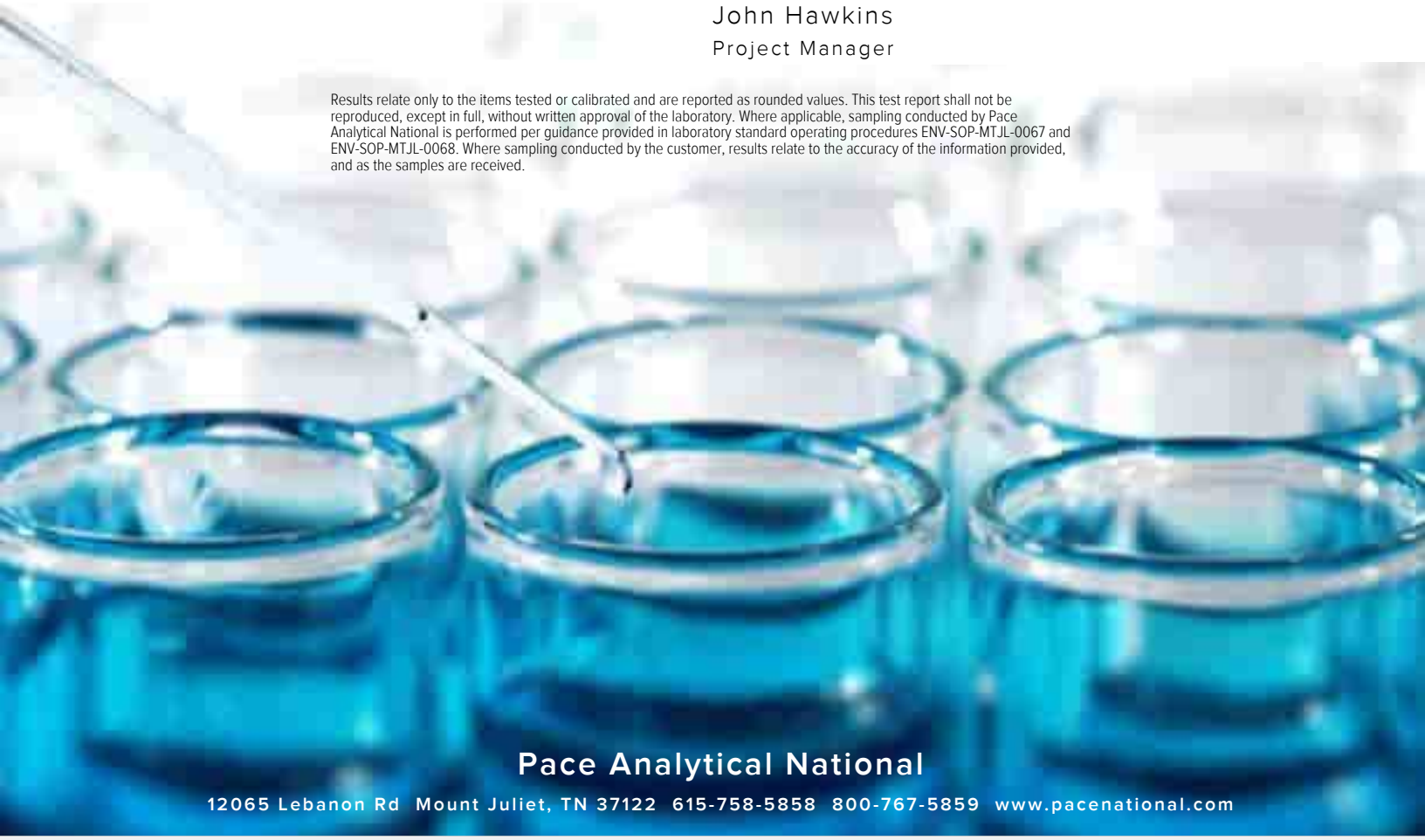
Description:

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By:

John Hawkins
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 4

Sr: Sample Results 5

2206866-001F EB-6-15-22 L1506159-01 5

2206866-002F OW-1 L1506159-02 6

2206866-003F OW-54 L1506159-03 7

2206866-004F OW-66 L1506159-04 8

2206866-005F OW-55 L1506159-05 9

2206866-006F OW-56 L1506159-06 10

2206866-007F OW-59 L1506159-07 11

2206866-008F DUP-6-15-22 L1506159-08 12

Qc: Quality Control Summary 13

Wet Chemistry by Method 4500CN E-2016 13

Gl: Glossary of Terms 15

Al: Accreditations & Locations 16

Sc: Sample Chain of Custody 17

SAMPLE SUMMARY

2206866-001F EB-6-15-22 L1506159-01 WW

Collected by	Collected date/time	Received date/time
	06/15/22 08:15	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1884563	1	06/26/22 18:10	06/28/22 11:18	LDT	Mt. Juliet, TN

2206866-002F OW-1 L1506159-02 WW

Collected by	Collected date/time	Received date/time
	06/15/22 08:25	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1884563	1	06/26/22 18:10	06/28/22 11:21	LDT	Mt. Juliet, TN

2206866-003F OW-54 L1506159-03 WW

Collected by	Collected date/time	Received date/time
	06/15/22 09:10	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1884563	1	06/26/22 18:10	06/28/22 11:22	LDT	Mt. Juliet, TN

2206866-004F OW-66 L1506159-04 WW

Collected by	Collected date/time	Received date/time
	06/15/22 09:30	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1884563	1	06/26/22 18:10	06/28/22 11:23	LDT	Mt. Juliet, TN

2206866-005F OW-55 L1506159-05 WW

Collected by	Collected date/time	Received date/time
	06/15/22 09:45	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1884563	1	06/26/22 18:10	06/28/22 11:24	LDT	Mt. Juliet, TN

2206866-006F OW-56 L1506159-06 WW

Collected by	Collected date/time	Received date/time
	06/15/22 10:10	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1885513	1	06/27/22 01:52	06/28/22 13:26	LDT	Mt. Juliet, TN

2206866-007F OW-59 L1506159-07 WW

Collected by	Collected date/time	Received date/time
	06/15/22 10:40	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1885513	1	06/27/22 01:52	06/28/22 13:29	LDT	Mt. Juliet, TN

2206866-008F DUP-6-15-22 L1506159-08 WW

Collected by	Collected date/time	Received date/time
	06/15/22 00:00	06/17/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1885513	1	06/27/22 01:52	06/28/22 13:30	LDT	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	06/28/2022 11:18	WG1884563

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	06/28/2022 11:21	WG1884563

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.00561		0.00500	1	06/28/2022 11:22	WG1884563

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.0134		0.00500	1	06/28/2022 11:23	WG1884563

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.00529		0.00500	1	06/28/2022 11:24	WG1884563

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.00801		0.00500	1	06/28/2022 13:26	WG1885513

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.0193		0.00500	1	06/28/2022 13:29	WG1885513

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	06/28/2022 13:30	WG1885513

Method Blank (MB)

(MB) R3808298-1 06/28/22 11:03

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1505947-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1505947-02 06/28/22 11:08 • (DUP) R3808298-3 06/28/22 11:09

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	16.0		20

L1505947-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1505947-04 06/28/22 11:15 • (DUP) R3808298-6 06/28/22 11:16

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	21.4	P1	20

Laboratory Control Sample (LCS)

(LCS) R3808298-2 06/28/22 11:04

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.104	104	87.1-120	

L1505947-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1505947-03 06/28/22 11:10 • (MS) R3808298-4 06/28/22 11:11 • (MSD) R3808298-5 06/28/22 11:12

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.101	0.102	101	102	1	90.0-110			0.985	20

L1506159-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1506159-01 06/28/22 11:18 • (MS) R3808298-7 06/28/22 11:19 • (MSD) R3808298-8 06/28/22 11:20

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.100	0.101	100	101	1	90.0-110			0.995	20

Method Blank (MB)

(MB) R3808449-1 06/28/22 13:04

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1505624-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1505624-06 06/28/22 13:08 • (DUP) R3808449-3 06/28/22 13:09

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

L1506020-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1506020-02 06/28/22 13:17 • (DUP) R3808449-6 06/28/22 13:18

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3808449-2 06/28/22 13:05

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.102	102	87.1-120	

L1505673-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1505673-03 06/28/22 13:10 • (MS) R3808449-4 06/28/22 13:11 • (MSD) R3808449-5 06/28/22 13:12

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0998	0.0997	94.9	94.8	1	90.0-110			0.100	20

L1506042-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1506042-01 06/28/22 13:21 • (MS) R3808449-7 06/28/22 13:22 • (MSD) R3808449-8 06/28/22 13:23

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0774	0.0788	77.4	78.8	1	90.0-110	J6	J6	1.79	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Received by OCD: 4/21/2023 9:21:57 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

B249

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

SUB CONTRATOR:	Pace TN	COMPANY: PACE TN	PHONE: (800) 767-5859	FAX: (615) 758-5859	
ADDRESS:	12065 Lebanon Rd		ACCOUNT #:	EMAIL:	
CITY, STATE, ZIP:	Mt. Juliet, TN 37122				

L1506159

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS	
1	2206866-001F	EB-6-15-22	500AMBHDP F-NAOH	Groundwater	6/15/2022 8:15:00 AM	1	Total Cyanide J and MDL	-01
2	2206866-002F	OW-1	500AMBHDP F-NAOH	Groundwater	6/15/2022 8:25:00 AM	1	Total Cyanide J and MDL	-02
3	2206866-003F	OW-54	500AMBHDP F-NAOH	Groundwater	6/15/2022 9:10:00 AM	1	Total Cyanide J and MDL	-03
4	2206866-004F	OW-66	500AMBHDP F-NAOH	Groundwater	6/15/2022 9:30:00 AM	1	Total Cyanide J and MDL	-04
5	2206866-005F	OW-55	500AMBHDP F-NAOH	Groundwater	6/15/2022 9:45:00 AM	1	Total Cyanide J and MDL	-05
6	2206866-006F	OW-56	500AMBHDP F-NAOH	Groundwater	6/15/2022 10:10:00 AM	1	Total Cyanide J and MDL	-06
7	2206866-007F	OW-59	500AMBHDP F-NAOH	Groundwater	6/15/2022 10:40:00 AM	1	Total Cyanide J and MDL	-07
8	2206866-008F	DUP-6-15-22	500AMBHDP F-NAOH	Groundwater	6/15/2022	1	Total Cyanide J and MDL	-08

DRAFT 1.8 to=1.8

Sample Receipt Checklist

COC Seal Present/Intact:	Y N	If Applicable	
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	Y N	Pres.Correct/Check:	Y N
Correct bottles used:	Y N		
Sufficient volume sent:	Y N		
RAD Screen <0.5 mR/hr:	Y N		

SPECIAL INSTRUCTIONS / COMMENTS: Fed ex 5755 8089 3848

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By: CMC	Date: 6/16/2022	Time: 8:06 AM	Received By: Veronica Sisneros	Date: 6/17/22	Time: 0900
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☑ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY
Temp of samples _____ °C Attempt to Cool ? _____
Comments: _____

Released to Imaging: 4/21/2023 9:40:26 AM

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206866**

15-Aug-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **MB-68172** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**

Client ID: **PBW** Batch ID: **68172** RunNo: **88908**

Prep Date: **6/16/2022** Analysis Date: **6/20/2022** SeqNo: **3157155** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LCSLL-68172** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**

Client ID: **BatchQC** Batch ID: **68172** RunNo: **88908**

Prep Date: **6/16/2022** Analysis Date: **6/20/2022** SeqNo: **3157156** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0027	0.0030	0.002000	0	137	50	150			J
Beryllium	0.0016	0.0020	0.002000	0	80.6	50	150			J
Cadmium	0.0018	0.0020	0.002000	0	92.4	50	150			J
Chromium	0.0050	0.0060	0.006000	0	83.1	50	150			J
Cobalt	0.0076	0.0060	0.006000	0	127	50	150			
Nickel	0.0046	0.010	0.005000	0	92.7	50	150			J
Silver	0.0051	0.0050	0.005000	0	101	50	150			
Vanadium	0.0087	0.050	0.01000	0	87.4	50	150			J
Zinc	0.011	0.010	0.01000	0	114	50	150			

Sample ID: **LCS-68172** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**

Client ID: **LCSW** Batch ID: **68172** RunNo: **88908**

Prep Date: **6/16/2022** Analysis Date: **6/20/2022** SeqNo: **3157157** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0030	0.5000	0	99.1	85	115			
Beryllium	0.52	0.0020	0.5000	0	104	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.4	85	115			
Chromium	0.49	0.0060	0.5000	0	97.9	85	115			
Cobalt	0.48	0.0060	0.5000	0	95.8	85	115			
Nickel	0.47	0.010	0.5000	0	93.7	85	115			
Silver	0.10	0.0050	0.1000	0	100	85	115			
Vanadium	0.50	0.050	0.5000	0	100	85	115			
Zinc	0.47	0.010	0.5000	0	94.8	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206866**

15-Aug-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **MB-B**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B88897**	RunNo: **88897**
Prep Date:	Analysis Date: **6/20/2022**	SeqNo: **3156651** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS-B**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B88897**	RunNo: **88897**
Prep Date:	Analysis Date: **6/20/2022**	SeqNo: **3156652** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0019	0.0020	0.002000	0	92.8	50	150			J
Beryllium	0.0018	0.0020	0.002000	0	92.5	50	150			J
Cadmium	0.0021	0.0020	0.002000	0	106	50	150			
Chromium	0.0054	0.0060	0.006000	0	90.5	50	150			J
Cobalt	0.0057	0.0060	0.006000	0	94.4	50	150			J
Nickel	0.0052	0.010	0.005000	0	104	50	150			J
Silver	0.0055	0.0050	0.005000	0	110	50	150			
Vanadium	0.010	0.050	0.01000	0	101	50	150			J
Zinc	0.010	0.010	0.01000	0	104	50	150			

Sample ID: **LCS-B**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B88897**	RunNo: **88897**
Prep Date:	Analysis Date: **6/20/2022**	SeqNo: **3156653** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	98.6	85	115			
Beryllium	0.50	0.0020	0.5000	0	100	85	115			
Cadmium	0.50	0.0020	0.5000	0	100	85	115			
Chromium	0.49	0.0060	0.5000	0	98.7	85	115			
Cobalt	0.48	0.0060	0.5000	0	96.2	85	115			
Nickel	0.49	0.010	0.5000	0	97.2	85	115			
Silver	0.10	0.0050	0.1000	0	103	85	115			
Vanadium	0.50	0.050	0.5000	0	100	85	115			
Zinc	0.48	0.010	0.5000	0	95.1	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206866**
15-Aug-22

Client: Marathon
Project: 2022 GW Sampling 2nd Qtr

Sample ID: **2206866-001EMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB-6-15-22**	Batch ID: **B88897**	RunNo: **88897**
Prep Date:	Analysis Date: **6/20/2022**	SeqNo: **3156657** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0020	0.5000	0	99.8	70	130			
Beryllium	0.51	0.0020	0.5000	0	102	70	130			
Cadmium	0.50	0.0020	0.5000	0	100	70	130			
Chromium	0.49	0.0060	0.5000	0	98.7	70	130			
Cobalt	0.48	0.0060	0.5000	0	95.5	70	130			
Nickel	0.49	0.010	0.5000	0	97.3	70	130			
Silver	0.11	0.0050	0.1000	0	107	70	130			
Vanadium	0.50	0.050	0.5000	0	100	70	130			
Zinc	0.48	0.010	0.5000	0.005374	95.7	70	130			

Sample ID: **2206866-001EMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB-6-15-22**	Batch ID: **B88897**	RunNo: **88897**
Prep Date:	Analysis Date: **6/20/2022**	SeqNo: **3156658** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	98.0	70	130	1.89	20	
Beryllium	0.51	0.0020	0.5000	0	101	70	130	0.586	20	
Cadmium	0.49	0.0020	0.5000	0	98.9	70	130	1.55	20	
Chromium	0.49	0.0060	0.5000	0	97.9	70	130	0.854	20	
Cobalt	0.47	0.0060	0.5000	0	93.9	70	130	1.64	20	
Nickel	0.48	0.010	0.5000	0	95.8	70	130	1.52	20	
Silver	0.11	0.0050	0.1000	0	106	70	130	0.781	20	
Vanadium	0.49	0.050	0.5000	0	98.4	70	130	1.94	20	
Zinc	0.48	0.010	0.5000	0.005374	94.0	70	130	1.79	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206866**
15-Aug-22

Client: Marathon
Project: 2022 GW Sampling 2nd Qtr

Sample ID: **MB-68172** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **68172** RunNo: **88865**
Prep Date: **6/16/2022** Analysis Date: **6/20/2022** SeqNo: **3155295** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **MSLCSLL-68172** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **68172** RunNo: **88865**
Prep Date: **6/16/2022** Analysis Date: **6/20/2022** SeqNo: **3155296** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0011	0.0010	0.001000	0	105	50	150			
Arsenic	0.00092	0.0010	0.001000	0	91.5	50	150			J
Lead	0.00049	0.00050	0.0005000	0	97.5	50	150			J
Selenium	0.0010	0.0010	0.001000	0	105	50	150			

Sample ID: **MSLCS-68172** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **68172** RunNo: **88865**
Prep Date: **6/16/2022** Analysis Date: **6/20/2022** SeqNo: **3155297** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	99.6	85	115			
Arsenic	0.025	0.0010	0.02500	0	102	85	115			
Lead	0.012	0.00050	0.01250	0	98.5	85	115			
Selenium	0.026	0.0010	0.02500	0	106	85	115			

Sample ID: **2206866-008DMSLL** SampType: **MSD** TestCode: **EPA 200.8: Metals**
Client ID: **DUP-6-15-22** Batch ID: **68172** RunNo: **88865**
Prep Date: **6/16/2022** Analysis Date: **6/20/2022** SeqNo: **3156033** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.8	70	130			
Arsenic	0.031	0.0010	0.02500	0.0007358	120	70	130			
Lead	0.010	0.00050	0.01250	0.0002351	79.7	70	130			
Selenium	0.034	0.0010	0.02500	0.002340	127	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206866**
15-Aug-22

Client: Marathon
Project: 2022 GW Sampling 2nd Qtr

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B88918**	RunNo: **88918**
Prep Date:	Analysis Date: **6/21/2022**	SeqNo: **3157492** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B88918**	RunNo: **88918**
Prep Date:	Analysis Date: **6/21/2022**	SeqNo: **3157493** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0011	0.0010	0.001000	0	113	50	150			
Arsenic	0.0012	0.0010	0.001000	0	117	50	150			
Lead	0.00057	0.00050	0.0005000	0	114	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B88918**	RunNo: **88918**
Prep Date:	Analysis Date: **6/21/2022**	SeqNo: **3157494** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	101	85	115			
Arsenic	0.026	0.0010	0.02500	0	105	85	115			
Lead	0.013	0.00050	0.01250	0	101	85	115			
Selenium	0.026	0.0010	0.02500	0	102	85	115			

Sample ID: **LCSD**	SampType: **LCSD**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSS02**	Batch ID: **B88918**	RunNo: **88918**
Prep Date:	Analysis Date: **6/21/2022**	SeqNo: **3157495** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	103	85	115	1.71	20	
Arsenic	0.026	0.0010	0.02500	0	105	85	115	0.0894	20	
Lead	0.013	0.00050	0.01250	0	103	85	115	2.56	20	
Selenium	0.025	0.0010	0.02500	0	100	85	115	1.84	20	

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B88918**	RunNo: **88918**
Prep Date:	Analysis Date: **6/21/2022**	SeqNo: **3157510** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.00092	0.0010	0.001000	0	92.2	50	150			J

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206866**
15-Aug-22

Client: Marathon
Project: 2022 GW Sampling 2nd Qtr

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **D88918**	RunNo: **88918**
Prep Date:	Analysis Date: **6/21/2022**	SeqNo: **3157597** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **D88918**	RunNo: **88918**
Prep Date:	Analysis Date: **6/21/2022**	SeqNo: **3157598** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00098	0.0010	0.001000	0	97.9	50	150			J
Arsenic	0.0012	0.0010	0.001000	0	117	50	150			
Lead	0.00051	0.00050	0.0005000	0	101	50	150			
Selenium	0.00080	0.0010	0.001000	0	80.5	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **D88918**	RunNo: **88918**
Prep Date:	Analysis Date: **6/21/2022**	SeqNo: **3157599** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	103	85	115			
Arsenic	0.026	0.0010	0.02500	0	104	85	115			
Lead	0.012	0.00050	0.01250	0	94.5	85	115			
Selenium	0.025	0.0010	0.02500	0	99.9	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206866**
15-Aug-22

Client: Marathon
Project: 2022 GW Sampling 2nd Qtr

Sample ID: **MB-68219**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **PBW**	Batch ID: **68219**	RunNo: **88875**							
Prep Date: **6/20/2022**	Analysis Date: **6/20/2022**	SeqNo: **3155539**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-68219**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **BatchQC**	Batch ID: **68219**	RunNo: **88875**							
Prep Date: **6/20/2022**	Analysis Date: **6/20/2022**	SeqNo: **3155540**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00014	0.00020	0.0001500	0	92.6	50	150			J

Sample ID: **LCS-68219**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **LCSW**	Batch ID: **68219**	RunNo: **88875**							
Prep Date: **6/20/2022**	Analysis Date: **6/20/2022**	SeqNo: **3155541**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0052	0.00020	0.005000	0	104	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206866**
15-Aug-22

Client: Marathon
Project: 2022 GW Sampling 2nd Qtr

Sample ID: **MB-68190**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **68190**	RunNo: **88885**							
Prep Date: **6/20/2022**	Analysis Date: **6/20/2022**	SeqNo: **3156950**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **MB-68190**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **68190**	RunNo: **88885**							
Prep Date: **6/20/2022**	Analysis Date: **6/20/2022**	SeqNo: **3156953**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-68190**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **LCSW**	Batch ID: **68190**	RunNo: **88885**							
Prep Date: **6/20/2022**	Analysis Date: **6/20/2022**	SeqNo: **3156956**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.10	0.010	0.1000	0	104	70	130			

Sample ID: **LCSD-68190**	SampType: **LCSD**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **LCSS02**	Batch ID: **68190**	RunNo: **88885**							
Prep Date: **6/20/2022**	Analysis Date: **6/20/2022**	SeqNo: **3156958**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	112	70	130	7.41	20	

Sample ID: **2206866-010BMS**	SampType: **MS**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **Trip Blank**	Batch ID: **68190**	RunNo: **88885**							
Prep Date: **6/20/2022**	Analysis Date: **6/21/2022**	SeqNo: **3157132**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.063	0.0094	0.09383	0	66.6	65	135			

Sample ID: **2206866-010BMSD**	SampType: **MSD**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **Trip Blank**	Batch ID: **68190**	RunNo: **88885**							
Prep Date: **6/20/2022**	Analysis Date: **6/21/2022**	SeqNo: **3157134**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.079	0.0094	0.09409	0	83.7	65	135	22.9	20	R

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206866**
15-Aug-22

Client: Marathon
Project: 2022 GW Sampling 2nd Qtr

Sample ID: **MB-68185**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **PBW**	Batch ID: **68185**	RunNo: **89114**							
Prep Date: **6/17/2022**	Analysis Date: **6/28/2022**	SeqNo: **3168760**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.018	0.064								J
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.034		0.03750		90.2	42.2	138			

Sample ID: **LCS-68185**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSW**	Batch ID: **68185**	RunNo: **89114**							
Prep Date: **6/17/2022**	Analysis Date: **6/28/2022**	SeqNo: **3168761**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.17	0.064	0.1875	0	92.4	31.7	75.4			S
Surr: DNOP	0.020		0.01875		106	42.2	138			

Sample ID: **LCSD-68185**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSS02**	Batch ID: **68185**	RunNo: **89114**							
Prep Date: **6/17/2022**	Analysis Date: **6/28/2022**	SeqNo: **3168763**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.17	0.064	0.1875	0	90.2	31.7	75.4	2.40	20	S
Surr: DNOP	0.020		0.01875		108	42.2	138	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206866**

15-Aug-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **G88994**	RunNo: **88994**
Prep Date:	Analysis Date: **6/23/2022**	SeqNo: **3160360** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	19		20.00		96.0	70	130			

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **G88994**	RunNo: **88994**
Prep Date:	Analysis Date: **6/23/2022**	SeqNo: **3160361** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.55	0.050	0.5000	0	109	80	120			
Surr: BFB	42		20.00		211	70	130			S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206866**

15-Aug-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **100ng lcs 2**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R89027**	RunNo: **89027**
Prep Date:	Analysis Date: **6/25/2022**	SeqNo: **3161605** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	92.1	70	130			
Toluene	24	1.0	20.00	0	122	70	130			
Chlorobenzene	22	1.0	20.00	0	110	70	130			
1,1-Dichloroethene	19	1.0	20.00	0	95.8	70	130			
Trichloroethene (TCE)	21	1.0	20.00	0	103	70	130			
Surr: 1,2-Dichloroethane-d4	9.8		10.00		97.6	70	130			
Surr: 4-Bromofluorobenzene	8.7		10.00		86.6	70	130			
Surr: Dibromofluoromethane	9.1		10.00		90.7	70	130			
Surr: Toluene-d8	12		10.00		118	70	130			

Sample ID: **mb 2**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R89027**	RunNo: **89027**
Prep Date:	Analysis Date: **6/25/2022**	SeqNo: **3161606** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206866**
15-Aug-22

Client: Marathon
Project: 2022 GW Sampling 2nd Qtr

Sample ID: **mb 2** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW** Batch ID: **R89027** RunNo: **89027**
Prep Date: Analysis Date: **6/25/2022** SeqNo: **3161606** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	8.8		10.00		87.6	70	130			
Surr: 4-Bromofluorobenzene	9.5		10.00		95.1	70	130			
Surr: Dibromofluoromethane	9.5		10.00		95.1	70	130			
Surr: Toluene-d8	11		10.00		106	70	130			

Sample ID: **2206866-001ams** SampType: **MS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **EB-6-15-22** Batch ID: **R89027** RunNo: **89027**
Prep Date: Analysis Date: **6/25/2022** SeqNo: **3161612** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	90.4	70	130			
Toluene	20	1.0	20.00	0	97.8	70	130			
Chlorobenzene	23	1.0	20.00	0	114	70	130			
1,1-Dichloroethene	15	1.0	20.00	0	74.2	70	130			
Trichloroethene (TCE)	16	1.0	20.00	0	81.5	70	130			
Surr: 1,2-Dichloroethane-d4	9.2		10.00		92.1	70	130			
Surr: 4-Bromofluorobenzene	9.1		10.00		91.4	70	130			
Surr: Dibromofluoromethane	9.7		10.00		96.8	70	130			
Surr: Toluene-d8	9.2		10.00		92.0	70	130			

Sample ID: **2206866-001amsd** SampType: **MSD** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **EB-6-15-22** Batch ID: **R89027** RunNo: **89027**
Prep Date: Analysis Date: **6/25/2022** SeqNo: **3161613** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	16	1.0	20.00	0	80.1	70	130	12.1	20	
Toluene	23	1.0	20.00	0	113	70	130	14.4	20	
Chlorobenzene	22	1.0	20.00	0	110	70	130	4.25	20	
1,1-Dichloroethene	15	1.0	20.00	0	74.6	70	130	0.525	20	
Trichloroethene (TCE)	16	1.0	20.00	0	80.9	70	130	0.628	20	
Surr: 1,2-Dichloroethane-d4	8.7		10.00		86.8	70	130	0	0	
Surr: 4-Bromofluorobenzene	8.5		10.00		85.1	70	130	0	0	
Surr: Dibromofluoromethane	9.3		10.00		93.1	70	130	0	0	
Surr: Toluene-d8	11		10.00		111	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206866**
15-Aug-22

Client: Marathon
Project: 2022 GW Sampling 2nd Qtr

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **W89041**	RunNo: **89041**
Prep Date:	Analysis Date: **6/27/2022**	SeqNo: **3163698** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	91.2	70	130			
Toluene	21	1.0	20.00	0	103	70	130			
Chlorobenzene	22	1.0	20.00	0	109	70	130			
1,1-Dichloroethene	17	1.0	20.00	0	83.9	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	91.2	70	130			
Surr: 1,2-Dichloroethane-d4	9.5		10.00		95.3	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		98.1	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **W89041**	RunNo: **89041**
Prep Date:	Analysis Date: **6/27/2022**	SeqNo: **3163699** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206866**
15-Aug-22

Client: Marathon
Project: 2022 GW Sampling 2nd Qtr

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **W89041**	RunNo: **89041**
Prep Date:	Analysis Date: **6/27/2022**	SeqNo: **3163699** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206866**
15-Aug-22

Client: Marathon
Project: 2022 GW Sampling 2nd Qtr

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **W89041**	RunNo: **89041**
Prep Date:	Analysis Date: **6/27/2022**	SeqNo: **3163699** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.6		10.00		96.4	70	130			
Surr: 4-Bromofluorobenzene	9.5		10.00		95.5	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206866**
15-Aug-22

Client: Marathon
Project: 2022 GW Sampling 2nd Qtr

Sample ID: **mb-68202** SampType: **MBLK** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW** Batch ID: **68202** RunNo: **89133**
Prep Date: **6/17/2022** Analysis Date: **6/29/2022** SeqNo: **3167345** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Anthracene	ND	10								
Benz(a)anthracene	ND	5.0								
Benzo(b)fluoranthene	ND	10								
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	10								
2,4-Dinitrophenol	ND	20								
Fluoranthene	ND	10								
Fluorene	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
1-Methylnaphthalene	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
Naphthalene	ND	5.0								
Phenanthrene	ND	10								
Phenol	ND	20								
Pyrene	ND	10								
Pyridine	ND	40								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	110		200.0		56.8	29.4	87.7			
Surr: Phenol-d5	87		200.0		43.4	28.5	64.7			
Surr: 2,4,6-Tribromophenol	140		200.0		70.7	18.6	129			
Surr: Nitrobenzene-d5	64		100.0		63.8	36.9	103			
Surr: 2-Fluorobiphenyl	72		100.0		71.9	38.1	99.9			
Surr: 4-Terphenyl-d14	89		100.0		88.9	48	155			

Sample ID: **lcs-68202** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW** Batch ID: **68202** RunNo: **89133**
Prep Date: **6/17/2022** Analysis Date: **6/29/2022** SeqNo: **3167346** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206866**
15-Aug-22

Client: Marathon
Project: 2022 GW Sampling 2nd Qtr

Sample ID: **lcs-68202** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW** Batch ID: **68202** RunNo: **89133**
Prep Date: **6/17/2022** Analysis Date: **6/29/2022** SeqNo: **3167346** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	74	10	100.0	0	73.9	21.3	104			
1,4-Dichlorobenzene	65	5.0	100.0	0	64.8	15	89.8			
Phenol	90	20	200.0	0	44.8	17	61.1			
Pyrene	91	10	100.0	0	90.7	61	123			
Surr: 2-Fluorophenol	110		200.0		57.1	29.4	87.7			
Surr: Phenol-d5	87		200.0		43.4	28.5	64.7			
Surr: 2,4,6-Tribromophenol	170		200.0		83.6	18.6	129			
Surr: Nitrobenzene-d5	75		100.0		74.6	36.9	103			
Surr: 2-Fluorobiphenyl	80		100.0		80.3	38.1	99.9			
Surr: 4-Terphenyl-d14	98		100.0		97.5	48	155			

Sample ID: **lcsd-68202** SampType: **LCSD** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02** Batch ID: **68202** RunNo: **89133**
Prep Date: **6/17/2022** Analysis Date: **6/29/2022** SeqNo: **3167347** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	50	10	100.0	0	49.9	21.3	104	38.7	45.3	
1,4-Dichlorobenzene	40	5.0	100.0	0	40.1	15	89.8	47.0	39.6	R
Phenol	52	20	200.0	0	26.2	17	61.1	52.4	42.5	R
Pyrene	68	10	100.0	0	67.9	61	123	28.9	11.8	R
Surr: 2-Fluorophenol	66		200.0		33.0	29.4	87.7	0	0	
Surr: Phenol-d5	52		200.0		26.0	28.5	64.7	0	0	S
Surr: 2,4,6-Tribromophenol	130		200.0		66.7	18.6	129	0	0	
Surr: Nitrobenzene-d5	43		100.0		43.1	36.9	103	0	0	
Surr: 2-Fluorobiphenyl	50		100.0		49.9	38.1	99.9	0	0	
Surr: 4-Terphenyl-d14	73		100.0		72.6	48	155	0	0	

Sample ID: **mb-68218** SampType: **MBLK** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW** Batch ID: **68218** RunNo: **89168**
Prep Date: **6/20/2022** Analysis Date: **6/30/2022** SeqNo: **3169239** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Anthracene	ND	10								
Benz(a)anthracene	ND	5.0								
Benzo(b)fluoranthene	ND	10								
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206866**
15-Aug-22

Client: Marathon
Project: 2022 GW Sampling 2nd Qtr

Sample ID: **mb-68218** SampType: **MBLK** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW** Batch ID: **68218** RunNo: **89168**
Prep Date: **6/20/2022** Analysis Date: **6/30/2022** SeqNo: **3169239** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	10								
2,4-Dinitrophenol	ND	20								
Fluoranthene	ND	10								
Fluorene	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
1-Methylnaphthalene	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
Naphthalene	ND	5.0								
Phenanthrene	ND	10								
Phenol	ND	20								
Pyrene	ND	10								
Pyridine	ND	40								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	120		200.0		60.7	29.4	87.7			
Surr: Phenol-d5	97		200.0		48.6	28.5	64.7			
Surr: 2,4,6-Tribromophenol	140		200.0		69.8	18.6	129			
Surr: Nitrobenzene-d5	66		100.0		66.4	36.9	103			
Surr: 2-Fluorobiphenyl	65		100.0		64.7	38.1	99.9			
Surr: 4-Terphenyl-d14	80		100.0		80.4	48	155			

Sample ID: **lcs-68218** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW** Batch ID: **68218** RunNo: **89168**
Prep Date: **6/20/2022** Analysis Date: **6/30/2022** SeqNo: **3169240** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	72	10	100.0	0	72.2	21.3	104			
1,4-Dichlorobenzene	64	5.0	100.0	0	64.4	15	89.8			
Phenol	89	20	200.0	0	44.5	17	61.1			
Pyrene	86	10	100.0	0	86.2	61	123			
Surr: 2-Fluorophenol	110		200.0		53.6	29.4	87.7			
Surr: Phenol-d5	84		200.0		41.9	28.5	64.7			
Surr: 2,4,6-Tribromophenol	150		200.0		76.7	18.6	129			
Surr: Nitrobenzene-d5	71		100.0		70.5	36.9	103			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206866**

15-Aug-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **lcs-68218**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **68218**	RunNo: **89168**
Prep Date: **6/20/2022**	Analysis Date: **6/30/2022**	SeqNo: **3169240** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorobiphenyl	73		100.0		73.4	38.1	99.9			
Surr: 4-Terphenyl-d14	91		100.0		91.2	48	155			

Sample ID: **lcsd-68218**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **68218**	RunNo: **89168**
Prep Date: **6/20/2022**	Analysis Date: **6/30/2022**	SeqNo: **3169241** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	75	10	100.0	0	74.8	21.3	104	3.65	45.3	
1,4-Dichlorobenzene	63	5.0	100.0	0	63.2	15	89.8	1.81	39.6	
Phenol	88	20	200.0	0	44.2	17	61.1	0.867	42.5	
Pyrene	85	10	100.0	0	85.4	61	123	0.990	11.8	
Surr: 2-Fluorophenol	110		200.0		55.2	29.4	87.7	0	0	
Surr: Phenol-d5	84		200.0		42.2	28.5	64.7	0	0	
Surr: 2,4,6-Tribromophenol	160		200.0		80.3	18.6	129	0	0	
Surr: Nitrobenzene-d5	72		100.0		71.8	36.9	103	0	0	
Surr: 2-Fluorobiphenyl	72		100.0		72.5	38.1	99.9	0	0	
Surr: 4-Terphenyl-d14	94		100.0		94.0	48	155	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206866**

15-Aug-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **mb-68202**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **68202**	RunNo: **89096**
Prep Date: **6/17/2022**	Analysis Date: **6/28/2022**	SeqNo: **3165504** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.30								
1-Methylnaphthalene	ND	0.30								
2-Methylnaphthalene	ND	0.30								
Acenaphthene	ND	0.30								
Fluorene	ND	0.30								
Phenanthrene	ND	0.30								
Anthracene	ND	0.30								
Fluoranthene	ND	0.30								
Pyrene	ND	1.0								
Benz(a)anthracene	ND	0.30								
Chrysene	ND	0.30								
Benzo(b)fluoranthene	ND	0.30								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	78		100.0		78.5	31.6	100			
Surr: 2,4,6-Tribromophenol	100		200.0		50.3	22	101			
Surr: 2-Fluorobiphenyl	76		100.0		75.8	26.7	90.1			
Surr: 4-Terphenyl-d14	110		100.0		107	72.3	147			

Sample ID: **lcs-68202 lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **68202**	RunNo: **89096**
Prep Date: **6/17/2022**	Analysis Date: **6/28/2022**	SeqNo: **3165505** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.78	0.10	2.000	0	39.0	20.2	48.4			
Naphthalene	1.5	0.30	2.000	0	73.0	21.3	79.9			
1-Methylnaphthalene	1.5	0.30	2.000	0	73.0	22.2	80.3			
2-Methylnaphthalene	1.5	0.30	2.000	0	73.0	20.6	80.1			
Acenaphthene	1.5	0.30	2.000	0	77.0	29.8	82.7			
Fluorene	1.6	0.30	2.000	0	81.0	33.3	86			
Phenanthrene	1.7	0.30	2.000	0	84.0	38.2	93.9			
Anthracene	1.8	0.30	2.000	0	90.0	41.1	95.6			
Fluoranthene	2.1	0.30	2.000	0	105	52.9	123			
Pyrene	1.7	1.0	2.000	0	85.0	51	113			
Benz(a)anthracene	2.0	0.30	2.000	0	101	51	147			
Chrysene	1.7	0.30	2.000	0	84.0	55.3	115			
Benzo(b)fluoranthene	1.7	0.30	2.000	0	87.0	44.4	136			
Indeno(1,2,3-cd)pyrene	1.8	0.30	2.000	0	90.0	31.4	165			
Surr: Nitrobenzene-d5	76		100.0		76.3	31.6	100			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206866**

15-Aug-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **lcs-68202 lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **68202**	RunNo: **89096**
Prep Date: **6/17/2022**	Analysis Date: **6/28/2022**	SeqNo: **3165505** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	97		200.0		48.4	22	101			
Surr: 2-Fluorobiphenyl	72		100.0		71.9	26.7	90.1			
Surr: 4-Terphenyl-d14	91		100.0		90.6	72.3	147			

Sample ID: **lcsd-68202 lf**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02**	Batch ID: **68202**	RunNo: **89096**
Prep Date: **6/17/2022**	Analysis Date: **6/28/2022**	SeqNo: **3165506** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.80	0.10	2.000	0	40.0	20.2	48.4	2.53	30.1	
Naphthalene	1.4	0.30	2.000	0	71.0	21.3	79.9	2.78	25.6	
1-Methylnaphthalene	1.4	0.30	2.000	0	72.0	22.2	80.3	1.38	25	
2-Methylnaphthalene	1.4	0.30	2.000	0	71.0	20.6	80.1	2.78	25	
Acenaphthene	1.5	0.30	2.000	0	77.0	29.8	82.7	0	27.8	
Fluorene	1.6	0.30	2.000	0	81.0	33.3	86	0	26.4	
Phenanthrene	1.7	0.30	2.000	0	84.0	38.2	93.9	0	27.9	
Anthracene	1.8	0.30	2.000	0	90.0	41.1	95.6	0	25.6	
Fluoranthene	2.1	0.30	2.000	0	103	52.9	123	1.92	22.8	
Pyrene	1.7	1.0	2.000	0	85.0	51	113	0	20	
Benz(a)anthracene	2.0	0.30	2.000	0	101	51	147	0	24.1	
Chrysene	1.7	0.30	2.000	0	84.0	55.3	115	0	20	
Benzo(b)fluoranthene	1.7	0.30	2.000	0	87.0	44.4	136	0	24.5	
Indeno(1,2,3-cd)pyrene	1.7	0.30	2.000	0	85.0	31.4	165	5.71	21.1	
Surr: Nitrobenzene-d5	79		100.0		78.7	31.6	100	0	0	
Surr: 2,4,6-Tribromophenol	97		200.0		48.6	22	101	0	0	
Surr: 2-Fluorobiphenyl	74		100.0		73.7	26.7	90.1	0	0	
Surr: 4-Terphenyl-d14	93		100.0		93.1	72.3	147	0	0	

Sample ID: **mb-68218**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **68218**	RunNo: **89096**
Prep Date: **6/20/2022**	Analysis Date: **6/28/2022**	SeqNo: **3165520** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.30								
1-Methylnaphthalene	ND	0.30								
2-Methylnaphthalene	ND	0.30								
Acenaphthene	ND	0.30								
Fluorene	ND	0.30								
Phenanthrene	ND	0.30								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206866**

15-Aug-22

Client: Marathon

Project: 2022 GW Sampling 2nd Qtr

Sample ID: **mb-68218**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **68218**	RunNo: **89096**
Prep Date: **6/20/2022**	Analysis Date: **6/28/2022**	SeqNo: **3165520** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Anthracene	ND	0.30								
Fluoranthene	ND	0.30								
Pyrene	ND	1.0								
Benz(a)anthracene	ND	0.30								
Chrysene	ND	0.30								
Benzo(b)fluoranthene	ND	0.30								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	78		100.0		77.7	31.6	100			
Surr: 2,4,6-Tribromophenol	100		200.0		50.2	22	101			
Surr: 2-Fluorobiphenyl	67		100.0		67.1	26.7	90.1			
Surr: 4-Terphenyl-d14	87		100.0		87.5	72.3	147			

Sample ID: **lcs-68218 lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **68218**	RunNo: **89096**
Prep Date: **6/20/2022**	Analysis Date: **6/29/2022**	SeqNo: **3165521** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.80	0.10	2.000	0	40.0	20.2	48.4			
Naphthalene	1.5	0.30	2.000	0	77.0	21.3	79.9			
1-Methylnaphthalene	1.6	0.30	2.000	0	82.0	22.2	80.3			S
2-Methylnaphthalene	1.7	0.30	2.000	0	85.0	20.6	80.1			S
Acenaphthene	1.6	0.30	2.000	0	81.0	29.8	82.7			
Fluorene	1.9	0.30	2.000	0	93.0	33.3	86			S
Phenanthrene	1.9	0.30	2.000	0	94.0	38.2	93.9			S
Anthracene	2.5	0.30	2.000	0	127	41.1	95.6			S
Fluoranthene	3.2	0.30	2.000	0	158	52.9	123			S
Pyrene	2.0	1.0	2.000	0	101	51	113			
Benz(a)anthracene	3.4	0.30	2.000	0	170	51	147			S
Chrysene	1.6	0.30	2.000	0	82.0	55.3	115			
Benzo(b)fluoranthene	2.4	0.30	2.000	0	118	44.4	136			
Indeno(1,2,3-cd)pyrene	3.2	0.30	2.000	0	162	31.4	165			
Surr: Nitrobenzene-d5	74		100.0		74.2	31.6	100			
Surr: 2,4,6-Tribromophenol	100		200.0		50.2	22	101			
Surr: 2-Fluorobiphenyl	67		100.0		67.3	26.7	90.1			
Surr: 4-Terphenyl-d14	74		100.0		74.2	72.3	147			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206866**
15-Aug-22

Client: Marathon
Project: 2022 GW Sampling 2nd Qtr

Sample ID: **lcsd-68218 lf** SampType: **LCSD** TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02** Batch ID: **68218** RunNo: **89096**
Prep Date: **6/20/2022** Analysis Date: **6/29/2022** SeqNo: **3165522** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.86	0.10	2.000	0	43.0	20.2	48.4	9.76	30.1	
Naphthalene	1.4	0.30	2.000	0	71.0	21.3	79.9	2.78	25.6	
1-Methylnaphthalene	1.5	0.30	2.000	0	73.0	22.2	80.3	0	25	
2-Methylnaphthalene	1.5	0.30	2.000	0	74.0	20.6	80.1	1.36	25	
Acenaphthene	1.5	0.30	2.000	0	77.0	29.8	82.7	0	27.8	
Fluorene	1.8	0.30	2.000	0	88.0	33.3	86	8.28	26.4	S
Phenanthrene	1.7	0.30	2.000	0	85.0	38.2	93.9	1.18	27.9	
Anthracene	2.0	0.30	2.000	0	102	41.1	95.6	12.5	25.6	S
Fluoranthene	2.4	0.30	2.000	0	120	52.9	123	13.3	22.8	
Pyrene	1.7	1.0	2.000	0	85.0	51	113	0	20	
Benz(a)anthracene	2.8	0.30	2.000	0	141	51	147	33.1	24.1	R
Chrysene	1.6	0.30	2.000	0	82.0	55.3	115	2.41	20	
Benzo(b)fluoranthene	2.3	0.30	2.000	0	116	44.4	136	28.6	24.5	R
Indeno(1,2,3-cd)pyrene	3.3	0.30	2.000	0	166	31.4	165	59.4	21.1	RS
Surr: Nitrobenzene-d5	78		100.0		77.9	31.6	100	0	0	
Surr: 2,4,6-Tribromophenol	98		200.0		49.2	22	101	0	0	
Surr: 2-Fluorobiphenyl	69		100.0		68.5	26.7	90.1	0	0	
Surr: 4-Terphenyl-d14	76		100.0		75.7	72.3	147	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **Marathon** Work Order Number: **2206866** RcptNo: **1**

Received By: **Cheyenne Cason** **6/16/2022 7:20:00 AM** Cheyenne

Completed By: **Cheyenne Cason** **6/16/2022 8:06:41 AM** Cheyenne

Reviewed By: KPG 6.16.22

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☑ No ☐ NA ☐
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: 16 8 (<2 or >12 unless noted)
Adjusted? NO
Checked by: JR 6/16/22

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____
By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: _____
Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.1	Good	Yes			
2	1.7	Good	Yes			
3	3.6	Good	Yes			
4	1.5	Good	Yes			

Received by OCD: 4/21/2023 9:21:57 AM

Chain of Custody Record

Client: Marathon Gallup Refinery

Mailing Address: 92 Giant Crossing Road
Jamestown, NM,87347

Phone #: 808-640-1823

email or Fax#:

QA/QC Package:
X Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

X EDD (Type)

X Standard Rush

Project Name:
2022 GW Sampling 2nd Quarter

Project #: **697-080-001**

Project Manager:
Lesli Alexander/Mackensie Swift

Sampler:

On Ice: ☒ Yes ☐ No

# of Coolers: 4

Cooler Temp(including CF): See Remarks

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2206866
6/15	8:15		EB-6-15-22	14		001
6/15	8:25		OW-1	14		002
6/15	9:10		OW-54	14		003
6/15	9:30		OW-66	14		004
6/15	9:45		OW-55	14		005
6/15	10:10		OW-56	14		006
6/15	10:40		OW-59	14		007
6/15	—		Dup-6-15-22	14		008
6/15	10:40		FB-6-15-22	~~4~~ 3		009
			Trip Blank			010

Analysis Request

See Analyte List	8260B: VOC	8270C: SVOC	8270C SIM: PAH, 1,4 Dioxane	8015: TPH GRO/DRO/MRO	E200.7: Metals	E200.7: Dissolved Metals	E245.1 Mercury	E504.1: EDB	E335.4: Cyanide Subbed		537.1: PFAS	SM 5201B: BOD	410.4: COD	SM9223B E. Coli
X	X	X	X	X	X	X	X	X	X					
X	X	X	X	X	X	X	X	X	X					
X	X	X	X	X	X	X	X	X	X					
X	X	X	X	X	X	X	X	X	X					
X	X	X	X	X	X	X	X	X	X					
X	X	X	X	X	X	X	X	X	X					
X	X	X	X	X	X	X	X	X	X					
	X	X												

5.1 - 0 = 5.1
1.7 - 0 = 1.7
3.6 - 0 = 3.6
1.5 - 0 = 1.5

Date	Time	Relinquished by	Received by	Via	Date	Time
6/15	12:00	Hilario Trejo				
				Courier	6/16/22	0720

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Released to Imaging: 4/21/2023 9:40:26 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

July 14, 2022

Lesli Alexander

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX (505) 632-3911

RE: 2022 GW Sampling 2nd Quarter OrderNo.: 2206938

Dear Lesli Alexander:

Hall Environmental Analysis Laboratory received 10 sample(s) on 6/17/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **2206938**
Date: **7/14/2022**

CLIENT: Marathon
Project: 2022 GW Sampling 2nd Quarter

Analytical Notes Regarding sample MKTF-32. The 8270 LCSD had low recoveries for the phenol spikes. The LCS had acceptable recoveries for all compounds.

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-16-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022 8:30:00 AM
Lab ID: 2206938-001A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	6/23/2022 7:50:58 PM	G88994
Surr: BFB	102	0	70-130		%Rec	1	6/23/2022 7:50:58 PM	G88994
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	6/24/2022 9:43:00 PM	R89017
Toluene	0.43	0.20	1.0	J	µg/L	1	6/24/2022 9:43:00 PM	R89017
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/24/2022 9:43:00 PM	R89017
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	6/24/2022 9:43:00 PM	R89017
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/24/2022 9:43:00 PM	R89017
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/24/2022 9:43:00 PM	R89017
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/24/2022 9:43:00 PM	R89017
Acetone	3.4	2.5	10	J	µg/L	1	6/24/2022 9:43:00 PM	R89017
Bromomethane	ND	0.85	3.0		µg/L	1	6/24/2022 9:43:00 PM	R89017
2-Butanone	ND	2.0	10		µg/L	1	6/24/2022 9:43:00 PM	R89017
Carbon disulfide	ND	0.59	10		µg/L	1	6/24/2022 9:43:00 PM	R89017
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/24/2022 9:43:00 PM	R89017
Chloroform	ND	0.13	1.0		µg/L	1	6/24/2022 9:43:00 PM	R89017
Chloromethane	ND	0.41	3.0		µg/L	1	6/24/2022 9:43:00 PM	R89017
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/24/2022 9:43:00 PM	R89017
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/24/2022 9:43:00 PM	R89017
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/24/2022 9:43:00 PM	R89017
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/24/2022 9:43:00 PM	R89017
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/24/2022 9:43:00 PM	R89017
Methylene Chloride	ND	0.50	3.0		µg/L	1	6/24/2022 9:43:00 PM	R89017
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/24/2022 9:43:00 PM	R89017
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/24/2022 9:43:00 PM	R89017
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	6/24/2022 9:43:00 PM	R89017
Styrene	ND	0.14	1.0		µg/L	1	6/24/2022 9:43:00 PM	R89017
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/24/2022 9:43:00 PM	R89017
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/24/2022 9:43:00 PM	R89017
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/24/2022 9:43:00 PM	R89017
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/24/2022 9:43:00 PM	R89017
Xylenes, Total	0.41	0.37	1.5	J	µg/L	1	6/24/2022 9:43:00 PM	R89017
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%Rec	1	6/24/2022 9:43:00 PM	R89017
Surr: 4-Bromofluorobenzene	96.8	0	70-130		%Rec	1	6/24/2022 9:43:00 PM	R89017
Surr: Dibromofluoromethane	99.8	0	70-130		%Rec	1	6/24/2022 9:43:00 PM	R89017
Surr: Toluene-d8	98.8	0	70-130		%Rec	1	6/24/2022 9:43:00 PM	R89017

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Estimated value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-16-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022 8:30:00 AM
Lab ID: 2206938-001B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	6/21/2022 11:57:26 AM	68190

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-16-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022 8:30:00 AM
Lab ID: 2206938-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.039	0.016	0.064	J	mg/L	1	7/5/2022 11:58:09 AM	68262
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	7/5/2022 11:58:09 AM	68262
Surr: DNOP	95.5	0	42.2-138		%Rec	1	7/5/2022 11:58:09 AM	68262
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	6/30/2022 4:48:22 PM	68218
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	6/30/2022 4:48:22 PM	68218
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	6/30/2022 4:48:22 PM	68218
Di-n-octyl phthalate	ND	12	20		µg/L	1	6/30/2022 4:48:22 PM	68218
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	6/30/2022 4:48:22 PM	68218
Diethyl phthalate	ND	6.0	10		µg/L	1	6/30/2022 4:48:22 PM	68218
Dimethyl phthalate	ND	6.0	10		µg/L	1	6/30/2022 4:48:22 PM	68218
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	6/30/2022 4:48:22 PM	68218
2,4-Dinitrophenol	ND	16	20		µg/L	1	6/30/2022 4:48:22 PM	68218
2-Methylphenol	ND	5.0	10		µg/L	1	6/30/2022 4:48:22 PM	68218
3+4-Methylphenol	ND	5.1	10		µg/L	1	6/30/2022 4:48:22 PM	68218
Phenol	ND	18	20		µg/L	1	6/30/2022 4:48:22 PM	68218
Pyridine	ND	14	40		µg/L	1	6/30/2022 4:48:22 PM	68218
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	6/30/2022 4:48:22 PM	68218
Surr: 2-Fluorophenol	59.6	0	29.4-87.7		%Rec	1	6/30/2022 4:48:22 PM	68218
Surr: Phenol-d5	44.4	0	28.5-64.7		%Rec	1	6/30/2022 4:48:22 PM	68218
Surr: 2,4,6-Tribromophenol	75.0	0	18.6-129		%Rec	1	6/30/2022 4:48:22 PM	68218
Surr: Nitrobenzene-d5	63.5	0	36.9-103		%Rec	1	6/30/2022 4:48:22 PM	68218
Surr: 2-Fluorobiphenyl	67.2	0	38.1-99.9		%Rec	1	6/30/2022 4:48:22 PM	68218
Surr: 4-Terphenyl-d14	86.7	0	48-155		%Rec	1	6/30/2022 4:48:22 PM	68218
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	6/29/2022 3:20:00 AM	68218
Naphthalene	ND	0.20	0.30		µg/L	1	6/29/2022 3:20:00 AM	68218
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	6/29/2022 3:20:00 AM	68218
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	6/29/2022 3:20:00 AM	68218
Acenaphthene	ND	0.14	0.30		µg/L	1	6/29/2022 3:20:00 AM	68218
Fluorene	ND	0.095	0.30		µg/L	1	6/29/2022 3:20:00 AM	68218
Phenanthrene	ND	0.16	0.30		µg/L	1	6/29/2022 3:20:00 AM	68218
Anthracene	ND	0.14	0.30		µg/L	1	6/29/2022 3:20:00 AM	68218
Fluoranthene	ND	0.14	0.30		µg/L	1	6/29/2022 3:20:00 AM	68218
Pyrene	ND	0.32	1.0		µg/L	1	6/29/2022 3:20:00 AM	68218
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	6/29/2022 3:20:00 AM	68218
Chrysene	ND	0.25	0.30		µg/L	1	6/29/2022 3:20:00 AM	68218
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	6/29/2022 3:20:00 AM	68218
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	6/29/2022 3:20:00 AM	68218

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-16-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022 8:30:00 AM
Lab ID: 2206938-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	75.7	0	31.6-100		%Rec	1	6/29/2022 3:20:00 AM	68218
Surr: 2-Fluorobiphenyl	69.2	0	26.7-90.1		%Rec	1	6/29/2022 3:20:00 AM	68218
Surr: 4-Terphenyl-d14	93.6	0	72.3-147		%Rec	1	6/29/2022 3:20:00 AM	68218

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-16-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022 8:30:00 AM
Lab ID: 2206938-001D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	ND	0.0016	0.0030		mg/L	1	6/20/2022 3:15:43 PM	68213
Beryllium	ND	0.00088	0.0020		mg/L	1	6/20/2022 3:15:43 PM	68213
Cadmium	ND	0.0018	0.0020		mg/L	1	6/20/2022 3:15:43 PM	68213
Chromium	ND	0.0020	0.0060		mg/L	1	6/20/2022 3:15:43 PM	68213
Cobalt	ND	0.0035	0.0060		mg/L	1	6/20/2022 3:15:43 PM	68213
Nickel	ND	0.0053	0.010		mg/L	1	6/20/2022 3:15:43 PM	68213
Silver	ND	0.0018	0.0050		mg/L	1	6/20/2022 3:15:43 PM	68213
Vanadium	ND	0.0035	0.050		mg/L	1	6/20/2022 3:15:43 PM	68213
Zinc	ND	0.0039	0.010		mg/L	1	6/23/2022 4:47:49 PM	68301
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/20/2022 5:32:02 PM	68213
Arsenic	ND	0.00013	0.0010		mg/L	1	6/20/2022 5:32:02 PM	68213
Lead	0.000065	0.000061	0.00050	J	mg/L	1	6/20/2022 5:32:02 PM	68213
Selenium	ND	0.00037	0.0010		mg/L	1	6/20/2022 5:32:02 PM	68213
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/20/2022 12:16:45 PM	68220

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-16-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022 8:30:00 AM
Lab ID: 2206938-001E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	ND	0.0011	0.0020		mg/L	1	6/20/2022 7:20:15 PM	C88897
Beryllium	ND	0.00088	0.0020		mg/L	1	6/20/2022 7:20:15 PM	C88897
Cadmium	ND	0.00098	0.0020		mg/L	1	6/20/2022 7:20:15 PM	C88897
Chromium	ND	0.0020	0.0060		mg/L	1	6/20/2022 7:20:15 PM	C88897
Cobalt	ND	0.0024	0.0060		mg/L	1	6/20/2022 7:20:15 PM	C88897
Nickel	ND	0.0033	0.010		mg/L	1	6/20/2022 7:20:15 PM	C88897
Silver	ND	0.0013	0.0050		mg/L	1	6/20/2022 7:20:15 PM	C88897
Vanadium	ND	0.0017	0.050		mg/L	1	6/20/2022 7:20:15 PM	C88897
Zinc	0.0058	0.0032	0.010	J	mg/L	1	6/20/2022 7:20:15 PM	C88897
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/21/2022 2:04:53 PM	C88918
Arsenic	ND	0.00012	0.0010		mg/L	1	6/21/2022 2:04:53 PM	C88918
Lead	ND	0.000057	0.00050		mg/L	1	6/21/2022 2:04:53 PM	C88918
Selenium	ND	0.00034	0.0010		mg/L	1	6/21/2022 2:04:53 PM	C88918
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/20/2022 12:23:14 PM	68220

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-60
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022 8:45:00 AM
Lab ID: 2206938-002A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	6/23/2022 8:14:35 PM	G88994
Surr: BFB	145	0	70-130	S	%Rec	1	6/23/2022 8:14:35 PM	G88994
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	6/24/2022 10:06:00 PM	R89017
Toluene	0.24	0.20	1.0	J	µg/L	1	6/24/2022 10:06:00 PM	R89017
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/24/2022 10:06:00 PM	R89017
Methyl tert-butyl ether (MTBE)	0.43	0.39	1.0	J	µg/L	1	6/24/2022 10:06:00 PM	R89017
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/24/2022 10:06:00 PM	R89017
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/24/2022 10:06:00 PM	R89017
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/24/2022 10:06:00 PM	R89017
Acetone	ND	2.5	10		µg/L	1	6/24/2022 10:06:00 PM	R89017
Bromomethane	ND	0.85	3.0		µg/L	1	6/24/2022 10:06:00 PM	R89017
2-Butanone	ND	2.0	10		µg/L	1	6/24/2022 10:06:00 PM	R89017
Carbon disulfide	ND	0.59	10		µg/L	1	6/24/2022 10:06:00 PM	R89017
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/24/2022 10:06:00 PM	R89017
Chloroform	ND	0.13	1.0		µg/L	1	6/24/2022 10:06:00 PM	R89017
Chloromethane	ND	0.41	3.0		µg/L	1	6/24/2022 10:06:00 PM	R89017
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/24/2022 10:06:00 PM	R89017
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/24/2022 10:06:00 PM	R89017
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/24/2022 10:06:00 PM	R89017
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/24/2022 10:06:00 PM	R89017
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/24/2022 10:06:00 PM	R89017
Methylene Chloride	ND	0.50	3.0		µg/L	1	6/24/2022 10:06:00 PM	R89017
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/24/2022 10:06:00 PM	R89017
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/24/2022 10:06:00 PM	R89017
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	6/24/2022 10:06:00 PM	R89017
Styrene	ND	0.14	1.0		µg/L	1	6/24/2022 10:06:00 PM	R89017
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/24/2022 10:06:00 PM	R89017
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/24/2022 10:06:00 PM	R89017
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/24/2022 10:06:00 PM	R89017
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/24/2022 10:06:00 PM	R89017
Xylenes, Total	ND	0.37	1.5		µg/L	1	6/24/2022 10:06:00 PM	R89017
Surr: 1,2-Dichloroethane-d4	104	0	70-130		%Rec	1	6/24/2022 10:06:00 PM	R89017
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	6/24/2022 10:06:00 PM	R89017
Surr: Dibromofluoromethane	106	0	70-130		%Rec	1	6/24/2022 10:06:00 PM	R89017
Surr: Toluene-d8	99.7	0	70-130		%Rec	1	6/24/2022 10:06:00 PM	R89017

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-60
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022 8:45:00 AM
Lab ID: 2206938-002B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0027	0.0093		µg/L	1	6/21/2022 12:12:27 PM	68190

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-60
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022 8:45:00 AM
Lab ID: 2206938-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.082	0.016	0.064		mg/L	1	7/5/2022 12:21:59 PM	68262
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	7/5/2022 12:21:59 PM	68262
Surr: DNOP	76.2	0	42.2-138		%Rec	1	7/5/2022 12:21:59 PM	68262
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	6/30/2022 5:30:57 PM	68218
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	6/30/2022 5:30:57 PM	68218
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	6/30/2022 5:30:57 PM	68218
Di-n-octyl phthalate	ND	12	20		µg/L	1	6/30/2022 5:30:57 PM	68218
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	6/30/2022 5:30:57 PM	68218
Diethyl phthalate	ND	6.0	10		µg/L	1	6/30/2022 5:30:57 PM	68218
Dimethyl phthalate	ND	6.0	10		µg/L	1	6/30/2022 5:30:57 PM	68218
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	6/30/2022 5:30:57 PM	68218
2,4-Dinitrophenol	ND	16	20		µg/L	1	6/30/2022 5:30:57 PM	68218
2-Methylphenol	ND	5.0	10		µg/L	1	6/30/2022 5:30:57 PM	68218
3+4-Methylphenol	ND	5.1	10		µg/L	1	6/30/2022 5:30:57 PM	68218
Phenol	ND	18	20		µg/L	1	6/30/2022 5:30:57 PM	68218
Pyridine	ND	14	40		µg/L	1	6/30/2022 5:30:57 PM	68218
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	6/30/2022 5:30:57 PM	68218
Surr: 2-Fluorophenol	30.8	0	29.4-87.7		%Rec	1	6/30/2022 5:30:57 PM	68218
Surr: Phenol-d5	38.5	0	28.5-64.7		%Rec	1	6/30/2022 5:30:57 PM	68218
Surr: 2,4,6-Tribromophenol	11.2	0	18.6-129	S	%Rec	1	6/30/2022 5:30:57 PM	68218
Surr: Nitrobenzene-d5	62.5	0	36.9-103		%Rec	1	6/30/2022 5:30:57 PM	68218
Surr: 2-Fluorobiphenyl	68.7	0	38.1-99.9		%Rec	1	6/30/2022 5:30:57 PM	68218
Surr: 4-Terphenyl-d14	83.0	0	48-155		%Rec	1	6/30/2022 5:30:57 PM	68218
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	0.24	0.11	1.0	J	µg/L	1	6/29/2022 4:04:00 AM	68218
Naphthalene	ND	0.20	0.30		µg/L	1	6/29/2022 4:04:00 AM	68218
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	6/29/2022 4:04:00 AM	68218
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	6/29/2022 4:04:00 AM	68218
Acenaphthene	ND	0.14	0.30		µg/L	1	6/29/2022 4:04:00 AM	68218
Fluorene	ND	0.095	0.30		µg/L	1	6/29/2022 4:04:00 AM	68218
Phenanthrene	ND	0.16	0.30		µg/L	1	6/29/2022 4:04:00 AM	68218
Anthracene	ND	0.14	0.30		µg/L	1	6/29/2022 4:04:00 AM	68218
Fluoranthene	ND	0.14	0.30		µg/L	1	6/29/2022 4:04:00 AM	68218
Pyrene	ND	0.32	1.0		µg/L	1	6/29/2022 4:04:00 AM	68218
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	6/29/2022 4:04:00 AM	68218
Chrysene	ND	0.25	0.30		µg/L	1	6/29/2022 4:04:00 AM	68218
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	6/29/2022 4:04:00 AM	68218
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	6/29/2022 4:04:00 AM	68218

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-60
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022 8:45:00 AM
Lab ID: 2206938-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	73.8	0	31.6-100		%Rec	1	6/29/2022 4:04:00 AM	68218
Surr: 2-Fluorobiphenyl	67.0	0	26.7-90.1		%Rec	1	6/29/2022 4:04:00 AM	68218
Surr: 4-Terphenyl-d14	89.1	0	72.3-147		%Rec	1	6/29/2022 4:04:00 AM	68218

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-60
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022 8:45:00 AM
Lab ID: 2206938-002D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	1.4	0.0079	0.015		mg/L	5	6/28/2022 3:24:20 PM	68301
Beryllium	0.0011	0.00088	0.0020	J	mg/L	1	6/20/2022 3:17:21 PM	68213
Cadmium	ND	0.0018	0.0020		mg/L	1	6/20/2022 3:17:21 PM	68213
Chromium	0.059	0.0020	0.0060		mg/L	1	6/20/2022 3:17:21 PM	68213
Cobalt	0.020	0.0035	0.0060		mg/L	1	6/20/2022 3:17:21 PM	68213
Nickel	0.077	0.0053	0.010		mg/L	1	6/20/2022 3:17:21 PM	68213
Silver	ND	0.0018	0.0050		mg/L	1	6/20/2022 3:17:21 PM	68213
Vanadium	0.091	0.0035	0.050		mg/L	1	6/20/2022 3:17:21 PM	68213
Zinc	0.12	0.0039	0.010		mg/L	1	6/23/2022 4:49:27 PM	68301
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0044	0.010		mg/L	10	6/20/2022 5:34:29 PM	68213
Arsenic	0.0077	0.0013	0.010	J	mg/L	10	6/20/2022 5:34:29 PM	68213
Lead	0.023	0.00061	0.0050	*	mg/L	10	6/20/2022 5:34:29 PM	68213
Selenium	0.023	0.0037	0.010		mg/L	10	6/20/2022 5:34:29 PM	68213
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/20/2022 12:29:37 PM	68220

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-60
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022 8:45:00 AM
Lab ID: 2206938-002E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.030	0.0011	0.0020		mg/L	1	6/21/2022 7:02:42 PM	A88936
Beryllium	ND	0.00088	0.0020		mg/L	1	6/21/2022 7:02:42 PM	A88936
Cadmium	ND	0.00098	0.0020		mg/L	1	6/21/2022 7:02:42 PM	A88936
Chromium	0.0054	0.0020	0.0060	J	mg/L	1	6/21/2022 7:02:42 PM	A88936
Cobalt	ND	0.0024	0.0060		mg/L	1	6/21/2022 7:02:42 PM	A88936
Nickel	0.0037	0.0033	0.010	J	mg/L	1	6/21/2022 7:02:42 PM	A88936
Silver	0.0029	0.0013	0.0050	J	mg/L	1	6/21/2022 7:02:42 PM	A88936
Vanadium	0.012	0.0017	0.050	J	mg/L	1	6/21/2022 7:02:42 PM	A88936
Zinc	0.011	0.0032	0.010		mg/L	1	6/21/2022 7:02:42 PM	A88936
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/21/2022 2:07:35 PM	C88918
Arsenic	0.0014	0.00061	0.0050	J	mg/L	5	6/21/2022 3:41:42 PM	C88918
Lead	ND	0.00028	0.0025		mg/L	5	6/21/2022 3:41:42 PM	C88918
Selenium	0.016	0.0017	0.0050		mg/L	5	6/21/2022 3:41:42 PM	C88918
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/20/2022 12:31:46 PM	68220

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-68
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022 9:15:00 AM
Lab ID: 2206938-003A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	0.95	0.0090	0.050		mg/L	1	6/24/2022 9:24:35 AM	A89029
Surr: BFB	3120	0	70-130	S	%Rec	1	6/24/2022 9:24:35 AM	A89029
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	7.0	0.23	1.0		µg/L	1	6/24/2022 10:29:00 PM	R89017
Toluene	1.0	0.20	1.0		µg/L	1	6/24/2022 10:29:00 PM	R89017
Ethylbenzene	5.0	0.21	1.0		µg/L	1	6/24/2022 10:29:00 PM	R89017
Methyl tert-butyl ether (MTBE)	0.71	0.39	1.0	J	µg/L	1	6/24/2022 10:29:00 PM	R89017
1,2,4-Trimethylbenzene	2.1	0.12	1.0		µg/L	1	6/24/2022 10:29:00 PM	R89017
1,3,5-Trimethylbenzene	0.27	0.18	1.0	J	µg/L	1	6/24/2022 10:29:00 PM	R89017
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/24/2022 10:29:00 PM	R89017
Acetone	9.8	2.5	10	J	µg/L	1	6/24/2022 10:29:00 PM	R89017
Bromomethane	ND	0.85	3.0		µg/L	1	6/24/2022 10:29:00 PM	R89017
2-Butanone	ND	2.0	10		µg/L	1	6/24/2022 10:29:00 PM	R89017
Carbon disulfide	ND	0.59	10		µg/L	1	6/24/2022 10:29:00 PM	R89017
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/24/2022 10:29:00 PM	R89017
Chloroform	ND	0.13	1.0		µg/L	1	6/24/2022 10:29:00 PM	R89017
Chloromethane	ND	0.41	3.0		µg/L	1	6/24/2022 10:29:00 PM	R89017
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/24/2022 10:29:00 PM	R89017
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/24/2022 10:29:00 PM	R89017
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/24/2022 10:29:00 PM	R89017
Isopropylbenzene	1.4	0.18	1.0		µg/L	1	6/24/2022 10:29:00 PM	R89017
4-Isopropyltoluene	0.29	0.20	1.0	J	µg/L	1	6/24/2022 10:29:00 PM	R89017
Methylene Chloride	ND	0.50	3.0		µg/L	1	6/24/2022 10:29:00 PM	R89017
n-Butylbenzene	0.67	0.25	3.0	J	µg/L	1	6/24/2022 10:29:00 PM	R89017
n-Propylbenzene	2.3	0.18	1.0		µg/L	1	6/24/2022 10:29:00 PM	R89017
sec-Butylbenzene	0.65	0.14	1.0	J	µg/L	1	6/24/2022 10:29:00 PM	R89017
Styrene	0.14	0.14	1.0	J	µg/L	1	6/24/2022 10:29:00 PM	R89017
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/24/2022 10:29:00 PM	R89017
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/24/2022 10:29:00 PM	R89017
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/24/2022 10:29:00 PM	R89017
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/24/2022 10:29:00 PM	R89017
Xylenes, Total	4.1	0.37	1.5		µg/L	1	6/24/2022 10:29:00 PM	R89017
Surr: 1,2-Dichloroethane-d4	103	0	70-130		%Rec	1	6/24/2022 10:29:00 PM	R89017
Surr: 4-Bromofluorobenzene	106	0	70-130		%Rec	1	6/24/2022 10:29:00 PM	R89017
Surr: Dibromofluoromethane	104	0	70-130		%Rec	1	6/24/2022 10:29:00 PM	R89017
Surr: Toluene-d8	102	0	70-130		%Rec	1	6/24/2022 10:29:00 PM	R89017

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-68
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022 9:15:00 AM
Lab ID: 2206938-003B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	6/21/2022 5:47:07 PM	68190

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-68
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022 9:15:00 AM
Lab ID: 2206938-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	1.4	0.016	0.064		mg/L	1	7/5/2022 12:45:49 PM	68262
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	7/5/2022 12:45:49 PM	68262
Surr: DNOP	76.2	0	42.2-138		%Rec	1	7/5/2022 12:45:49 PM	68262
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	6/30/2022 6:15:13 PM	68218
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	6/30/2022 6:15:13 PM	68218
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	6/30/2022 6:15:13 PM	68218
Di-n-octyl phthalate	ND	12	20		µg/L	1	6/30/2022 6:15:13 PM	68218
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	6/30/2022 6:15:13 PM	68218
Diethyl phthalate	ND	6.0	10		µg/L	1	6/30/2022 6:15:13 PM	68218
Dimethyl phthalate	ND	6.0	10		µg/L	1	6/30/2022 6:15:13 PM	68218
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	6/30/2022 6:15:13 PM	68218
2,4-Dinitrophenol	ND	16	20		µg/L	1	6/30/2022 6:15:13 PM	68218
2-Methylphenol	ND	5.0	10		µg/L	1	6/30/2022 6:15:13 PM	68218
3+4-Methylphenol	ND	5.1	10		µg/L	1	6/30/2022 6:15:13 PM	68218
Phenol	ND	18	20		µg/L	1	6/30/2022 6:15:13 PM	68218
Pyridine	ND	14	40		µg/L	1	6/30/2022 6:15:13 PM	68218
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	6/30/2022 6:15:13 PM	68218
Surr: 2-Fluorophenol	2.09	0	29.4-87.7	S	%Rec	1	6/30/2022 6:15:13 PM	68218
Surr: Phenol-d5	10.4	0	28.5-64.7	S	%Rec	1	6/30/2022 6:15:13 PM	68218
Surr: 2,4,6-Tribromophenol	2.60	0	18.6-129	S	%Rec	1	6/30/2022 6:15:13 PM	68218
Surr: Nitrobenzene-d5	62.3	0	36.9-103		%Rec	1	6/30/2022 6:15:13 PM	68218
Surr: 2-Fluorobiphenyl	68.3	0	38.1-99.9		%Rec	1	6/30/2022 6:15:13 PM	68218
Surr: 4-Terphenyl-d14	87.0	0	48-155		%Rec	1	6/30/2022 6:15:13 PM	68218
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	6.5	0.11	1.0		µg/L	1	6/29/2022 4:47:00 AM	68218
Naphthalene	ND	0.20	0.30		µg/L	1	6/29/2022 4:47:00 AM	68218
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	6/29/2022 4:47:00 AM	68218
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	6/29/2022 4:47:00 AM	68218
Acenaphthene	0.58	0.14	0.30		µg/L	1	6/29/2022 4:47:00 AM	68218
Fluorene	ND	0.095	0.30		µg/L	1	6/29/2022 4:47:00 AM	68218
Phenanthrene	ND	0.16	0.30		µg/L	1	6/29/2022 4:47:00 AM	68218
Anthracene	ND	0.14	0.30		µg/L	1	6/29/2022 4:47:00 AM	68218
Fluoranthene	ND	0.14	0.30		µg/L	1	6/29/2022 4:47:00 AM	68218
Pyrene	ND	0.32	1.0		µg/L	1	6/29/2022 4:47:00 AM	68218
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	6/29/2022 4:47:00 AM	68218
Chrysene	ND	0.25	0.30		µg/L	1	6/29/2022 4:47:00 AM	68218
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	6/29/2022 4:47:00 AM	68218
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	6/29/2022 4:47:00 AM	68218

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-68
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022 9:15:00 AM
Lab ID: 2206938-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	72.8	0	31.6-100		%Rec	1	6/29/2022 4:47:00 AM	68218
Surr: 2-Fluorobiphenyl	63.3	0	26.7-90.1		%Rec	1	6/29/2022 4:47:00 AM	68218
Surr: 4-Terphenyl-d14	78.9	0	72.3-147		%Rec	1	6/29/2022 4:47:00 AM	68218

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-68
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022 9:15:00 AM
Lab ID: 2206938-003D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	0.25	0.0079	0.015		mg/L	5	6/20/2022 3:56:26 PM	68213
Beryllium	ND	0.0044	0.010		mg/L	5	6/20/2022 3:56:26 PM	68213
Cadmium	ND	0.0088	0.010		mg/L	5	6/20/2022 3:56:26 PM	68213
Chromium	ND	0.0098	0.030		mg/L	5	6/20/2022 3:56:26 PM	68213
Cobalt	0.093	0.018	0.030		mg/L	5	6/20/2022 3:56:26 PM	68213
Nickel	0.18	0.027	0.050	*	mg/L	5	6/20/2022 3:56:26 PM	68213
Silver	ND	0.0092	0.025		mg/L	5	6/20/2022 3:56:26 PM	68213
Vanadium	0.024	0.018	0.25	J	mg/L	5	6/20/2022 3:56:26 PM	68213
Zinc	0.039	0.019	0.050	J	mg/L	5	6/23/2022 4:50:57 PM	68301
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0089	0.020		mg/L	20	6/20/2022 6:45:24 PM	68213
Arsenic	0.020	0.0025	0.020	J*	mg/L	20	6/20/2022 6:45:24 PM	68213
Lead	0.018	0.0012	0.010	*	mg/L	20	6/20/2022 6:45:24 PM	68213
Selenium	0.016	0.0074	0.020	J	mg/L	20	6/20/2022 6:45:24 PM	68213
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/20/2022 12:33:54 PM	68220

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-68
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022 9:15:00 AM
Lab ID: 2206938-003E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.056	0.0011	0.0020		mg/L	1	6/21/2022 7:05:02 PM	A88936
Beryllium	ND	0.00088	0.0020		mg/L	1	6/21/2022 7:05:02 PM	A88936
Cadmium	0.0020	0.00098	0.0020	J	mg/L	1	6/21/2022 7:05:02 PM	A88936
Chromium	ND	0.0020	0.0060		mg/L	1	6/21/2022 7:05:02 PM	A88936
Cobalt	0.065	0.0024	0.0060		mg/L	1	6/21/2022 7:05:02 PM	A88936
Nickel	0.17	0.0033	0.010	*	mg/L	1	6/21/2022 7:05:02 PM	A88936
Silver	0.011	0.0013	0.0050		mg/L	1	6/21/2022 7:05:02 PM	A88936
Vanadium	0.012	0.0017	0.050	J	mg/L	1	6/21/2022 7:05:02 PM	A88936
Zinc	0.016	0.0032	0.010		mg/L	1	6/21/2022 7:05:02 PM	A88936
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0044	0.010		mg/L	10	6/21/2022 2:10:16 PM	C88918
Arsenic	0.010	0.0012	0.010	*	mg/L	10	6/21/2022 2:10:16 PM	C88918
Lead	0.0060	0.00057	0.0050		mg/L	10	6/21/2022 2:10:16 PM	C88918
Selenium	0.0075	0.0034	0.010	J	mg/L	10	6/21/2022 2:10:16 PM	C88918
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/20/2022 12:36:03 PM	68220

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-67
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022 9:45:00 AM
Lab ID: 2206938-004A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	0.27	0.0090	0.050		mg/L	1	6/24/2022 10:11:38 AM	A89029
Surr: BFB	1310	0	70-130	S	%Rec	1	6/24/2022 10:11:38 AM	A89029
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	6/24/2022 10:52:00 PM	R89017
Toluene	ND	0.20	1.0		µg/L	1	6/24/2022 10:52:00 PM	R89017
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/24/2022 10:52:00 PM	R89017
Methyl tert-butyl ether (MTBE)	36	0.39	1.0		µg/L	1	6/24/2022 10:52:00 PM	R89017
1,2,4-Trimethylbenzene	0.14	0.12	1.0	J	µg/L	1	6/24/2022 10:52:00 PM	R89017
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/24/2022 10:52:00 PM	R89017
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/24/2022 10:52:00 PM	R89017
Acetone	ND	2.5	10		µg/L	1	6/24/2022 10:52:00 PM	R89017
Bromomethane	ND	0.85	3.0		µg/L	1	6/24/2022 10:52:00 PM	R89017
2-Butanone	ND	2.0	10		µg/L	1	6/24/2022 10:52:00 PM	R89017
Carbon disulfide	ND	0.59	10		µg/L	1	6/24/2022 10:52:00 PM	R89017
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/24/2022 10:52:00 PM	R89017
Chloroform	ND	0.13	1.0		µg/L	1	6/24/2022 10:52:00 PM	R89017
Chloromethane	ND	0.41	3.0		µg/L	1	6/24/2022 10:52:00 PM	R89017
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/24/2022 10:52:00 PM	R89017
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/24/2022 10:52:00 PM	R89017
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/24/2022 10:52:00 PM	R89017
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/24/2022 10:52:00 PM	R89017
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/24/2022 10:52:00 PM	R89017
Methylene Chloride	ND	0.50	3.0		µg/L	1	6/24/2022 10:52:00 PM	R89017
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/24/2022 10:52:00 PM	R89017
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/24/2022 10:52:00 PM	R89017
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	6/24/2022 10:52:00 PM	R89017
Styrene	ND	0.14	1.0		µg/L	1	6/24/2022 10:52:00 PM	R89017
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/24/2022 10:52:00 PM	R89017
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/24/2022 10:52:00 PM	R89017
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/24/2022 10:52:00 PM	R89017
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/24/2022 10:52:00 PM	R89017
Xylenes, Total	ND	0.37	1.5		µg/L	1	6/24/2022 10:52:00 PM	R89017
Surr: 1,2-Dichloroethane-d4	104	0	70-130		%Rec	1	6/24/2022 10:52:00 PM	R89017
Surr: 4-Bromofluorobenzene	109	0	70-130		%Rec	1	6/24/2022 10:52:00 PM	R89017
Surr: Dibromofluoromethane	103	0	70-130		%Rec	1	6/24/2022 10:52:00 PM	R89017
Surr: Toluene-d8	96.9	0	70-130		%Rec	1	6/24/2022 10:52:00 PM	R89017

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-67
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022 9:45:00 AM
Lab ID: 2206938-004B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	6/21/2022 1:01:08 PM	68190

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-67
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022 9:45:00 AM
Lab ID: 2206938-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.77	0.016	0.064		mg/L	1	7/5/2022 2:45:23 PM	68262
Motor Oil Range Organics (MRO)	0.97	0.052	0.080		mg/L	1	7/5/2022 2:45:23 PM	68262
Surr: DNOP	78.2	0	42.2-138		%Rec	1	7/5/2022 2:45:23 PM	68262
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	6/30/2022 6:59:20 PM	68218
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	6/30/2022 6:59:20 PM	68218
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	6/30/2022 6:59:20 PM	68218
Di-n-octyl phthalate	ND	12	20		µg/L	1	6/30/2022 6:59:20 PM	68218
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	6/30/2022 6:59:20 PM	68218
Diethyl phthalate	ND	6.0	10		µg/L	1	6/30/2022 6:59:20 PM	68218
Dimethyl phthalate	ND	6.0	10		µg/L	1	6/30/2022 6:59:20 PM	68218
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	6/30/2022 6:59:20 PM	68218
2,4-Dinitrophenol	ND	16	20		µg/L	1	6/30/2022 6:59:20 PM	68218
2-Methylphenol	ND	5.0	10		µg/L	1	6/30/2022 6:59:20 PM	68218
3+4-Methylphenol	ND	5.1	10		µg/L	1	6/30/2022 6:59:20 PM	68218
Phenol	ND	18	20		µg/L	1	6/30/2022 6:59:20 PM	68218
Pyridine	ND	14	40		µg/L	1	6/30/2022 6:59:20 PM	68218
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	6/30/2022 6:59:20 PM	68218
Surr: 2-Fluorophenol	1.47	0	29.4-87.7	S	%Rec	1	6/30/2022 6:59:20 PM	68218
Surr: Phenol-d5	9.05	0	28.5-64.7	S	%Rec	1	6/30/2022 6:59:20 PM	68218
Surr: 2,4,6-Tribromophenol	0	0	18.6-129	S	%Rec	1	6/30/2022 6:59:20 PM	68218
Surr: Nitrobenzene-d5	59.9	0	36.9-103		%Rec	1	6/30/2022 6:59:20 PM	68218
Surr: 2-Fluorobiphenyl	64.7	0	38.1-99.9		%Rec	1	6/30/2022 6:59:20 PM	68218
Surr: 4-Terphenyl-d14	87.1	0	48-155		%Rec	1	6/30/2022 6:59:20 PM	68218
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	4.8	0.11	1.0		µg/L	1	6/29/2022 5:31:00 AM	68218
Naphthalene	ND	0.20	0.30		µg/L	1	6/29/2022 5:31:00 AM	68218
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	6/29/2022 5:31:00 AM	68218
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	6/29/2022 5:31:00 AM	68218
Acenaphthene	ND	0.14	0.30		µg/L	1	6/29/2022 5:31:00 AM	68218
Fluorene	ND	0.095	0.30		µg/L	1	6/29/2022 5:31:00 AM	68218
Phenanthrene	ND	0.16	0.30		µg/L	1	6/29/2022 5:31:00 AM	68218
Anthracene	ND	0.14	0.30		µg/L	1	6/29/2022 5:31:00 AM	68218
Fluoranthene	ND	0.14	0.30		µg/L	1	6/29/2022 5:31:00 AM	68218
Pyrene	ND	0.32	1.0		µg/L	1	6/29/2022 5:31:00 AM	68218
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	6/29/2022 5:31:00 AM	68218
Chrysene	ND	0.25	0.30		µg/L	1	6/29/2022 5:31:00 AM	68218
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	6/29/2022 5:31:00 AM	68218
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	6/29/2022 5:31:00 AM	68218

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-67
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022 9:45:00 AM
Lab ID: 2206938-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	68.6	0	31.6-100		%Rec	1	6/29/2022 5:31:00 AM	68218
Surr: 2-Fluorobiphenyl	59.2	0	26.7-90.1		%Rec	1	6/29/2022 5:31:00 AM	68218
Surr: 4-Terphenyl-d14	77.9	0	72.3-147		%Rec	1	6/29/2022 5:31:00 AM	68218

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-67
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022 9:45:00 AM
Lab ID: 2206938-004D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	0.60	0.0079	0.015		mg/L	5	6/20/2022 3:57:53 PM	68213
Beryllium	ND	0.0044	0.010		mg/L	5	6/20/2022 3:57:53 PM	68213
Cadmium	ND	0.0088	0.010		mg/L	5	6/20/2022 3:57:53 PM	68213
Chromium	0.014	0.0098	0.030	J	mg/L	5	6/20/2022 3:57:53 PM	68213
Cobalt	0.029	0.018	0.030	J	mg/L	5	6/20/2022 3:57:53 PM	68213
Nickel	0.14	0.027	0.050	*	mg/L	5	6/20/2022 3:57:53 PM	68213
Silver	ND	0.0092	0.025		mg/L	5	6/20/2022 3:57:53 PM	68213
Vanadium	0.042	0.018	0.25	J	mg/L	5	6/20/2022 3:57:53 PM	68213
Zinc	0.035	0.019	0.050	J	mg/L	5	6/23/2022 4:52:21 PM	68301
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0044	0.010		mg/L	10	6/20/2022 5:39:21 PM	68213
Arsenic	0.0063	0.0013	0.010	J	mg/L	10	6/20/2022 5:39:21 PM	68213
Lead	0.011	0.00061	0.0050		mg/L	10	6/20/2022 5:39:21 PM	68213
Selenium	ND	0.0037	0.010		mg/L	10	6/20/2022 5:39:21 PM	68213
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/20/2022 12:38:11 PM	68220

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-67
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022 9:45:00 AM
Lab ID: 2206938-004E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.054	0.0011	0.0020		mg/L	1	6/21/2022 7:07:22 PM	A88936
Beryllium	ND	0.00088	0.0020		mg/L	1	6/21/2022 7:07:22 PM	A88936
Cadmium	ND	0.00098	0.0020		mg/L	1	6/21/2022 7:07:22 PM	A88936
Chromium	ND	0.0020	0.0060		mg/L	1	6/21/2022 7:07:22 PM	A88936
Cobalt	ND	0.0024	0.0060		mg/L	1	6/21/2022 7:07:22 PM	A88936
Nickel	0.12	0.0033	0.010	*	mg/L	1	6/21/2022 7:07:22 PM	A88936
Silver	0.020	0.0013	0.0050		mg/L	1	6/21/2022 7:07:22 PM	A88936
Vanadium	0.0055	0.0017	0.050	J	mg/L	1	6/21/2022 7:07:22 PM	A88936
Zinc	0.0072	0.0032	0.010	J	mg/L	1	6/21/2022 7:07:22 PM	A88936
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	6/21/2022 3:44:23 PM	C88918
Arsenic	0.0027	0.0024	0.020	J	mg/L	20	6/23/2022 12:45:36 PM	A88981
Lead	ND	0.00057	0.0050		mg/L	10	6/23/2022 11:24:53 AM	A88981
Selenium	ND	0.0069	0.020		mg/L	20	6/23/2022 12:45:36 PM	A88981
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/20/2022 12:40:20 PM	68220

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-43
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022 10:10:00 AM
Lab ID: 2206938-005A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	6/23/2022 9:25:28 PM	G88994
Surr: BFB	97.8	0	70-130		%Rec	1	6/23/2022 9:25:28 PM	G88994
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	6/24/2022 11:15:00 PM	R89017
Toluene	ND	0.20	1.0		µg/L	1	6/24/2022 11:15:00 PM	R89017
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/24/2022 11:15:00 PM	R89017
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	6/24/2022 11:15:00 PM	R89017
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/24/2022 11:15:00 PM	R89017
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/24/2022 11:15:00 PM	R89017
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/24/2022 11:15:00 PM	R89017
Acetone	ND	2.5	10		µg/L	1	6/24/2022 11:15:00 PM	R89017
Bromomethane	ND	0.85	3.0		µg/L	1	6/24/2022 11:15:00 PM	R89017
2-Butanone	ND	2.0	10		µg/L	1	6/24/2022 11:15:00 PM	R89017
Carbon disulfide	ND	0.59	10		µg/L	1	6/24/2022 11:15:00 PM	R89017
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/24/2022 11:15:00 PM	R89017
Chloroform	ND	0.13	1.0		µg/L	1	6/24/2022 11:15:00 PM	R89017
Chloromethane	ND	0.41	3.0		µg/L	1	6/24/2022 11:15:00 PM	R89017
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/24/2022 11:15:00 PM	R89017
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/24/2022 11:15:00 PM	R89017
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/24/2022 11:15:00 PM	R89017
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/24/2022 11:15:00 PM	R89017
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/24/2022 11:15:00 PM	R89017
Methylene Chloride	ND	0.50	3.0		µg/L	1	6/24/2022 11:15:00 PM	R89017
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/24/2022 11:15:00 PM	R89017
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/24/2022 11:15:00 PM	R89017
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	6/24/2022 11:15:00 PM	R89017
Styrene	ND	0.14	1.0		µg/L	1	6/24/2022 11:15:00 PM	R89017
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/24/2022 11:15:00 PM	R89017
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/24/2022 11:15:00 PM	R89017
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/24/2022 11:15:00 PM	R89017
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/24/2022 11:15:00 PM	R89017
Xylenes, Total	ND	0.37	1.5		µg/L	1	6/24/2022 11:15:00 PM	R89017
Surr: 1,2-Dichloroethane-d4	102	0	70-130		%Rec	1	6/24/2022 11:15:00 PM	R89017
Surr: 4-Bromofluorobenzene	98.6	0	70-130		%Rec	1	6/24/2022 11:15:00 PM	R89017
Surr: Dibromofluoromethane	104	0	70-130		%Rec	1	6/24/2022 11:15:00 PM	R89017
Surr: Toluene-d8	106	0	70-130		%Rec	1	6/24/2022 11:15:00 PM	R89017

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-43
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022 10:10:00 AM
Lab ID: 2206938-005B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	6/24/2022 2:17:45 AM	68319

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-43
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022 10:10:00 AM
Lab ID: 2206938-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.15	0.016	0.064		mg/L	1	7/5/2022 2:21:25 PM	68262
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	7/5/2022 2:21:25 PM	68262
Surr: DNOP	93.7	0	42.2-138		%Rec	1	7/5/2022 2:21:25 PM	68262
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	6/30/2022 7:42:52 PM	68218
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	6/30/2022 7:42:52 PM	68218
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	6/30/2022 7:42:52 PM	68218
Di-n-octyl phthalate	ND	12	20		µg/L	1	6/30/2022 7:42:52 PM	68218
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	6/30/2022 7:42:52 PM	68218
Diethyl phthalate	ND	6.0	10		µg/L	1	6/30/2022 7:42:52 PM	68218
Dimethyl phthalate	ND	6.0	10		µg/L	1	6/30/2022 7:42:52 PM	68218
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	6/30/2022 7:42:52 PM	68218
2,4-Dinitrophenol	ND	16	20		µg/L	1	6/30/2022 7:42:52 PM	68218
2-Methylphenol	ND	5.0	10		µg/L	1	6/30/2022 7:42:52 PM	68218
3+4-Methylphenol	ND	5.1	10		µg/L	1	6/30/2022 7:42:52 PM	68218
Phenol	ND	18	20		µg/L	1	6/30/2022 7:42:52 PM	68218
Pyridine	ND	14	40		µg/L	1	6/30/2022 7:42:52 PM	68218
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	6/30/2022 7:42:52 PM	68218
Surr: 2-Fluorophenol	1.31	0	29.4-87.7	S	%Rec	1	6/30/2022 7:42:52 PM	68218
Surr: Phenol-d5	8.24	0	28.5-64.7	S	%Rec	1	6/30/2022 7:42:52 PM	68218
Surr: 2,4,6-Tribromophenol	2.35	0	18.6-129	S	%Rec	1	6/30/2022 7:42:52 PM	68218
Surr: Nitrobenzene-d5	60.9	0	36.9-103		%Rec	1	6/30/2022 7:42:52 PM	68218
Surr: 2-Fluorobiphenyl	64.0	0	38.1-99.9		%Rec	1	6/30/2022 7:42:52 PM	68218
Surr: 4-Terphenyl-d14	84.4	0	48-155		%Rec	1	6/30/2022 7:42:52 PM	68218
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	6/29/2022 6:15:00 AM	68218
Naphthalene	ND	0.20	0.30		µg/L	1	6/29/2022 6:15:00 AM	68218
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	6/29/2022 6:15:00 AM	68218
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	6/29/2022 6:15:00 AM	68218
Acenaphthene	ND	0.14	0.30		µg/L	1	6/29/2022 6:15:00 AM	68218
Fluorene	ND	0.095	0.30		µg/L	1	6/29/2022 6:15:00 AM	68218
Phenanthrene	ND	0.16	0.30		µg/L	1	6/29/2022 6:15:00 AM	68218
Anthracene	ND	0.14	0.30		µg/L	1	6/29/2022 6:15:00 AM	68218
Fluoranthene	ND	0.14	0.30		µg/L	1	6/29/2022 6:15:00 AM	68218
Pyrene	ND	0.32	1.0		µg/L	1	6/29/2022 6:15:00 AM	68218
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	6/29/2022 6:15:00 AM	68218
Chrysene	ND	0.25	0.30		µg/L	1	6/29/2022 6:15:00 AM	68218
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	6/29/2022 6:15:00 AM	68218
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	6/29/2022 6:15:00 AM	68218

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-43
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022 10:10:00 AM
Lab ID: 2206938-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	70.7	0	31.6-100		%Rec	1	6/29/2022 6:15:00 AM	68218
Surr: 2-Fluorobiphenyl	63.8	0	26.7-90.1		%Rec	1	6/29/2022 6:15:00 AM	68218
Surr: 4-Terphenyl-d14	81.8	0	72.3-147		%Rec	1	6/29/2022 6:15:00 AM	68218

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-43
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022 10:10:00 AM
Lab ID: 2206938-005D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	0.077	0.0079	0.015		mg/L	5	6/20/2022 3:59:16 PM	68213
Beryllium	ND	0.0044	0.010		mg/L	5	6/20/2022 3:59:16 PM	68213
Cadmium	ND	0.0088	0.010		mg/L	5	6/20/2022 3:59:16 PM	68213
Chromium	ND	0.0098	0.030		mg/L	5	6/20/2022 3:59:16 PM	68213
Cobalt	0.031	0.018	0.030		mg/L	5	6/20/2022 3:59:16 PM	68213
Nickel	ND	0.027	0.050		mg/L	5	6/20/2022 3:59:16 PM	68213
Silver	ND	0.0092	0.025		mg/L	5	6/20/2022 3:59:16 PM	68213
Vanadium	ND	0.018	0.25		mg/L	5	6/20/2022 3:59:16 PM	68213
Zinc	0.021	0.019	0.050	J	mg/L	5	6/23/2022 4:58:45 PM	68301
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0089	0.020		mg/L	20	6/20/2022 6:47:51 PM	68213
Arsenic	0.0034	0.0025	0.020	J	mg/L	20	6/20/2022 6:47:51 PM	68213
Lead	0.0022	0.0012	0.010	J	mg/L	20	6/20/2022 6:47:51 PM	68213
Selenium	ND	0.0074	0.020		mg/L	20	6/20/2022 6:47:51 PM	68213
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/20/2022 12:42:28 PM	68220

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-43
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022 10:10:00 AM
Lab ID: 2206938-005E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.040	0.0011	0.0020		mg/L	1	6/21/2022 7:09:54 PM	A88936
Beryllium	ND	0.00088	0.0020		mg/L	1	6/21/2022 7:09:54 PM	A88936
Cadmium	ND	0.00098	0.0020		mg/L	1	6/21/2022 7:09:54 PM	A88936
Chromium	ND	0.0020	0.0060		mg/L	1	6/21/2022 7:09:54 PM	A88936
Cobalt	ND	0.0024	0.0060		mg/L	1	6/21/2022 7:09:54 PM	A88936
Nickel	0.0064	0.0033	0.010	J	mg/L	1	6/21/2022 7:09:54 PM	A88936
Silver	0.037	0.0013	0.0050		mg/L	1	6/21/2022 7:09:54 PM	A88936
Vanadium	0.0067	0.0017	0.050	J	mg/L	1	6/21/2022 7:09:54 PM	A88936
Zinc	0.0074	0.0032	0.010	J	mg/L	1	6/21/2022 7:09:54 PM	A88936
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0044	0.010		mg/L	10	6/21/2022 3:47:05 PM	C88918
Arsenic	ND	0.0061	0.050		mg/L	50	6/23/2022 12:53:40 PM	A88981
Lead	ND	0.0011	0.010		mg/L	20	6/23/2022 11:27:34 AM	A88981
Selenium	ND	0.017	0.050		mg/L	50	6/23/2022 12:53:40 PM	A88981
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/20/2022 12:44:37 PM	68220

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-41
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022 10:45:00 AM
Lab ID: 2206938-006A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	0.038	0.0090	0.050	J	mg/L	1	6/24/2022 10:35:08 AM	A89029
Surr: BFB	102	0	70-130		%Rec	1	6/24/2022 10:35:08 AM	A89029
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	0.28	0.23	1.0	J	µg/L	1	6/24/2022 11:38:00 PM	R89017
Toluene	0.21	0.20	1.0	J	µg/L	1	6/24/2022 11:38:00 PM	R89017
Ethylbenzene	0.83	0.21	1.0	J	µg/L	1	6/24/2022 11:38:00 PM	R89017
Methyl tert-butyl ether (MTBE)	0.65	0.39	1.0	J	µg/L	1	6/24/2022 11:38:00 PM	R89017
1,2,4-Trimethylbenzene	1.6	0.12	1.0		µg/L	1	6/24/2022 11:38:00 PM	R89017
1,3,5-Trimethylbenzene	0.98	0.18	1.0	J	µg/L	1	6/24/2022 11:38:00 PM	R89017
1,2-Dichloroethane (EDC)	3.0	0.25	1.0		µg/L	1	6/24/2022 11:38:00 PM	R89017
Acetone	3.2	2.5	10	J	µg/L	1	6/24/2022 11:38:00 PM	R89017
Bromomethane	ND	0.85	3.0		µg/L	1	6/24/2022 11:38:00 PM	R89017
2-Butanone	ND	2.0	10		µg/L	1	6/24/2022 11:38:00 PM	R89017
Carbon disulfide	ND	0.59	10		µg/L	1	6/24/2022 11:38:00 PM	R89017
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/24/2022 11:38:00 PM	R89017
Chloroform	ND	0.13	1.0		µg/L	1	6/24/2022 11:38:00 PM	R89017
Chloromethane	ND	0.41	3.0		µg/L	1	6/24/2022 11:38:00 PM	R89017
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/24/2022 11:38:00 PM	R89017
1,1-Dichloroethane	3.2	0.27	1.0		µg/L	1	6/24/2022 11:38:00 PM	R89017
1,1-Dichloroethene	5.0	0.20	1.0		µg/L	1	6/24/2022 11:38:00 PM	R89017
Isopropylbenzene	0.30	0.18	1.0	J	µg/L	1	6/24/2022 11:38:00 PM	R89017
4-Isopropyltoluene	0.26	0.20	1.0	J	µg/L	1	6/24/2022 11:38:00 PM	R89017
Methylene Chloride	ND	0.50	3.0		µg/L	1	6/24/2022 11:38:00 PM	R89017
n-Butylbenzene	0.26	0.25	3.0	J	µg/L	1	6/24/2022 11:38:00 PM	R89017
n-Propylbenzene	0.35	0.18	1.0	J	µg/L	1	6/24/2022 11:38:00 PM	R89017
sec-Butylbenzene	0.18	0.14	1.0	J	µg/L	1	6/24/2022 11:38:00 PM	R89017
Styrene	0.21	0.14	1.0	J	µg/L	1	6/24/2022 11:38:00 PM	R89017
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/24/2022 11:38:00 PM	R89017
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/24/2022 11:38:00 PM	R89017
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/24/2022 11:38:00 PM	R89017
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/24/2022 11:38:00 PM	R89017
Xylenes, Total	6.9	0.37	1.5		µg/L	1	6/24/2022 11:38:00 PM	R89017
Surr: 1,2-Dichloroethane-d4	98.9	0	70-130		%Rec	1	6/24/2022 11:38:00 PM	R89017
Surr: 4-Bromofluorobenzene	93.6	0	70-130		%Rec	1	6/24/2022 11:38:00 PM	R89017
Surr: Dibromofluoromethane	103	0	70-130		%Rec	1	6/24/2022 11:38:00 PM	R89017
Surr: Toluene-d8	104	0	70-130		%Rec	1	6/24/2022 11:38:00 PM	R89017

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-41
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022 10:45:00 AM
Lab ID: 2206938-006B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	6/24/2022 2:48:17 AM	68319

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-41
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022 10:45:00 AM
Lab ID: 2206938-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	1.9	0.016	0.064		mg/L	1	7/5/2022 1:57:31 PM	68262
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	7/5/2022 1:57:31 PM	68262
Surr: DNOP	85.3	0	42.2-138		%Rec	1	7/5/2022 1:57:31 PM	68262
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	6/30/2022 8:26:25 PM	68218
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	6/30/2022 8:26:25 PM	68218
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	6/30/2022 8:26:25 PM	68218
Di-n-octyl phthalate	ND	12	20		µg/L	1	6/30/2022 8:26:25 PM	68218
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	6/30/2022 8:26:25 PM	68218
Diethyl phthalate	ND	6.0	10		µg/L	1	6/30/2022 8:26:25 PM	68218
Dimethyl phthalate	ND	6.0	10		µg/L	1	6/30/2022 8:26:25 PM	68218
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	6/30/2022 8:26:25 PM	68218
2,4-Dinitrophenol	ND	16	20		µg/L	1	6/30/2022 8:26:25 PM	68218
2-Methylphenol	ND	5.0	10		µg/L	1	6/30/2022 8:26:25 PM	68218
3+4-Methylphenol	ND	5.1	10		µg/L	1	6/30/2022 8:26:25 PM	68218
Phenol	ND	18	20		µg/L	1	6/30/2022 8:26:25 PM	68218
Pyridine	ND	14	40		µg/L	1	6/30/2022 8:26:25 PM	68218
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	6/30/2022 8:26:25 PM	68218
Surr: 2-Fluorophenol	6.97	0	29.4-87.7	S	%Rec	1	6/30/2022 8:26:25 PM	68218
Surr: Phenol-d5	15.1	0	28.5-64.7	S	%Rec	1	6/30/2022 8:26:25 PM	68218
Surr: 2,4,6-Tribromophenol	11.4	0	18.6-129	S	%Rec	1	6/30/2022 8:26:25 PM	68218
Surr: Nitrobenzene-d5	32.5	0	36.9-103	S	%Rec	1	6/30/2022 8:26:25 PM	68218
Surr: 2-Fluorobiphenyl	31.5	0	38.1-99.9	S	%Rec	1	6/30/2022 8:26:25 PM	68218
Surr: 4-Terphenyl-d14	56.0	0	48-155		%Rec	1	6/30/2022 8:26:25 PM	68218
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	1.3	0.11	1.0		µg/L	1	6/29/2022 7:00:00 AM	68218
Naphthalene	0.28	0.20	0.30	J	µg/L	1	6/29/2022 7:00:00 AM	68218
1-Methylnaphthalene	0.40	0.15	0.30		µg/L	1	6/29/2022 7:00:00 AM	68218
2-Methylnaphthalene	0.28	0.14	0.30	J	µg/L	1	6/29/2022 7:00:00 AM	68218
Acenaphthene	ND	0.14	0.30		µg/L	1	6/29/2022 7:00:00 AM	68218
Fluorene	ND	0.095	0.30		µg/L	1	6/29/2022 7:00:00 AM	68218
Phenanthrene	ND	0.16	0.30		µg/L	1	6/29/2022 7:00:00 AM	68218
Anthracene	ND	0.14	0.30		µg/L	1	6/29/2022 7:00:00 AM	68218
Fluoranthene	ND	0.14	0.30		µg/L	1	6/29/2022 7:00:00 AM	68218
Pyrene	ND	0.32	1.0		µg/L	1	6/29/2022 7:00:00 AM	68218
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	6/29/2022 7:00:00 AM	68218
Chrysene	ND	0.25	0.30		µg/L	1	6/29/2022 7:00:00 AM	68218
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	6/29/2022 7:00:00 AM	68218
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	6/29/2022 7:00:00 AM	68218

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-41
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022 10:45:00 AM
Lab ID: 2206938-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	37.3	0	31.6-100		%Rec	1	6/29/2022 7:00:00 AM	68218
Surr: 2-Fluorobiphenyl	31.7	0	26.7-90.1		%Rec	1	6/29/2022 7:00:00 AM	68218
Surr: 4-Terphenyl-d14	57.9	0	72.3-147	S	%Rec	1	6/29/2022 7:00:00 AM	68218

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-41
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022 10:45:00 AM
Lab ID: 2206938-006D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	0.069	0.0016	0.0030		mg/L	1	6/20/2022 3:23:02 PM	68213
Beryllium	ND	0.00088	0.0020		mg/L	1	6/20/2022 3:23:02 PM	68213
Cadmium	ND	0.0018	0.0020		mg/L	1	6/20/2022 3:23:02 PM	68213
Chromium	ND	0.0020	0.0060		mg/L	1	6/20/2022 3:23:02 PM	68213
Cobalt	ND	0.0035	0.0060		mg/L	1	6/20/2022 3:23:02 PM	68213
Nickel	ND	0.0053	0.010		mg/L	1	6/20/2022 3:23:02 PM	68213
Silver	ND	0.0018	0.0050		mg/L	1	6/20/2022 3:23:02 PM	68213
Vanadium	0.028	0.0035	0.050	J	mg/L	1	6/20/2022 3:23:02 PM	68213
Zinc	0.016	0.0039	0.010		mg/L	1	6/23/2022 5:00:29 PM	68301
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/20/2022 5:49:09 PM	68213
Arsenic	0.0025	0.00063	0.0050	J	mg/L	5	6/20/2022 6:50:18 PM	68213
Lead	0.00011	0.000061	0.00050	J	mg/L	1	6/20/2022 5:49:09 PM	68213
Selenium	0.033	0.0019	0.0050		mg/L	5	6/20/2022 6:50:18 PM	68213
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/20/2022 12:46:47 PM	68220

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-41
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022 10:45:00 AM
Lab ID: 2206938-006E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.063	0.0011	0.0020		mg/L	1	6/21/2022 7:12:20 PM	A88936
Beryllium	ND	0.00088	0.0020		mg/L	1	6/21/2022 7:12:20 PM	A88936
Cadmium	ND	0.00098	0.0020		mg/L	1	6/21/2022 7:12:20 PM	A88936
Chromium	ND	0.0020	0.0060		mg/L	1	6/21/2022 7:12:20 PM	A88936
Cobalt	ND	0.0024	0.0060		mg/L	1	6/21/2022 7:12:20 PM	A88936
Nickel	ND	0.0033	0.010		mg/L	1	6/21/2022 7:12:20 PM	A88936
Silver	ND	0.0013	0.0050		mg/L	1	6/21/2022 7:12:20 PM	A88936
Vanadium	0.027	0.0017	0.050	J	mg/L	1	6/21/2022 7:12:20 PM	A88936
Zinc	0.0075	0.0032	0.010	J	mg/L	1	6/21/2022 7:12:20 PM	A88936
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/21/2022 2:23:43 PM	C88918
Arsenic	0.0020	0.00012	0.0010		mg/L	1	6/21/2022 2:23:43 PM	C88918
Lead	ND	0.000057	0.00050		mg/L	1	6/21/2022 2:23:43 PM	C88918
Selenium	0.033	0.00034	0.0010		mg/L	1	6/21/2022 2:23:43 PM	C88918
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/20/2022 12:48:56 PM	68220

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB-6-16-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/15/2022 10:45:00 AM
Lab ID: 2206938-007A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	6/25/2022 12:01:00 AM	R89017
Toluene	0.24	0.20	1.0	J	µg/L	1	6/25/2022 12:01:00 AM	R89017
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/25/2022 12:01:00 AM	R89017
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	6/25/2022 12:01:00 AM	R89017
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/25/2022 12:01:00 AM	R89017
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/25/2022 12:01:00 AM	R89017
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/25/2022 12:01:00 AM	R89017
Acetone	3.6	2.5	10	J	µg/L	1	6/25/2022 12:01:00 AM	R89017
Bromomethane	ND	0.85	3.0		µg/L	1	6/25/2022 12:01:00 AM	R89017
2-Butanone	ND	2.0	10		µg/L	1	6/25/2022 12:01:00 AM	R89017
Carbon disulfide	ND	0.59	10		µg/L	1	6/25/2022 12:01:00 AM	R89017
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/25/2022 12:01:00 AM	R89017
Chloroform	ND	0.13	1.0		µg/L	1	6/25/2022 12:01:00 AM	R89017
Chloromethane	ND	0.41	3.0		µg/L	1	6/25/2022 12:01:00 AM	R89017
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/25/2022 12:01:00 AM	R89017
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/25/2022 12:01:00 AM	R89017
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/25/2022 12:01:00 AM	R89017
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/25/2022 12:01:00 AM	R89017
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/25/2022 12:01:00 AM	R89017
Methylene Chloride	ND	0.50	3.0		µg/L	1	6/25/2022 12:01:00 AM	R89017
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/25/2022 12:01:00 AM	R89017
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/25/2022 12:01:00 AM	R89017
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	6/25/2022 12:01:00 AM	R89017
Styrene	ND	0.14	1.0		µg/L	1	6/25/2022 12:01:00 AM	R89017
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/25/2022 12:01:00 AM	R89017
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/25/2022 12:01:00 AM	R89017
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/25/2022 12:01:00 AM	R89017
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/25/2022 12:01:00 AM	R89017
Xylenes, Total	ND	0.37	1.5		µg/L	1	6/25/2022 12:01:00 AM	R89017
Surr: 1,2-Dichloroethane-d4	96.6	0	70-130		%Rec	1	6/25/2022 12:01:00 AM	R89017
Surr: 4-Bromofluorobenzene	92.0	0	70-130		%Rec	1	6/25/2022 12:01:00 AM	R89017
Surr: Dibromofluoromethane	101	0	70-130		%Rec	1	6/25/2022 12:01:00 AM	R89017
Surr: Toluene-d8	109	0	70-130		%Rec	1	6/25/2022 12:01:00 AM	R89017

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-16-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022
Lab ID: 2206938-008A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	6/24/2022 11:45:53 AM	A89029
Surr: BFB	100	0	70-130		%Rec	1	6/24/2022 11:45:53 AM	A89029
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	6/25/2022 12:25:00 AM	R89017
Toluene	ND	0.20	1.0		µg/L	1	6/25/2022 12:25:00 AM	R89017
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/25/2022 12:25:00 AM	R89017
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	6/25/2022 12:25:00 AM	R89017
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/25/2022 12:25:00 AM	R89017
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/25/2022 12:25:00 AM	R89017
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/25/2022 12:25:00 AM	R89017
Acetone	ND	2.5	10		µg/L	1	6/25/2022 12:25:00 AM	R89017
Bromomethane	ND	0.85	3.0		µg/L	1	6/25/2022 12:25:00 AM	R89017
2-Butanone	ND	2.0	10		µg/L	1	6/25/2022 12:25:00 AM	R89017
Carbon disulfide	ND	0.59	10		µg/L	1	6/25/2022 12:25:00 AM	R89017
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/25/2022 12:25:00 AM	R89017
Chloroform	ND	0.13	1.0		µg/L	1	6/25/2022 12:25:00 AM	R89017
Chloromethane	ND	0.41	3.0		µg/L	1	6/25/2022 12:25:00 AM	R89017
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/25/2022 12:25:00 AM	R89017
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/25/2022 12:25:00 AM	R89017
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/25/2022 12:25:00 AM	R89017
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/25/2022 12:25:00 AM	R89017
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/25/2022 12:25:00 AM	R89017
Methylene Chloride	ND	0.50	3.0		µg/L	1	6/25/2022 12:25:00 AM	R89017
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/25/2022 12:25:00 AM	R89017
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/25/2022 12:25:00 AM	R89017
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	6/25/2022 12:25:00 AM	R89017
Styrene	ND	0.14	1.0		µg/L	1	6/25/2022 12:25:00 AM	R89017
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/25/2022 12:25:00 AM	R89017
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/25/2022 12:25:00 AM	R89017
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/25/2022 12:25:00 AM	R89017
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/25/2022 12:25:00 AM	R89017
Xylenes, Total	ND	0.37	1.5		µg/L	1	6/25/2022 12:25:00 AM	R89017
Surr: 1,2-Dichloroethane-d4	105	0	70-130		%Rec	1	6/25/2022 12:25:00 AM	R89017
Surr: 4-Bromofluorobenzene	112	0	70-130		%Rec	1	6/25/2022 12:25:00 AM	R89017
Surr: Dibromofluoromethane	106	0	70-130		%Rec	1	6/25/2022 12:25:00 AM	R89017
Surr: Toluene-d8	96.9	0	70-130		%Rec	1	6/25/2022 12:25:00 AM	R89017

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-16-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022
Lab ID: 2206938-008B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0026	0.0092		µg/L	1	6/24/2022 3:18:37 AM	68319

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-16-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022
Lab ID: 2206938-008C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.15	0.016	0.064		mg/L	1	7/5/2022 1:33:37 PM	68262
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	7/5/2022 1:33:37 PM	68262
Surr: DNOP	91.4	0	42.2-138		%Rec	1	7/5/2022 1:33:37 PM	68262
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	6/30/2022 9:10:10 PM	68218
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	6/30/2022 9:10:10 PM	68218
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	6/30/2022 9:10:10 PM	68218
Di-n-octyl phthalate	ND	12	20		µg/L	1	6/30/2022 9:10:10 PM	68218
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	6/30/2022 9:10:10 PM	68218
Diethyl phthalate	ND	6.0	10		µg/L	1	6/30/2022 9:10:10 PM	68218
Dimethyl phthalate	ND	6.0	10		µg/L	1	6/30/2022 9:10:10 PM	68218
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	6/30/2022 9:10:10 PM	68218
2,4-Dinitrophenol	ND	16	20		µg/L	1	6/30/2022 9:10:10 PM	68218
2-Methylphenol	ND	5.0	10		µg/L	1	6/30/2022 9:10:10 PM	68218
3+4-Methylphenol	ND	5.1	10		µg/L	1	6/30/2022 9:10:10 PM	68218
Phenol	ND	18	20		µg/L	1	6/30/2022 9:10:10 PM	68218
Pyridine	ND	14	40		µg/L	1	6/30/2022 9:10:10 PM	68218
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	6/30/2022 9:10:10 PM	68218
Surr: 2-Fluorophenol	1.27	0	29.4-87.7	S	%Rec	1	6/30/2022 9:10:10 PM	68218
Surr: Phenol-d5	7.83	0	28.5-64.7	S	%Rec	1	6/30/2022 9:10:10 PM	68218
Surr: 2,4,6-Tribromophenol	2.30	0	18.6-129	S	%Rec	1	6/30/2022 9:10:10 PM	68218
Surr: Nitrobenzene-d5	52.2	0	36.9-103		%Rec	1	6/30/2022 9:10:10 PM	68218
Surr: 2-Fluorobiphenyl	52.0	0	38.1-99.9		%Rec	1	6/30/2022 9:10:10 PM	68218
Surr: 4-Terphenyl-d14	79.9	0	48-155		%Rec	1	6/30/2022 9:10:10 PM	68218
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	6/29/2022 7:44:00 AM	68218
Naphthalene	ND	0.20	0.30		µg/L	1	6/29/2022 7:44:00 AM	68218
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	6/29/2022 7:44:00 AM	68218
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	6/29/2022 7:44:00 AM	68218
Acenaphthene	ND	0.14	0.30		µg/L	1	6/29/2022 7:44:00 AM	68218
Fluorene	ND	0.095	0.30		µg/L	1	6/29/2022 7:44:00 AM	68218
Phenanthrene	ND	0.16	0.30		µg/L	1	6/29/2022 7:44:00 AM	68218
Anthracene	ND	0.14	0.30		µg/L	1	6/29/2022 7:44:00 AM	68218
Fluoranthene	ND	0.14	0.30		µg/L	1	6/29/2022 7:44:00 AM	68218
Pyrene	ND	0.32	1.0		µg/L	1	6/29/2022 7:44:00 AM	68218
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	6/29/2022 7:44:00 AM	68218
Chrysene	ND	0.25	0.30		µg/L	1	6/29/2022 7:44:00 AM	68218
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	6/29/2022 7:44:00 AM	68218
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	6/29/2022 7:44:00 AM	68218

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-16-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022
Lab ID: 2206938-008C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	56.6	0	31.6-100		%Rec	1	6/29/2022 7:44:00 AM	68218
Surr: 2-Fluorobiphenyl	49.8	0	26.7-90.1		%Rec	1	6/29/2022 7:44:00 AM	68218
Surr: 4-Terphenyl-d14	74.3	0	72.3-147		%Rec	1	6/29/2022 7:44:00 AM	68218

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-16-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022
Lab ID: 2206938-008D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	0.071	0.0079	0.015		mg/L	5	6/20/2022 4:00:57 PM	68213
Beryllium	ND	0.0044	0.010		mg/L	5	6/20/2022 4:00:57 PM	68213
Cadmium	ND	0.0088	0.010		mg/L	5	6/20/2022 4:00:57 PM	68213
Chromium	ND	0.0098	0.030		mg/L	5	6/20/2022 4:00:57 PM	68213
Cobalt	0.028	0.018	0.030	J	mg/L	5	6/20/2022 4:00:57 PM	68213
Nickel	ND	0.027	0.050		mg/L	5	6/20/2022 4:00:57 PM	68213
Silver	ND	0.0092	0.025		mg/L	5	6/20/2022 4:00:57 PM	68213
Vanadium	ND	0.018	0.25		mg/L	5	6/20/2022 4:00:57 PM	68213
Zinc	0.022	0.019	0.050	J	mg/L	5	6/23/2022 5:02:09 PM	68301
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0089	0.020		mg/L	20	6/20/2022 6:52:44 PM	68213
Arsenic	0.0034	0.0025	0.020	J	mg/L	20	6/20/2022 6:52:44 PM	68213
Lead	0.0022	0.0012	0.010	J	mg/L	20	6/20/2022 6:52:44 PM	68213
Selenium	ND	0.0074	0.020		mg/L	20	6/20/2022 6:52:44 PM	68213
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/20/2022 12:55:22 PM	68220

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-16-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022
Lab ID: 2206938-008E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.040	0.0011	0.0020		mg/L	1	6/21/2022 7:14:38 PM	A88936
Beryllium	ND	0.00088	0.0020		mg/L	1	6/21/2022 7:14:38 PM	A88936
Cadmium	ND	0.00098	0.0020		mg/L	1	6/21/2022 7:14:38 PM	A88936
Chromium	ND	0.0020	0.0060		mg/L	1	6/21/2022 7:14:38 PM	A88936
Cobalt	ND	0.0024	0.0060		mg/L	1	6/21/2022 7:14:38 PM	A88936
Nickel	0.0042	0.0033	0.010	J	mg/L	1	6/21/2022 7:14:38 PM	A88936
Silver	0.035	0.0013	0.0050		mg/L	1	6/21/2022 7:14:38 PM	A88936
Vanadium	0.0057	0.0017	0.050	J	mg/L	1	6/21/2022 7:14:38 PM	A88936
Zinc	0.0055	0.0032	0.010	J	mg/L	1	6/21/2022 7:14:38 PM	A88936
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0044	0.010		mg/L	10	6/21/2022 3:49:46 PM	C88918
Arsenic	ND	0.0024	0.020		mg/L	20	6/23/2022 11:30:16 AM	A88981
Lead	ND	0.0011	0.010		mg/L	20	6/23/2022 11:30:16 AM	A88981
Selenium	ND	0.0069	0.020		mg/L	20	6/23/2022 11:30:16 AM	A88981
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/20/2022 12:57:31 PM	68220

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 2nd Quarter
Collection Date:
Lab ID: 2206938-009A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
Toluene	ND	0.20	1.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
Naphthalene	ND	0.50	2.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
1-Methylnaphthalene	1.0	0.84	4.0	J	µg/L	1	6/25/2022 1:56:00 AM	R89017
2-Methylnaphthalene	1.0	0.69	4.0	J	µg/L	1	6/25/2022 1:56:00 AM	R89017
Acetone	2.7	2.5	10	J	µg/L	1	6/25/2022 1:56:00 AM	R89017
Bromobenzene	ND	0.28	1.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
Bromodichloromethane	ND	0.20	1.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
Bromoform	ND	0.31	1.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
Bromomethane	ND	0.85	3.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
2-Butanone	ND	2.0	10		µg/L	1	6/25/2022 1:56:00 AM	R89017
Carbon disulfide	ND	0.59	10		µg/L	1	6/25/2022 1:56:00 AM	R89017
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
Chlorobenzene	ND	0.16	1.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
Chloroethane	ND	0.38	2.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
Chloroform	ND	0.13	1.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
Chloromethane	ND	0.41	3.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
4-Chlorotoluene	ND	0.34	1.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
Dibromochloromethane	ND	0.28	1.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
Dibromomethane	ND	0.31	1.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
Dichlorodifluoromethane	ND	0.40	1.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
1,2-Dichloropropane	ND	0.20	1.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	6/25/2022 1:56:00 AM	R89017

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 2nd Quarter
Collection Date:
Lab ID: 2206938-009A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Hexachlorobutadiene	ND	0.56	1.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
2-Hexanone	ND	1.8	10		µg/L	1	6/25/2022 1:56:00 AM	R89017
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
4-Methyl-2-pentanone	ND	0.88	10		µg/L	1	6/25/2022 1:56:00 AM	R89017
Methylene Chloride	ND	0.50	3.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
Styrene	0.14	0.14	1.0	J	µg/L	1	6/25/2022 1:56:00 AM	R89017
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
trans-1,2-DCE	ND	0.19	1.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
1,2,3-Trichlorobenzene	0.25	0.25	1.0	J	µg/L	1	6/25/2022 1:56:00 AM	R89017
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
1,1,2-Trichloroethane	ND	0.20	1.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
Trichlorofluoromethane	ND	0.16	1.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
Vinyl chloride	ND	0.32	1.0		µg/L	1	6/25/2022 1:56:00 AM	R89017
Xylenes, Total	ND	0.37	1.5		µg/L	1	6/25/2022 1:56:00 AM	R89017
Surr: 1,2-Dichloroethane-d4	104	0	70-130		%Rec	1	6/25/2022 1:56:00 AM	R89017
Surr: 4-Bromofluorobenzene	97.7	0	70-130		%Rec	1	6/25/2022 1:56:00 AM	R89017
Surr: Dibromofluoromethane	104	0	70-130		%Rec	1	6/25/2022 1:56:00 AM	R89017
Surr: Toluene-d8	101	0	70-130		%Rec	1	6/25/2022 1:56:00 AM	R89017

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 2nd Quarter
Collection Date:
Lab ID: 2206938-009B
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	6/24/2022 3:49:00 AM	68319

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-32
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022 11:05:00 AM
Lab ID: 2206938-010A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	0.97	0.0090	0.050		mg/L	1	6/24/2022 12:09:31 PM	A89029
Surr: BFB	96.2	0	70-130		%Rec	1	6/24/2022 12:09:31 PM	A89029
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.45	2.0		µg/L	2	6/25/2022 2:42:00 AM	R89017
Toluene	ND	0.40	2.0		µg/L	2	6/25/2022 2:42:00 AM	R89017
Ethylbenzene	ND	0.43	2.0		µg/L	2	6/25/2022 2:42:00 AM	R89017
Methyl tert-butyl ether (MTBE)	1100	7.9	20		µg/L	20	6/25/2022 2:19:00 AM	R89017
1,2,4-Trimethylbenzene	ND	0.24	2.0		µg/L	2	6/25/2022 2:42:00 AM	R89017
1,3,5-Trimethylbenzene	ND	0.36	2.0		µg/L	2	6/25/2022 2:42:00 AM	R89017
1,2-Dichloroethane (EDC)	11	0.51	2.0		µg/L	2	6/25/2022 2:42:00 AM	R89017
Acetone	ND	5.0	20		µg/L	2	6/25/2022 2:42:00 AM	R89017
Bromomethane	ND	1.7	6.0		µg/L	2	6/25/2022 2:42:00 AM	R89017
2-Butanone	ND	4.1	20		µg/L	2	6/25/2022 2:42:00 AM	R89017
Carbon disulfide	ND	1.2	20		µg/L	2	6/25/2022 2:42:00 AM	R89017
Chlorobenzene	ND	0.31	2.0		µg/L	2	6/25/2022 2:42:00 AM	R89017
Chloroform	ND	0.27	2.0		µg/L	2	6/25/2022 2:42:00 AM	R89017
Chloromethane	ND	0.82	6.0		µg/L	2	6/25/2022 2:42:00 AM	R89017
cis-1,2-DCE	2.1	0.78	2.0		µg/L	2	6/25/2022 2:42:00 AM	R89017
1,1-Dichloroethane	11	0.55	2.0		µg/L	2	6/25/2022 2:42:00 AM	R89017
1,1-Dichloroethene	19	0.40	2.0		µg/L	2	6/25/2022 2:42:00 AM	R89017
Isopropylbenzene	ND	0.37	2.0		µg/L	2	6/25/2022 2:42:00 AM	R89017
4-Isopropyltoluene	ND	0.40	2.0		µg/L	2	6/25/2022 2:42:00 AM	R89017
Methylene Chloride	ND	1.0	6.0		µg/L	2	6/25/2022 2:42:00 AM	R89017
n-Butylbenzene	ND	0.51	6.0		µg/L	2	6/25/2022 2:42:00 AM	R89017
n-Propylbenzene	ND	0.36	2.0		µg/L	2	6/25/2022 2:42:00 AM	R89017
sec-Butylbenzene	0.44	0.29	2.0	J	µg/L	2	6/25/2022 2:42:00 AM	R89017
Styrene	ND	0.27	2.0		µg/L	2	6/25/2022 2:42:00 AM	R89017
Tetrachloroethene (PCE)	ND	0.71	2.0		µg/L	2	6/25/2022 2:42:00 AM	R89017
1,1,1-Trichloroethane	ND	0.60	2.0		µg/L	2	6/25/2022 2:42:00 AM	R89017
Trichloroethene (TCE)	ND	0.41	2.0		µg/L	2	6/25/2022 2:42:00 AM	R89017
Vinyl chloride	ND	0.64	2.0		µg/L	2	6/25/2022 2:42:00 AM	R89017
Xylenes, Total	ND	0.74	3.0		µg/L	2	6/25/2022 2:42:00 AM	R89017
Surr: 1,2-Dichloroethane-d4	105	0	70-130		%Rec	2	6/25/2022 2:42:00 AM	R89017
Surr: 4-Bromofluorobenzene	100	0	70-130		%Rec	2	6/25/2022 2:42:00 AM	R89017
Surr: Dibromofluoromethane	105	0	70-130		%Rec	2	6/25/2022 2:42:00 AM	R89017
Surr: Toluene-d8	101	0	70-130		%Rec	2	6/25/2022 2:42:00 AM	R89017

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Estimated value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-32
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022 11:05:00 AM
Lab ID: 2206938-010B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0093		µg/L	1	6/24/2022 4:19:11 AM	68319

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-32
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022 11:05:00 AM
Lab ID: 2206938-010C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	1.2	0.016	0.064		mg/L	1	7/5/2022 1:09:42 PM	68262
Motor Oil Range Organics (MRO)	1.2	0.052	0.080		mg/L	1	7/5/2022 1:09:42 PM	68262
Surr: DNOP	77.1	0	42.2-138		%Rec	1	7/5/2022 1:09:42 PM	68262
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	7/6/2022 2:41:16 PM	68278
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	7/6/2022 2:41:16 PM	68278
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	7/6/2022 2:41:16 PM	68278
Di-n-octyl phthalate	ND	12	20		µg/L	1	7/6/2022 2:41:16 PM	68278
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	7/6/2022 2:41:16 PM	68278
Diethyl phthalate	ND	6.0	10		µg/L	1	7/6/2022 2:41:16 PM	68278
Dimethyl phthalate	ND	6.0	10		µg/L	1	7/6/2022 2:41:16 PM	68278
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	7/6/2022 2:41:16 PM	68278
2,4-Dinitrophenol	ND	16	20		µg/L	1	7/6/2022 2:41:16 PM	68278
2-Methylphenol	ND	5.0	10		µg/L	1	7/6/2022 2:41:16 PM	68278
3+4-Methylphenol	ND	5.1	10		µg/L	1	7/6/2022 2:41:16 PM	68278
Phenol	ND	18	20		µg/L	1	7/6/2022 2:41:16 PM	68278
Pyridine	ND	14	40		µg/L	1	7/6/2022 2:41:16 PM	68278
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	7/6/2022 2:41:16 PM	68278
Surr: 2-Fluorophenol	56.3	0	29.4-87.7		%Rec	1	7/6/2022 2:41:16 PM	68278
Surr: Phenol-d5	43.0	0	28.5-64.7		%Rec	1	7/6/2022 2:41:16 PM	68278
Surr: 2,4,6-Tribromophenol	55.3	0	18.6-129		%Rec	1	7/6/2022 2:41:16 PM	68278
Surr: Nitrobenzene-d5	69.1	0	36.9-103		%Rec	1	7/6/2022 2:41:16 PM	68278
Surr: 2-Fluorobiphenyl	66.0	0	38.1-99.9		%Rec	1	7/6/2022 2:41:16 PM	68278
Surr: 4-Terphenyl-d14	83.6	0	48-155		%Rec	1	7/6/2022 2:41:16 PM	68278
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	63	0.11	1.0	E	µg/L	1	7/5/2022 2:06:00 PM	68278
Naphthalene	ND	0.20	0.30		µg/L	1	7/5/2022 2:06:00 PM	68278
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	7/5/2022 2:06:00 PM	68278
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	7/5/2022 2:06:00 PM	68278
Acenaphthene	ND	0.14	0.30		µg/L	1	7/5/2022 2:06:00 PM	68278
Fluorene	ND	0.095	0.30		µg/L	1	7/5/2022 2:06:00 PM	68278
Phenanthrene	ND	0.16	0.30		µg/L	1	7/5/2022 2:06:00 PM	68278
Anthracene	ND	0.14	0.30		µg/L	1	7/5/2022 2:06:00 PM	68278
Fluoranthene	ND	0.14	0.30		µg/L	1	7/5/2022 2:06:00 PM	68278
Pyrene	ND	0.32	1.0		µg/L	1	7/5/2022 2:06:00 PM	68278
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	7/5/2022 2:06:00 PM	68278
Chrysene	ND	0.25	0.30		µg/L	1	7/5/2022 2:06:00 PM	68278
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	7/5/2022 2:06:00 PM	68278
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	7/5/2022 2:06:00 PM	68278

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-32
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022 11:05:00 AM
Lab ID: 2206938-010C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	80.4	0	31.6-100		%Rec	1	7/5/2022 2:06:00 PM	68278
Surr: 2-Fluorobiphenyl	75.8	0	26.7-90.1		%Rec	1	7/5/2022 2:06:00 PM	68278
Surr: 4-Terphenyl-d14	100	0	72.3-147		%Rec	1	7/5/2022 2:06:00 PM	68278

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-32
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022 11:05:00 AM
Lab ID: 2206938-010D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	0.074	0.0016	0.0030		mg/L	1	6/23/2022 5:03:50 PM	68301
Beryllium	ND	0.00088	0.0020		mg/L	1	6/23/2022 5:03:50 PM	68301
Cadmium	ND	0.0018	0.0020		mg/L	1	6/23/2022 5:03:50 PM	68301
Chromium	ND	0.0020	0.0060		mg/L	1	6/23/2022 5:03:50 PM	68301
Cobalt	ND	0.0035	0.0060		mg/L	1	6/23/2022 5:03:50 PM	68301
Nickel	ND	0.0053	0.010		mg/L	1	6/23/2022 5:03:50 PM	68301
Silver	ND	0.0018	0.0050		mg/L	1	6/23/2022 5:03:50 PM	68301
Vanadium	0.0085	0.0035	0.050	J	mg/L	1	6/23/2022 5:03:50 PM	68301
Zinc	0.011	0.0039	0.010		mg/L	1	6/23/2022 5:03:50 PM	68301
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/27/2022 10:35:48 AM	68301
Arsenic	0.0026	0.00013	0.0010		mg/L	1	6/27/2022 10:35:48 AM	68301
Lead	0.00097	0.000061	0.00050		mg/L	1	6/27/2022 10:35:48 AM	68301
Selenium	0.00052	0.00037	0.0010	J	mg/L	1	6/27/2022 10:35:48 AM	68301
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/21/2022 11:28:36 AM	68247

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2206938**
Date Reported: **7/14/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-32
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/16/2022 11:05:00 AM
Lab ID: 2206938-010E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.045	0.0011	0.0020		mg/L	1	6/20/2022 9:10:16 PM	C88897
Beryllium	ND	0.00088	0.0020		mg/L	1	6/20/2022 9:10:16 PM	C88897
Cadmium	ND	0.00098	0.0020		mg/L	1	6/20/2022 9:10:16 PM	C88897
Chromium	ND	0.0020	0.0060		mg/L	1	6/20/2022 9:10:16 PM	C88897
Cobalt	ND	0.0024	0.0060		mg/L	1	6/20/2022 9:10:16 PM	C88897
Nickel	0.0038	0.0033	0.010	J	mg/L	1	6/20/2022 9:10:16 PM	C88897
Silver	ND	0.0013	0.0050		mg/L	1	6/20/2022 9:10:16 PM	C88897
Vanadium	0.0049	0.0017	0.050	J	mg/L	1	6/20/2022 9:10:16 PM	C88897
Zinc	0.0087	0.0032	0.010	J	mg/L	1	6/20/2022 9:10:16 PM	C88897
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/21/2022 2:29:05 PM	C88918
Arsenic	0.0025	0.00012	0.0010		mg/L	1	6/21/2022 2:29:05 PM	C88918
Lead	0.000087	0.000057	0.00050	J	mg/L	1	6/21/2022 2:29:05 PM	C88918
Selenium	ND	0.00034	0.0010		mg/L	1	6/21/2022 2:29:05 PM	C88918
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	6/23/2022 11:24:08 AM	68304

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

ANALYTICAL REPORT

July 01, 2022

Hall Environmental Analysis Laboratory

Sample Delivery Group: L1506677

Samples Received: 06/18/2022

Project Number:

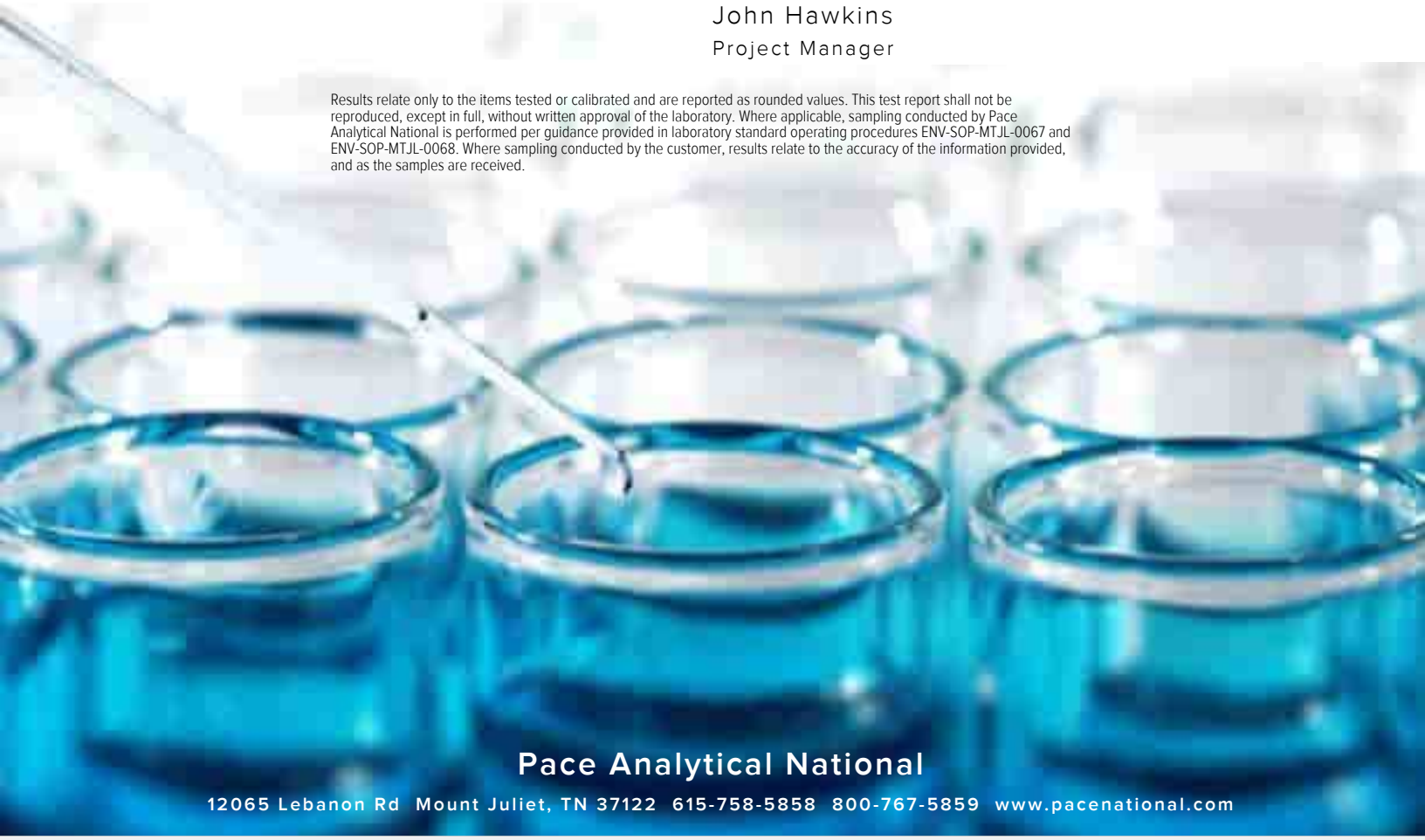
Description:

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By:

John Hawkins
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 4

Sr: Sample Results 5

2206938-001F EB-6-16-22 L1506677-01 5

2206938-002F OW-60 L1506677-02 6

2206938-003F OW-68 L1506677-03 7

2206938-004F OW-67 L1506677-04 8

2206938-005F MKTF-43 L1506677-05 9

2206938-006F MKTF-41 L1506677-06 10

2206938-008F DUP-6-16-22 L1506677-07 11

Qc: Quality Control Summary 12

Wet Chemistry by Method 4500CN E-2016 12

Gl: Glossary of Terms 13

Al: Accreditations & Locations 14

Sc: Sample Chain of Custody 15

SAMPLE SUMMARY

2206938-001F EB-6-16-22 L1506677-01 WW

Collected by	Collected date/time	Received date/time
	06/16/22 08:30	06/18/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1886384	1	06/28/22 00:39	06/29/22 10:00	LDT	Mt. Juliet, TN

2206938-002F OW-60 L1506677-02 WW

Collected by	Collected date/time	Received date/time
	06/16/22 08:45	06/18/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1886384	1	06/28/22 00:39	06/29/22 10:02	LDT	Mt. Juliet, TN

2206938-003F OW-68 L1506677-03 WW

Collected by	Collected date/time	Received date/time
	06/16/22 09:15	06/18/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1886384	1	06/28/22 00:39	06/29/22 10:03	LDT	Mt. Juliet, TN

2206938-004F OW-67 L1506677-04 WW

Collected by	Collected date/time	Received date/time
	06/16/22 09:45	06/18/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1886384	1	06/28/22 00:39	06/29/22 10:06	LDT	Mt. Juliet, TN

2206938-005F MKTF-43 L1506677-05 WW

Collected by	Collected date/time	Received date/time
	06/16/22 10:10	06/18/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1886384	1	06/28/22 00:39	06/29/22 10:10	LDT	Mt. Juliet, TN

2206938-006F MKTF-41 L1506677-06 WW

Collected by	Collected date/time	Received date/time
	06/16/22 10:45	06/18/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1886384	1	06/28/22 00:39	06/29/22 10:11	LDT	Mt. Juliet, TN

2206938-008F DUP-6-16-22 L1506677-07 WW

Collected by	Collected date/time	Received date/time
	06/16/22 00:00	06/18/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1886384	1	06/28/22 00:39	06/29/22 10:12	LDT	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	06/29/2022 10:00	WG1886384

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.0115		0.00500	1	06/29/2022 10:02	WG1886384

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.0185		0.00500	1	06/29/2022 10:03	WG1886384

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.0412		0.00500	1	06/29/2022 10:06	WG1886384

Received by OCD: 4/21/2023 9:21:57 AM

2206938-005F MKTP-43
Collected date/time: 06/16/22 10:10
L1506677

Wet Chemistry by Method 4500CN E-2016

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Cyanide	ND		0.00500	1	06/29/2022 10:10	WG1886384

Released to Imaging: 4/21/2023 9:40:26 AM

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.00513		0.00500	1	06/29/2022 10:11	WG1886384

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	06/29/2022 10:12	WG1886384

Method Blank (MB)

(MB) R3808789-1 06/29/22 09:45

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1506677-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1506677-01 06/29/22 10:00 • (DUP) R3808789-3 06/29/22 10:01

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

L1506677-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1506677-04 06/29/22 10:06 • (DUP) R3808789-6 06/29/22 10:07

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	0.0412	0.0386	1	6.52		20

Laboratory Control Sample (LCS)

(LCS) R3808789-2 06/29/22 09:46

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.104	104	87.1-120	

L1506677-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1506677-03 06/29/22 10:03 • (MS) R3808789-4 06/29/22 10:04 • (MSD) R3808789-5 06/29/22 10:05

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	0.0185	0.111	0.113	92.5	94.5	1	90.0-110			1.79	20

L1506677-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1506677-07 06/29/22 10:12 • (MS) R3808789-7 06/29/22 10:13 • (MSD) R3808789-8 06/29/22 10:14

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.101	0.102	97.5	98.5	1	90.0-110			0.985	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
	The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Received by OCD: 4/21/2023 9:21:57 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

F200

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

SUB CONTRATOR: Pace TN	COMPANY: PACE TN		PHONE: (800) 767-5859	FAX: (615) 758-5859	
ADDRESS: 12065 Lebanon Rd			ACCOUNT #:	EMAIL:	
CITY, STATE, ZIP: Mt. Juliet, TN 37122					

L1506677

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	2206938-001F	EB-6-16-22	500AMBHDP F-NAOH	Groundwater	6/16/2022 8:30:00 AM	1	Total Cyanide J and MDL -01
2	2206938-002F	OW-60	500AMBHDP F-NAOH	Groundwater	6/16/2022 8:45:00 AM	1	Total Cyanide J and MDL -02
3	2206938-003F	OW-68	500AMBHDP F-NAOH	Groundwater	6/16/2022 9:15:00 AM	1	Total Cyanide J and MDL -03
4	2206938-004F	OW-67	500AMBHDP F-NAOH	Groundwater	6/16/2022 9:45:00 AM	1	Total Cyanide J and MDL -04
5	2206938-005F	MKTF-43	500AMBHDP F-NAOH	Groundwater	6/16/2022 10:10:00 AM	1	Total Cyanide J and MDL -05
6	2206938-006F	MKTF-41	500AMBHDP F-NAOH	Groundwater	6/16/2022 10:45:00 AM	1	Total Cyanide J and MDL -06
7	2206938-008F	DUP-6-16-22	500AMBHDP F-NAOH	Groundwater	6/16/2022	1	Total Cyanide J and MDL -07

Sample Receipt Checklist

COC Seal Present/Intact:	Y N	If Applicable	
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	Y N	Pres.Correct/Check:	Y N
Correct bottles used:	Y N		
Sufficient volume sent:	Y N		
RAD Screen <0.5 mR/hr:	Y N		

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By: CMC	Date: 6/17/2022	Time: 7:29 AM	Received By:	Date: 6/18/22	Time: 900
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☐ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY

Temp of samples 1.0+0=1.0°C PMA7 Attempt to Cool ? _____

Comments: _____

Released to Imaging: 4/21/2023 9:40:26 AM

ANALYTICAL REPORT

July 01, 2022

Hall Environmental Analysis Laboratory

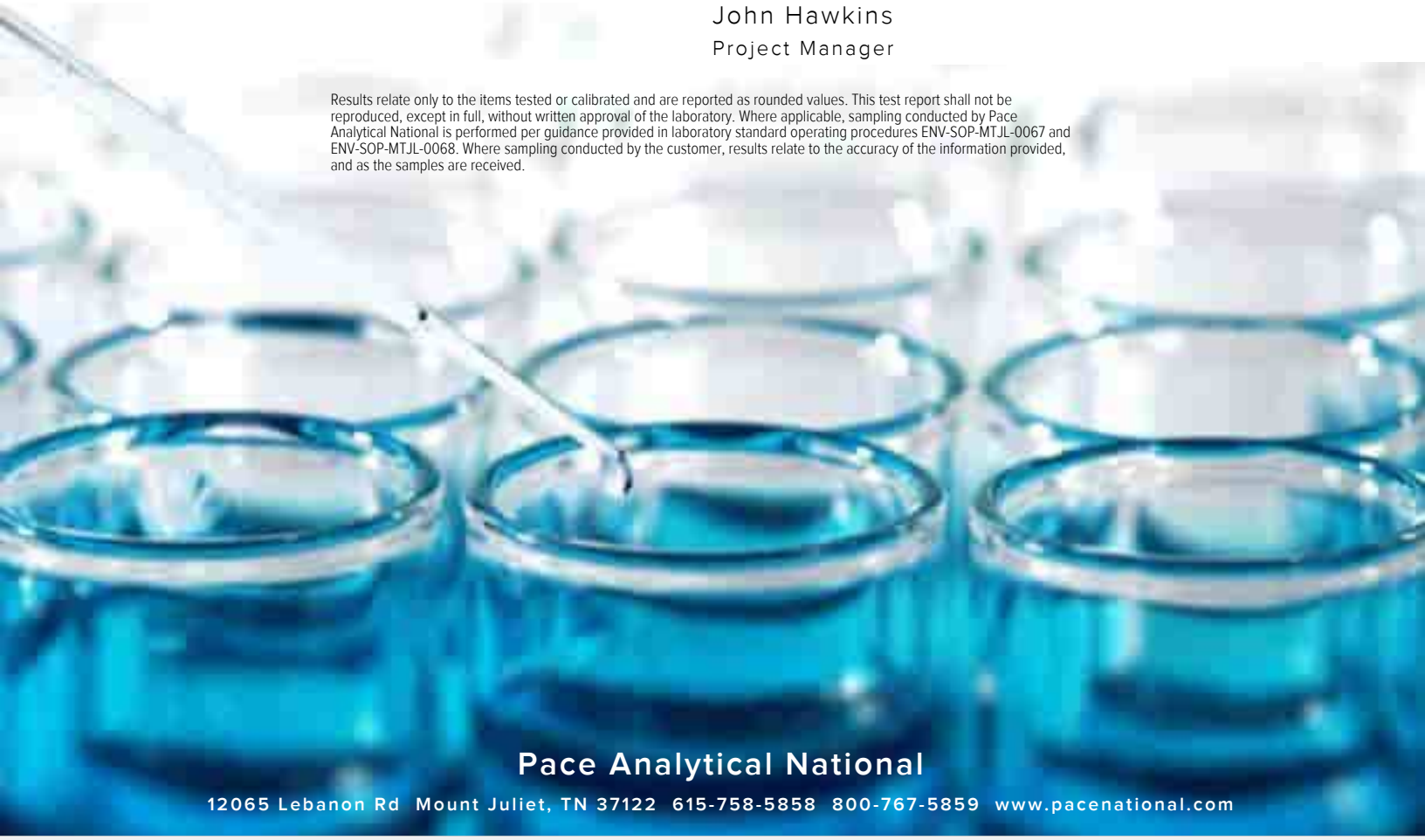
Sample Delivery Group:	L1507386
Samples Received:	06/22/2022
Project Number:	
Description:	

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By:

John Hawkins
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 4

Sr: Sample Results 5

2206938-010F MKTF-32 L1507386-01 5

Qc: Quality Control Summary 6

Wet Chemistry by Method 4500CN E-2016 6

Gl: Glossary of Terms 7

Al: Accreditations & Locations 8

Sc: Sample Chain of Custody 9

SAMPLE SUMMARY

2206938-010F MKTF-32 L1507386-01 GW

Collected by	Collected date/time	Received date/time
	06/16/22 11:05	06/22/22 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1886402	1	06/29/22 07:22	06/30/22 09:52	LDT	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	06/30/2022 09:52	WG1886402

Method Blank (MB)

(MB) R3809311-1 06/30/22 09:27

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1506624-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1506624-02 06/30/22 09:35 • (DUP) R3809311-3 06/30/22 09:36

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

L1506993-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1506993-01 06/30/22 09:45 • (DUP) R3809311-6 06/30/22 09:46

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3809311-2 06/30/22 09:28

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.0964	96.4	87.1-120	

L1506949-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1506949-02 06/30/22 09:40 • (MS) R3809311-4 06/30/22 09:41 • (MSD) R3809311-5 06/30/22 09:42

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.102	0.0991	102	99.1	1	90.0-110			2.88	20

L1507351-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1507351-05 06/30/22 09:47 • (MS) R3809311-7 06/30/22 09:48 • (MSD) R3809311-8 06/30/22 09:51

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.102	0.103	102	103	1	90.0-110			0.976	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
	The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Received by OCD: 4/21/2023 9:21:57 AM

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

J116

SUB CONTRATOR:	Pace TN	COMPANY: PACE TN	PHONE: (800) 767-5859	FAX:	(615) 758-5859
ADDRESS:	12065 Lebanon Rd		ACCOUNT #:	EMAIL:	
CITY, STATE, ZIP:	Mt. Juliet, TN 37122				

L1507386

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	2206938-010F	MKTF-32	500AMBHDP F-NAOH	Groundwater	6/16/2022 11:05:00 AM	1	Total Cyanide J and MDL -01

Sample Receipt Checklist

COC Seal Present/Intact: __Y__N
COC Signed/Accurate: __Y__N
Bottles arrive intact: __Y__N
Correct bottles used: __Y__N
Sufficient volume sent: __Y__N
RAD Screen <0.5 mR/hr: __Y__N

If Applicable
VOA Zero Headspace: __Y__N
Pres.Correct/Check: __Y__N

TEMP: 2.1 +0 = 2.1

FOIX 575T 8093 3135

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By: CME	Date: 6/20/2022	Time: 9:09 AM	Received By:	Date: 6/21/22	Time: 0945
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☒ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:

☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY

Temp of samples _____ °C Attempt to Cool ? _____

Comments: _____

Released to Imaging: 4/21/2023 9:40:26 AM

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206938**

14-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB-68213**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **68213**	RunNo: **88908**
Prep Date: **6/18/2022**	Analysis Date: **6/20/2022**	SeqNo: **3157191** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								

Sample ID: **LCSLL-68213**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **68213**	RunNo: **88908**
Prep Date: **6/18/2022**	Analysis Date: **6/20/2022**	SeqNo: **3157192** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0017	0.0030	0.002000	0	86.6	50	150			J
Beryllium	0.0021	0.0020	0.002000	0	103	50	150			
Cadmium	0.0017	0.0020	0.002000	0	87.2	50	150			J
Chromium	0.0053	0.0060	0.006000	0	89.0	50	150			J
Cobalt	0.0070	0.0060	0.006000	0	117	50	150			
Nickel	0.0027	0.010	0.005000	0	53.3	50	150			J
Silver	0.0053	0.0050	0.005000	0	106	50	150			
Vanadium	0.011	0.050	0.01000	0	105	50	150			J

Sample ID: **LCS-68213**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **68213**	RunNo: **88908**
Prep Date: **6/18/2022**	Analysis Date: **6/20/2022**	SeqNo: **3157193** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.53	0.0030	0.5000	0	106	85	115			
Beryllium	0.55	0.0020	0.5000	0	110	85	115			
Cadmium	0.52	0.0020	0.5000	0	105	85	115			
Chromium	0.51	0.0060	0.5000	0	102	85	115			
Cobalt	0.52	0.0060	0.5000	0	103	85	115			
Nickel	0.51	0.010	0.5000	0	102	85	115			
Silver	0.11	0.0050	0.1000	0	107	85	115			
Vanadium	0.54	0.050	0.5000	0	107	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206938**
14-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB-68301** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **68301** RunNo: **89044**
Prep Date: **6/22/2022** Analysis Date: **6/23/2022** SeqNo: **3162760** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LCSLL-68301** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **68301** RunNo: **89044**
Prep Date: **6/22/2022** Analysis Date: **6/23/2022** SeqNo: **3162761** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0018	0.0030	0.002000	0	90.1	50	150			J
Beryllium	0.0021	0.0020	0.002000	0	103	50	150			
Cadmium	0.0021	0.0020	0.002000	0	107	50	150			
Chromium	0.0061	0.0060	0.006000	0	102	50	150			
Cobalt	0.0055	0.0060	0.006000	0	91.3	50	150			J
Nickel	0.0057	0.010	0.005000	0	113	50	150			J
Silver	0.0049	0.0050	0.005000	0	97.8	50	150			J
Vanadium	0.0097	0.050	0.01000	0	97.5	50	150			J
Zinc	0.014	0.010	0.01000	0	137	50	150			

Sample ID: **LCS-68301** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **68301** RunNo: **89044**
Prep Date: **6/22/2022** Analysis Date: **6/23/2022** SeqNo: **3162762** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0030	0.5000	0	98.9	85	115			
Beryllium	0.52	0.0020	0.5000	0	103	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.3	85	115			
Chromium	0.49	0.0060	0.5000	0	97.5	85	115			
Cobalt	0.48	0.0060	0.5000	0	96.3	85	115			
Nickel	0.47	0.010	0.5000	0	94.9	85	115			
Silver	0.099	0.0050	0.1000	0	99.4	85	115			
Vanadium	0.50	0.050	0.5000	0	99.7	85	115			
Zinc	0.48	0.010	0.5000	0	95.5	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206938**

14-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB-C**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **C88897**	RunNo: **88897**
Prep Date:	Analysis Date: **6/20/2022**	SeqNo: **3156681** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS-C**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **C88897**	RunNo: **88897**
Prep Date:	Analysis Date: **6/20/2022**	SeqNo: **3156682** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0021	0.0020	0.002000	0	103	50	150			
Beryllium	0.0017	0.0020	0.002000	0	85.7	50	150			J
Cadmium	0.0021	0.0020	0.002000	0	103	50	150			
Chromium	0.0058	0.0060	0.006000	0	96.1	50	150			J
Cobalt	0.0057	0.0060	0.006000	0	94.7	50	150			J
Nickel	0.0050	0.010	0.005000	0	99.5	50	150			J
Silver	0.0057	0.0050	0.005000	0	114	50	150			
Vanadium	0.0080	0.050	0.01000	0	80.2	50	150			J
Zinc	0.011	0.010	0.01000	0	110	50	150			

Sample ID: **LCS-C**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **C88897**	RunNo: **88897**
Prep Date:	Analysis Date: **6/20/2022**	SeqNo: **3156683** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0020	0.5000	0	102	85	115			
Beryllium	0.51	0.0020	0.5000	0	102	85	115			
Cadmium	0.49	0.0020	0.5000	0	97.9	85	115			
Chromium	0.51	0.0060	0.5000	0	101	85	115			
Cobalt	0.48	0.0060	0.5000	0	96.1	85	115			
Nickel	0.49	0.010	0.5000	0	98.6	85	115			
Silver	0.11	0.0050	0.1000	0	110	85	115			
Vanadium	0.51	0.050	0.5000	0	102	85	115			
Zinc	0.48	0.010	0.5000	0	96.9	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206938**

14-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **2206938-001EMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB-6-16-22**	Batch ID: **C88897**	RunNo: **88897**
Prep Date:	Analysis Date: **6/20/2022**	SeqNo: **3156685** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0020	0.5000	0	102	70	130			
Beryllium	0.52	0.0020	0.5000	0	103	70	130			
Cadmium	0.50	0.0020	0.5000	0	100	70	130			
Chromium	0.50	0.0060	0.5000	0	101	70	130			
Cobalt	0.48	0.0060	0.5000	0	96.8	70	130			
Nickel	0.50	0.010	0.5000	0	99.0	70	130			
Silver	0.11	0.0050	0.1000	0	109	70	130			
Vanadium	0.51	0.050	0.5000	0	102	70	130			
Zinc	0.50	0.010	0.5000	0.005759	98.0	70	130			

Sample ID: **2206938-001EMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB-6-16-22**	Batch ID: **C88897**	RunNo: **88897**
Prep Date:	Analysis Date: **6/20/2022**	SeqNo: **3156686** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0020	0.5000	0	101	70	130	0.539	20	
Beryllium	0.52	0.0020	0.5000	0	104	70	130	0.884	20	
Cadmium	0.50	0.0020	0.5000	0	99.7	70	130	0.375	20	
Chromium	0.50	0.0060	0.5000	0	100	70	130	0.443	20	
Cobalt	0.48	0.0060	0.5000	0	96.2	70	130	0.642	20	
Nickel	0.49	0.010	0.5000	0	98.4	70	130	0.566	20	
Silver	0.11	0.0050	0.1000	0	109	70	130	0.196	20	
Vanadium	0.51	0.050	0.5000	0	101	70	130	0.379	20	
Zinc	0.49	0.010	0.5000	0.005759	97.7	70	130	0.335	20	

Sample ID: **MB-A**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A88936**	RunNo: **88936**
Prep Date:	Analysis Date: **6/21/2022**	SeqNo: **3158359** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206938**

14-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **LLLCS-A**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A88936**	RunNo: **88936**
Prep Date:	Analysis Date: **6/21/2022**	SeqNo: **3158360** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0022	0.0020	0.002000	0	108	50	150			
Beryllium	0.0021	0.0020	0.002000	0	105	50	150			
Cadmium	0.0028	0.0020	0.002000	0	138	50	150			
Chromium	0.0061	0.0060	0.006000	0	101	50	150			
Cobalt	0.0063	0.0060	0.006000	0	105	50	150			
Nickel	0.0056	0.010	0.005000	0	113	50	150			J
Silver	0.0049	0.0050	0.005000	0	98.5	50	150			J
Vanadium	0.0099	0.050	0.01000	0	99.5	50	150			J
Zinc	0.011	0.010	0.01000	0	108	50	150			

Sample ID: **LCS-A**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A88936**	RunNo: **88936**
Prep Date:	Analysis Date: **6/21/2022**	SeqNo: **3158361** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0020	0.5000	0	100	85	115			
Beryllium	0.51	0.0020	0.5000	0	101	85	115			
Cadmium	0.50	0.0020	0.5000	0	101	85	115			
Chromium	0.50	0.0060	0.5000	0	101	85	115			
Cobalt	0.49	0.0060	0.5000	0	97.3	85	115			
Nickel	0.49	0.010	0.5000	0	98.4	85	115			
Silver	0.10	0.0050	0.1000	0	104	85	115			
Vanadium	0.50	0.050	0.5000	0	100	85	115			
Zinc	0.49	0.010	0.5000	0	97.6	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206938**
14-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB-68213**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **68213**	RunNo: **88865**
Prep Date: **6/18/2022**	Analysis Date: **6/20/2022**	SeqNo: **3155316** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **MSLCSLL-68213**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **68213**	RunNo: **88865**
Prep Date: **6/18/2022**	Analysis Date: **6/20/2022**	SeqNo: **3155317** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0012	0.0010	0.001000	0	120	50	150			
Arsenic	0.00098	0.0010	0.001000	0	97.5	50	150			J
Lead	0.00050	0.00050	0.0005000	0	100	50	150			J

Sample ID: **MSLCS-68213**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **68213**	RunNo: **88865**
Prep Date: **6/18/2022**	Analysis Date: **6/20/2022**	SeqNo: **3155318** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	102	85	115			
Arsenic	0.025	0.0010	0.02500	0	101	85	115			
Lead	0.012	0.00050	0.01250	0	93.2	85	115			
Selenium	0.025	0.0010	0.02500	0	101	85	115			

Sample ID: **MSLCSLL-68213**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **68213**	RunNo: **88865**
Prep Date: **6/18/2022**	Analysis Date: **6/20/2022**	SeqNo: **3155335** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.00097	0.0010	0.001000	0	96.8	50	150			J

Sample ID: **MB-68301**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **68301**	RunNo: **89049**
Prep Date: **6/22/2022**	Analysis Date: **6/27/2022**	SeqNo: **3162816** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206938**

14-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MSLCSLL-68301**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **68301**	RunNo: **89049**
Prep Date: **6/22/2022**	Analysis Date: **6/27/2022**	SeqNo: **3162817** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00099	0.0010	0.001000	0	98.6	50	150			J
Arsenic	0.00094	0.0010	0.001000	0	94.1	50	150			J
Lead	0.00043	0.00050	0.0005000	0	86.6	50	150			J
Selenium	0.0013	0.0010	0.001000	0	127	50	150			

Sample ID: **MSLCS-68301**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **68301**	RunNo: **89049**
Prep Date: **6/22/2022**	Analysis Date: **6/27/2022**	SeqNo: **3162818** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.7	85	115			
Arsenic	0.025	0.0010	0.02500	0	98.4	85	115			
Lead	0.012	0.00050	0.01250	0	98.0	85	115			
Selenium	0.023	0.0010	0.02500	0	93.7	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206938**
14-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **C88918**	RunNo: **88918**
Prep Date:	Analysis Date: **6/21/2022**	SeqNo: **3157563** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **C88918**	RunNo: **88918**
Prep Date:	Analysis Date: **6/21/2022**	SeqNo: **3157564** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00099	0.0010	0.001000	0	98.5	50	150			J
Arsenic	0.0011	0.0010	0.001000	0	109	50	150			
Lead	0.00050	0.00050	0.0005000	0	99.9	50	150			J
Selenium	0.0011	0.0010	0.001000	0	105	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **C88918**	RunNo: **88918**
Prep Date:	Analysis Date: **6/21/2022**	SeqNo: **3157566** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	99.0	85	115			
Arsenic	0.025	0.0010	0.02500	0	101	85	115			
Lead	0.012	0.00050	0.01250	0	96.6	85	115			
Selenium	0.027	0.0010	0.02500	0	108	85	115			

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A88981**	RunNo: **88981**
Prep Date:	Analysis Date: **6/23/2022**	SeqNo: **3160067** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A88981**	RunNo: **88981**
Prep Date:	Analysis Date: **6/23/2022**	SeqNo: **3160068** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.0011	0.0010	0.001000	0	108	50	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206938**
14-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A88981**	RunNo: **88981**
Prep Date:	Analysis Date: **6/23/2022**	SeqNo: **3160068** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.00051	0.00050	0.0005000	0	102	50	150			
Selenium	0.00099	0.0010	0.001000	0	98.6	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A88981**	RunNo: **88981**
Prep Date:	Analysis Date: **6/23/2022**	SeqNo: **3160069** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	97.4	85	115			
Lead	0.012	0.00050	0.01250	0	98.6	85	115			
Selenium	0.024	0.0010	0.02500	0	96.5	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206938**

14-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB-68220**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW**	Batch ID: **68220**	RunNo: **88875**
Prep Date: **6/20/2022**	Analysis Date: **6/20/2022**	SeqNo: **3155542** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-68220**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC**	Batch ID: **68220**	RunNo: **88875**
Prep Date: **6/20/2022**	Analysis Date: **6/20/2022**	SeqNo: **3155543** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00014	0.00020	0.0001500	0	95.0	50	150			J

Sample ID: **LCS-68220**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW**	Batch ID: **68220**	RunNo: **88875**
Prep Date: **6/20/2022**	Analysis Date: **6/20/2022**	SeqNo: **3155544** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	102	85	115			

Sample ID: **2206938-001DMS**	SampType: **MS**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **EB-6-16-22**	Batch ID: **68220**	RunNo: **88875**
Prep Date: **6/20/2022**	Analysis Date: **6/20/2022**	SeqNo: **3155570** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0054	0.00020	0.005000	0	108	75	125			

Sample ID: **2206938-001DMSD**	SampType: **MSD**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **EB-6-16-22**	Batch ID: **68220**	RunNo: **88875**
Prep Date: **6/20/2022**	Analysis Date: **6/20/2022**	SeqNo: **3155571** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0053	0.00020	0.005000	0	106	75	125	1.91	20	

Sample ID: **MB-68247**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW**	Batch ID: **68247**	RunNo: **88903**
Prep Date: **6/21/2022**	Analysis Date: **6/21/2022**	SeqNo: **3157367** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206938**

14-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **LCSLL-68247**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **BatchQC**	Batch ID: **68247**	RunNo: **88903**							
Prep Date: **6/21/2022**	Analysis Date: **6/21/2022**	SeqNo: **3157368**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00011	0.00020	0.0001500	0	70.4	50	150			J

Sample ID: **LCS-68247**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **LCSW**	Batch ID: **68247**	RunNo: **88903**							
Prep Date: **6/21/2022**	Analysis Date: **6/21/2022**	SeqNo: **3157369**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	101	85	115			

Sample ID: **MB-68304**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **PBW**	Batch ID: **68304**	RunNo: **88976**							
Prep Date: **6/22/2022**	Analysis Date: **6/23/2022**	SeqNo: **3159890**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-68304**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **BatchQC**	Batch ID: **68304**	RunNo: **88976**							
Prep Date: **6/22/2022**	Analysis Date: **6/23/2022**	SeqNo: **3159891**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00015	0.00020	0.0001500	0	96.8	50	150			J

Sample ID: **LCS-68304**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **LCSW**	Batch ID: **68304**	RunNo: **88976**							
Prep Date: **6/22/2022**	Analysis Date: **6/23/2022**	SeqNo: **3159892**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0052	0.00020	0.005000	0	105	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206938**
14-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB-68190**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **68190**	RunNo: **88885**							
Prep Date: **6/20/2022**	Analysis Date: **6/20/2022**	SeqNo: **3156950**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **MB-68190**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **68190**	RunNo: **88885**							
Prep Date: **6/20/2022**	Analysis Date: **6/20/2022**	SeqNo: **3156953**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-68190**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **LCSW**	Batch ID: **68190**	RunNo: **88885**							
Prep Date: **6/20/2022**	Analysis Date: **6/20/2022**	SeqNo: **3156956**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.10	0.010	0.1000	0	104	70	130			

Sample ID: **LCSD-68190**	SampType: **LCSD**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **LCSS02**	Batch ID: **68190**	RunNo: **88885**							
Prep Date: **6/20/2022**	Analysis Date: **6/20/2022**	SeqNo: **3156958**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	112	70	130	7.41	20	

Sample ID: **MB-68319**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **68319**	RunNo: **89001**							
Prep Date: **6/23/2022**	Analysis Date: **6/23/2022**	SeqNo: **3163530**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **MB-68319**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **68319**	RunNo: **89001**							
Prep Date: **6/23/2022**	Analysis Date: **6/23/2022**	SeqNo: **3163531**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206938**

14-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **LCS-68319**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW**	Batch ID: **68319**	RunNo: **89001**
Prep Date: **6/23/2022**	Analysis Date: **6/23/2022**	SeqNo: **3163532** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.088	0.010	0.1000	0	87.8	70	130			

Sample ID: **LCSD-68319**	SampType: **LCSD**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSS02**	Batch ID: **68319**	RunNo: **89001**
Prep Date: **6/23/2022**	Analysis Date: **6/23/2022**	SeqNo: **3163533** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	109	70	130	21.9	20	R

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206938**

14-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB-68262**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **PBW**	Batch ID: **68262**	RunNo: **89239**							
Prep Date: **6/21/2022**	Analysis Date: **7/5/2022**	SeqNo: **3173223**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.019	0.064								J
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.037		0.03750		98.8	42.2	138			

Sample ID: **LCS-68262**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSW**	Batch ID: **68262**	RunNo: **89239**							
Prep Date: **6/21/2022**	Analysis Date: **7/5/2022**	SeqNo: **3173265**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.13	0.064	0.1875	0	69.7	31.7	75.4			
Surr: DNOP	0.017		0.01875		89.8	42.2	138			

Sample ID: **LCSD-68262**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSS02**	Batch ID: **68262**	RunNo: **89239**							
Prep Date: **6/21/2022**	Analysis Date: **7/5/2022**	SeqNo: **3173266**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.13	0.064	0.1875	0	68.2	31.7	75.4	2.25	20	
Surr: DNOP	0.017		0.01875		89.9	42.2	138	0	0	

Sample ID: **MB-68348**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **PBW**	Batch ID: **68348**	RunNo: **89239**							
Prep Date: **6/24/2022**	Analysis Date: **7/5/2022**	SeqNo: **3173275**	Units: **%Rec**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	0.036		0.03750		95.6	42.2	138			

Sample ID: **LCS-68348**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSW**	Batch ID: **68348**	RunNo: **89239**							
Prep Date: **6/24/2022**	Analysis Date: **7/5/2022**	SeqNo: **3173276**	Units: **%Rec**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	0.020		0.01875		108	42.2	138			

Sample ID: **LCSD-68348**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSS02**	Batch ID: **68348**	RunNo: **89239**							
Prep Date: **6/24/2022**	Analysis Date: **7/5/2022**	SeqNo: **3173277**	Units: **%Rec**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	0.021		0.01875		112	42.2	138	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206938**

14-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **PBW**	Batch ID: **G88994**	RunNo: **88994**							
Prep Date:	Analysis Date: **6/23/2022**	SeqNo: **3160360**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	19		20.00		96.0	70	130			

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **LCSW**	Batch ID: **G88994**	RunNo: **88994**							
Prep Date:	Analysis Date: **6/23/2022**	SeqNo: **3160361**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.55	0.050	0.5000	0	109	80	120			
Surr: BFB	42		20.00		211	70	130			S

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **PBW**	Batch ID: **A89029**	RunNo: **89029**							
Prep Date:	Analysis Date: **6/24/2022**	SeqNo: **3161785**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	20		20.00		98.6	70	130			

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **LCSW**	Batch ID: **A89029**	RunNo: **89029**							
Prep Date:	Analysis Date: **6/24/2022**	SeqNo: **3161786**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.54	0.050	0.5000	0	107	80	120			
Surr: BFB	42		20.00		211	70	130			S

Sample ID: **2206938-006ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **MKTF-41**	Batch ID: **A89029**	RunNo: **89029**							
Prep Date:	Analysis Date: **6/24/2022**	SeqNo: **3161790**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.56	0.050	0.5000	0.03780	105	70	130			
Surr: BFB	41		20.00		207	70	130			S

Sample ID: **2206938-006amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **MKTF-41**	Batch ID: **A89029**	RunNo: **89029**							
Prep Date:	Analysis Date: **6/24/2022**	SeqNo: **3161791**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206938**
14-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **2206938-006amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **MKTF-41**	Batch ID: **A89029**	RunNo: **89029**
Prep Date:	Analysis Date: **6/24/2022**	SeqNo: **3161791** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.57	0.050	0.5000	0.03780	106	70	130	0.601	20	
Surr: BFB	42		20.00		209	70	130	0	0	S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206938**

14-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R89017**	RunNo: **89017**
Prep Date:	Analysis Date: **6/24/2022**	SeqNo: **3161447** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	94.2	70	130			
Toluene	21	1.0	20.00	0	104	70	130			
Chlorobenzene	22	1.0	20.00	0	108	70	130			
1,1-Dichloroethene	18	1.0	20.00	0	87.8	70	130			
Trichloroethene (TCE)	19	1.0	20.00	0	94.2	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		103	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130			
Surr: Dibromofluoromethane	11		10.00		105	70	130			
Surr: Toluene-d8	9.9		10.00		98.6	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R89017**	RunNo: **89017**
Prep Date:	Analysis Date: **6/24/2022**	SeqNo: **3161448** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206938**
14-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R89017**	RunNo: **89017**
Prep Date:	Analysis Date: **6/24/2022**	SeqNo: **3161448** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206938**
14-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R89017**	RunNo: **89017**
Prep Date:	Analysis Date: **6/24/2022**	SeqNo: **3161448** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	9.7		10.00		97.1	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	9.8		10.00		98.1	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206938**
14-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **mb-68218**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **68218**	RunNo: **89168**
Prep Date: **6/20/2022**	Analysis Date: **6/30/2022**	SeqNo: **3169239** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Anthracene	ND	10								
Benz(a)anthracene	ND	5.0								
Benzo(b)fluoranthene	ND	10								
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	10								
2,4-Dinitrophenol	ND	20								
Fluoranthene	ND	10								
Fluorene	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
1-Methylnaphthalene	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
Naphthalene	ND	5.0								
Phenanthrene	ND	10								
Phenol	ND	20								
Pyrene	ND	10								
Pyridine	ND	40								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	120		200.0		60.7	29.4	87.7			
Surr: Phenol-d5	97		200.0		48.6	28.5	64.7			
Surr: 2,4,6-Tribromophenol	140		200.0		69.8	18.6	129			
Surr: Nitrobenzene-d5	66		100.0		66.4	36.9	103			
Surr: 2-Fluorobiphenyl	65		100.0		64.7	38.1	99.9			
Surr: 4-Terphenyl-d14	80		100.0		80.4	48	155			

Sample ID: **lcs-68218**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **68218**	RunNo: **89168**
Prep Date: **6/20/2022**	Analysis Date: **6/30/2022**	SeqNo: **3169240** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206938**

14-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **lcs-68218**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **68218**	RunNo: **89168**
Prep Date: **6/20/2022**	Analysis Date: **6/30/2022**	SeqNo: **3169240** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	72	10	100.0	0	72.2	21.3	104			
1,4-Dichlorobenzene	64	5.0	100.0	0	64.4	15	89.8			
Phenol	89	20	200.0	0	44.5	17	61.1			
Pyrene	86	10	100.0	0	86.2	61	123			
Surr: 2-Fluorophenol	110		200.0		53.6	29.4	87.7			
Surr: Phenol-d5	84		200.0		41.9	28.5	64.7			
Surr: 2,4,6-Tribromophenol	150		200.0		76.7	18.6	129			
Surr: Nitrobenzene-d5	71		100.0		70.5	36.9	103			
Surr: 2-Fluorobiphenyl	73		100.0		73.4	38.1	99.9			
Surr: 4-Terphenyl-d14	91		100.0		91.2	48	155			

Sample ID: **lcsd-68218**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **68218**	RunNo: **89168**
Prep Date: **6/20/2022**	Analysis Date: **6/30/2022**	SeqNo: **3169241** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	75	10	100.0	0	74.8	21.3	104	3.65	45.3	
1,4-Dichlorobenzene	63	5.0	100.0	0	63.2	15	89.8	1.81	39.6	
Phenol	88	20	200.0	0	44.2	17	61.1	0.867	42.5	
Pyrene	85	10	100.0	0	85.4	61	123	0.990	11.8	
Surr: 2-Fluorophenol	110		200.0		55.2	29.4	87.7	0	0	
Surr: Phenol-d5	84		200.0		42.2	28.5	64.7	0	0	
Surr: 2,4,6-Tribromophenol	160		200.0		80.3	18.6	129	0	0	
Surr: Nitrobenzene-d5	72		100.0		71.8	36.9	103	0	0	
Surr: 2-Fluorobiphenyl	72		100.0		72.5	38.1	99.9	0	0	
Surr: 4-Terphenyl-d14	94		100.0		94.0	48	155	0	0	

Sample ID: **lcs-68278**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **68278**	RunNo: **89212**
Prep Date: **6/22/2022**	Analysis Date: **7/3/2022**	SeqNo: **3171204** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	78	10	100.0	0	78.2	21.3	104			
1,4-Dichlorobenzene	65	5.0	100.0	0	65.4	15	89.8			
Phenol	93	20	200.0	0	46.6	17	61.1			
Pyrene	82	10	100.0	0	81.7	61	123			
Surr: 2-Fluorophenol	120		200.0		61.2	29.4	87.7			
Surr: Phenol-d5	89		200.0		44.4	28.5	64.7			
Surr: 2,4,6-Tribromophenol	150		200.0		76.5	18.6	129			
Surr: Nitrobenzene-d5	77		100.0		76.6	36.9	103			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206938**

14-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **lcs-68278**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **68278**	RunNo: **89212**
Prep Date: **6/22/2022**	Analysis Date: **7/3/2022**	SeqNo: **3171204** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorobiphenyl	76		100.0		76.2	38.1	99.9			
Surr: 4-Terphenyl-d14	94		100.0		94.3	48	155			

Sample ID: **lcsd-68278**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **68278**	RunNo: **89212**
Prep Date: **6/22/2022**	Analysis Date: **7/3/2022**	SeqNo: **3171205** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	78	10	100.0	0	77.8	21.3	104	0.557	45.3	
1,4-Dichlorobenzene	68	5.0	100.0	0	68.0	15	89.8	3.89	39.6	
Phenol	35	20	200.0	0	17.4	17	61.1	91.3	42.5	R
Pyrene	88	10	100.0	0	88.0	61	123	7.41	11.8	
Surr: 2-Fluorophenol	8.1		200.0		4.05	29.4	87.7	0	0	S
Surr: Phenol-d5	33		200.0		16.7	28.5	64.7	0	0	S
Surr: 2,4,6-Tribromophenol	13		200.0		6.58	18.6	129	0	0	S
Surr: Nitrobenzene-d5	79		100.0		79.4	36.9	103	0	0	
Surr: 2-Fluorobiphenyl	70		100.0		70.4	38.1	99.9	0	0	
Surr: 4-Terphenyl-d14	95		100.0		94.8	48	155	0	0	

Sample ID: **mb-68278**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **68278**	RunNo: **89274**
Prep Date: **6/22/2022**	Analysis Date: **7/6/2022**	SeqNo: **3174724** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Anthracene	ND	10								
Benz(a)anthracene	ND	5.0								
Benzo(b)fluoranthene	ND	10								
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	10								
2,4-Dinitrophenol	ND	20								
Fluoranthene	ND	10								
Fluorene	ND	10								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206938**
14-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **mb-68278**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **68278**	RunNo: **89274**
Prep Date: **6/22/2022**	Analysis Date: **7/6/2022**	SeqNo: **3174724** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Indeno(1,2,3-cd)pyrene	ND	10								
1-Methylnaphthalene	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
Naphthalene	ND	5.0								
Phenanthrene	ND	10								
Phenol	ND	20								
Pyrene	ND	10								
Pyridine	ND	40								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	130		200.0		64.6	29.4	87.7			
Surr: Phenol-d5	97		200.0		48.4	28.5	64.7			
Surr: 2,4,6-Tribromophenol	130		200.0		63.0	18.6	129			
Surr: Nitrobenzene-d5	79		100.0		79.1	36.9	103			
Surr: 2-Fluorobiphenyl	70		100.0		70.1	38.1	99.9			
Surr: 4-Terphenyl-d14	89		100.0		88.6	48	155			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206938**

14-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **mb-68218**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **68218**	RunNo: **89096**
Prep Date: **6/20/2022**	Analysis Date: **6/28/2022**	SeqNo: **3165520** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.30								
1-Methylnaphthalene	ND	0.30								
2-Methylnaphthalene	ND	0.30								
Acenaphthene	ND	0.30								
Fluorene	ND	0.30								
Phenanthrene	ND	0.30								
Anthracene	ND	0.30								
Fluoranthene	ND	0.30								
Pyrene	ND	1.0								
Benz(a)anthracene	ND	0.30								
Chrysene	ND	0.30								
Benzo(b)fluoranthene	ND	0.30								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	78		100.0		77.7	31.6	100			
Surr: 2,4,6-Tribromophenol	100		200.0		50.2	22	101			
Surr: 2-Fluorobiphenyl	67		100.0		67.1	26.7	90.1			
Surr: 4-Terphenyl-d14	87		100.0		87.5	72.3	147			

Sample ID: **lcs-68218 lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **68218**	RunNo: **89096**
Prep Date: **6/20/2022**	Analysis Date: **6/29/2022**	SeqNo: **3165521** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.80	0.10	2.000	0	40.0	20.2	48.4			
Naphthalene	1.5	0.30	2.000	0	77.0	21.3	79.9			
1-Methylnaphthalene	1.6	0.30	2.000	0	82.0	22.2	80.3			S
2-Methylnaphthalene	1.7	0.30	2.000	0	85.0	20.6	80.1			S
Acenaphthene	1.6	0.30	2.000	0	81.0	29.8	82.7			
Fluorene	1.9	0.30	2.000	0	93.0	33.3	86			S
Phenanthrene	1.9	0.30	2.000	0	94.0	38.2	93.9			S
Anthracene	2.5	0.30	2.000	0	127	41.1	95.6			S
Fluoranthene	3.2	0.30	2.000	0	158	52.9	123			S
Pyrene	2.0	1.0	2.000	0	101	51	113			
Benz(a)anthracene	3.4	0.30	2.000	0	170	51	147			S
Chrysene	1.6	0.30	2.000	0	82.0	55.3	115			
Benzo(b)fluoranthene	2.4	0.30	2.000	0	118	44.4	136			
Indeno(1,2,3-cd)pyrene	3.2	0.30	2.000	0	162	31.4	165			
Surr: Nitrobenzene-d5	74		100.0		74.2	31.6	100			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2206938**

14-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **lcs-68218 lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **68218**	RunNo: **89096**
Prep Date: **6/20/2022**	Analysis Date: **6/29/2022**	SeqNo: **3165521** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	100		200.0		50.2	22	101			
Surr: 2-Fluorobiphenyl	67		100.0		67.3	26.7	90.1			
Surr: 4-Terphenyl-d14	74		100.0		74.2	72.3	147			

Sample ID: **lcsd-68218 lf**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02**	Batch ID: **68218**	RunNo: **89096**
Prep Date: **6/20/2022**	Analysis Date: **6/29/2022**	SeqNo: **3165522** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.86	0.10	2.000	0	43.0	20.2	48.4	9.76	30.1	
Naphthalene	1.4	0.30	2.000	0	71.0	21.3	79.9	2.78	25.6	
1-Methylnaphthalene	1.5	0.30	2.000	0	73.0	22.2	80.3	0	25	
2-Methylnaphthalene	1.5	0.30	2.000	0	74.0	20.6	80.1	1.36	25	
Acenaphthene	1.5	0.30	2.000	0	77.0	29.8	82.7	0	27.8	
Fluorene	1.8	0.30	2.000	0	88.0	33.3	86	8.28	26.4	S
Phenanthrene	1.7	0.30	2.000	0	85.0	38.2	93.9	1.18	27.9	
Anthracene	2.0	0.30	2.000	0	102	41.1	95.6	12.5	25.6	S
Fluoranthene	2.4	0.30	2.000	0	120	52.9	123	13.3	22.8	
Pyrene	1.7	1.0	2.000	0	85.0	51	113	0	20	
Benz(a)anthracene	2.8	0.30	2.000	0	141	51	147	33.1	24.1	R
Chrysene	1.6	0.30	2.000	0	82.0	55.3	115	2.41	20	
Benzo(b)fluoranthene	2.3	0.30	2.000	0	116	44.4	136	28.6	24.5	R
Indeno(1,2,3-cd)pyrene	3.3	0.30	2.000	0	166	31.4	165	59.4	21.1	SR
Surr: Nitrobenzene-d5	78		100.0		77.9	31.6	100	0	0	
Surr: 2,4,6-Tribromophenol	98		200.0		49.2	22	101	0	0	
Surr: 2-Fluorobiphenyl	69		100.0		68.5	26.7	90.1	0	0	
Surr: 4-Terphenyl-d14	76		100.0		75.7	72.3	147	0	0	

Sample ID: **mb-68278**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **68278**	RunNo: **89252**
Prep Date: **6/22/2022**	Analysis Date: **7/5/2022**	SeqNo: **3173302** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.30								
1-Methylnaphthalene	ND	0.30								
2-Methylnaphthalene	ND	0.30								
Acenaphthene	ND	0.30								
Fluorene	ND	0.30								
Phenanthrene	ND	0.30								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206938**
14-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **mb-68278**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **68278**	RunNo: **89252**
Prep Date: **6/22/2022**	Analysis Date: **7/5/2022**	SeqNo: **3173302** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Anthracene	ND	0.30								
Fluoranthene	ND	0.30								
Pyrene	0.36	1.0								J
Benz(a)anthracene	ND	0.30								
Chrysene	ND	0.30								
Benzo(b)fluoranthene	ND	0.30								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	88		100.0		87.8	31.6	100			
Surr: 2,4,6-Tribromophenol	96		200.0		48.0	22	101			
Surr: 2-Fluorobiphenyl	85		100.0		84.7	26.7	90.1			
Surr: 4-Terphenyl-d14	130		100.0		127	72.3	147			

Sample ID: **lcs-68278**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **68278**	RunNo: **89252**
Prep Date: **6/22/2022**	Analysis Date: **7/5/2022**	SeqNo: **3173303** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	1.1	0.10	2.000	0	53.0	20.2	48.4			S
Naphthalene	1.6	0.30	2.000	0	79.0	21.3	79.9			
1-Methylnaphthalene	1.5	0.30	2.000	0	77.0	22.2	80.3			
2-Methylnaphthalene	1.5	0.30	2.000	0	76.0	20.6	80.1			
Acenaphthene	1.7	0.30	2.000	0	85.0	29.8	82.7			S
Fluorene	1.8	0.30	2.000	0	88.0	33.3	86			S
Phenanthrene	1.9	0.30	2.000	0	96.0	38.2	93.9			S
Anthracene	1.9	0.30	2.000	0	93.0	41.1	95.6			
Fluoranthene	2.1	0.30	2.000	0	103	52.9	123			
Pyrene	2.0	1.0	2.000	0	98.0	51	113			
Benz(a)anthracene	2.0	0.30	2.000	0	101	51	147			
Chrysene	2.0	0.30	2.000	0	101	55.3	115			
Benzo(b)fluoranthene	2.0	0.30	2.000	0	101	44.4	136			
Indeno(1,2,3-cd)pyrene	2.0	0.30	2.000	0	99.0	31.4	165			
Surr: Nitrobenzene-d5	85		100.0		84.8	31.6	100			
Surr: 2,4,6-Tribromophenol	94		200.0		47.1	22	101			
Surr: 2-Fluorobiphenyl	80		100.0		80.3	26.7	90.1			
Surr: 4-Terphenyl-d14	100		100.0		103	72.3	147			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2206938**
14-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **lcsd-68278**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**	
Client ID: **LCSS02**	Batch ID: **68278**	RunNo: **89252**	
Prep Date: **6/22/2022**	Analysis Date: **7/5/2022**	SeqNo: **3173304**	Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.98	0.10	2.000	0	49.0	20.2	48.4	4.17	30.1	S
Naphthalene	1.5	0.30	2.000	0	75.0	21.3	79.9	1.32	25.6	
1-Methylnaphthalene	1.5	0.30	2.000	0	73.0	22.2	80.3	4.03	25	
2-Methylnaphthalene	1.4	0.30	2.000	0	71.0	20.6	80.1	6.80	25	
Acenaphthene	1.6	0.30	2.000	0	80.0	29.8	82.7	2.47	27.8	
Fluorene	1.6	0.30	2.000	0	82.0	33.3	86	7.06	26.4	
Phenanthrene	1.8	0.30	2.000	0	88.0	38.2	93.9	3.35	27.9	
Anthracene	1.7	0.30	2.000	0	85.0	41.1	95.6	12.2	25.6	
Fluoranthene	1.8	0.30	2.000	0	89.0	52.9	123	24.6	22.8	R
Pyrene	1.7	1.0	2.000	0	87.0	51	113	5.59	20	
Benz(a)anthracene	1.8	0.30	2.000	0	91.0	51	147	21.6	24.1	
Chrysene	1.9	0.30	2.000	0	93.0	55.3	115	3.28	20	
Benzo(b)fluoranthene	1.8	0.30	2.000	0	91.0	44.4	136	10.4	24.5	
Indeno(1,2,3-cd)pyrene	1.8	0.30	2.000	0	91.0	31.4	165	11.4	21.1	
Surr: Nitrobenzene-d5	79		100.0		78.8	31.6	100	0	0	
Surr: 2,4,6-Tribromophenol	91		200.0		45.5	22	101	0	0	
Surr: 2-Fluorobiphenyl	75		100.0		74.9	26.7	90.1	0	0	
Surr: 4-Terphenyl-d14	94		100.0		93.7	72.3	147	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **Marathon** Work Order Number: **2206938** RcptNo: 1

Received By: **Cheyenne Cason** **6/17/2022 7:00:00 AM** Chad

Completed By: **Cheyenne Cason** **6/17/2022 7:23:53 AM** Chad

Reviewed By: 6.17.22 KDG 6.20.22

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐ JM 6/17/22
8. Was preservative added to bottles? Yes ☑ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☑ No ☐ NA ☐
10. Were any sample containers received broken? Yes ☐ No ☑

    # of preserved bottles checked for pH: 15 ~~14~~ 7 JM 6/20/22
    (<2 or >12 unless noted)
    Adjusted? yes
    Checked by: JM 6/17/22

11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

    Person Notified: Date:
    By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
    Regarding:
    Client Instructions:

16. Additional remarks: 0.5ml of HNO3 was added to sample 0030 for ph<2.
17. Cooler Information 0.5ml of HNO3 was added to sample 0100 for JM 6/17/22. ph<2. JM 6/20/22.

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			
2	3.2	Good	Yes			
3	3.5	Good	Yes			
4	4.7	Good	Yes			

Received by OCD: 4/21/2023 9:21:57 AM

Chain of Custody Record

Client:	Marathon Gallup Refinery
Mailing Address:	92 Giant Crossing Road Jamestown, NM,87347
Phone #:	808-640-1823
email or Fax#:	
QA/QC Package:	
X Standard	☐ Level 4 (Full Validation)
Accreditation:	☐ Az Compliance
☐ NELAC	☐ Other
X EDD (Type)	

X Standard Rush

Project Name: **2022 GW Sampling 2nd Quarter**

Project #: **697-080-001**

Project Manager: Lesli Alexander/Mackensie Swift

Sampler:

On Ice: ☑ Yes ☐ No

# of Coolers: 4

Cooler Temp(including CF): See Remarks

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2206938	See Analyte List	8260B: VOC	8270C: SVOC	8270C SIM: PAH, 1,4 Dioxane	8015: TPH GRO/DRO/MRO	E200.7: Metals	E200.7: Dissolved Metals	E245.1 Mercury	E504.1: EDB	E335.4: Cyanide Subbed		537.1: PFAS	SM 5201B: BOD	410.4: COD	SM9223B E. Coli
6/16	8:30		EB-6-16-22	14		001	X	X	X	X	X	X	X	X	X	X					
6/16	8:45		OW-66	14		002	X	X	X	X	X	X	X	X	X	X					
6/16	9:15		OW-68	14		003	X	X	X	X	X	X	X	X	X	X					
6/16	9:45		OW-67	14		004	X	X	X	X	X	X	X	X	X	V					
6/16	10:10		MKTF-43	14		005	X	X	X	X	X	X	X	X	X	V					
6/16	10:45		MKTF-41	14		006	X	X	X	X	X	X	X	X	X	X					
6/16	10:45		FB-6-16-22	3		007		X	X												
6/16	—		DUP-6-16-22	14		008	X	X	X	X	X	X	X	X	X	V					
			Trip Blank			009															
6/16	11:05		MKTF-32			010	X	X	X	X	X	V	X	V	V	X					
			per sample bottle	on 6/17/22																	

	Time:	Relinquished by:	Received by:	Via:	Date	Time
6/16	1:00	Hilario Trejo				
	Time:	Relinquished by:	Received by:	Via:	Date	Time
				Courier	6/17/22	0700

1.1 - 0.1 = 1.0
3.3 - 0.1 = 3.2
3.6 - 0.1 = 3.5
4.8 - 0.1 = 4.7

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Released to Imaging: 4/21/2023 9:40:26 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

July 19, 2022

Lesli Alexander

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX: (505) 632-3911

RE: 2022 GW Sampling 2nd Quarter OrderNo.: 2207002

Dear Lesli Alexander:

Hall Environmental Analysis Laboratory received 6 sample(s) on 7/1/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **2207002**
Date: **7/19/2022**

CLIENT: Marathon
Project: 2022 GW Sampling 2nd Quarter

"S" flags denote that the surrogate or spike recovery is outside the standard limits.

Analytical Report
Lab Order: **2207002**
Date Reported: **7/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-30-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/30/2022 8:30:00 AM
Lab ID: 2207002-001A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	7/6/2022 3:44:16 PM	G89271
Surr: BFB	92.4	0	70-130		%Rec	1	7/6/2022 3:44:16 PM	G89271
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	7/9/2022 3:52:00 AM	R89347
Toluene	0.20	0.20	1.0	J	µg/L	1	7/9/2022 3:52:00 AM	R89347
Ethylbenzene	ND	0.21	1.0		µg/L	1	7/9/2022 3:52:00 AM	R89347
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	7/9/2022 3:52:00 AM	R89347
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	7/9/2022 3:52:00 AM	R89347
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	7/9/2022 3:52:00 AM	R89347
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	7/9/2022 3:52:00 AM	R89347
Acetone	ND	2.5	10		µg/L	1	7/9/2022 3:52:00 AM	R89347
Bromomethane	ND	0.85	3.0		µg/L	1	7/9/2022 3:52:00 AM	R89347
2-Butanone	ND	2.0	10		µg/L	1	7/9/2022 3:52:00 AM	R89347
Carbon disulfide	ND	0.59	10		µg/L	1	7/9/2022 3:52:00 AM	R89347
Chlorobenzene	ND	0.16	1.0		µg/L	1	7/9/2022 3:52:00 AM	R89347
Chloroform	ND	0.13	1.0		µg/L	1	7/9/2022 3:52:00 AM	R89347
Chloromethane	ND	0.41	3.0		µg/L	1	7/9/2022 3:52:00 AM	R89347
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	7/9/2022 3:52:00 AM	R89347
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	7/9/2022 3:52:00 AM	R89347
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	7/9/2022 3:52:00 AM	R89347
Isopropylbenzene	ND	0.18	1.0		µg/L	1	7/9/2022 3:52:00 AM	R89347
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	7/9/2022 3:52:00 AM	R89347
Methylene Chloride	ND	0.50	3.0		µg/L	1	7/9/2022 3:52:00 AM	R89347
n-Butylbenzene	ND	0.25	3.0		µg/L	1	7/9/2022 3:52:00 AM	R89347
n-Propylbenzene	ND	0.18	1.0		µg/L	1	7/9/2022 3:52:00 AM	R89347
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	7/9/2022 3:52:00 AM	R89347
Styrene	ND	0.14	1.0		µg/L	1	7/9/2022 3:52:00 AM	R89347
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	7/9/2022 3:52:00 AM	R89347
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	7/9/2022 3:52:00 AM	R89347
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	7/9/2022 3:52:00 AM	R89347
Vinyl chloride	ND	0.32	1.0		µg/L	1	7/9/2022 3:52:00 AM	R89347
Xylenes, Total	ND	0.37	1.5		µg/L	1	7/9/2022 3:52:00 AM	R89347
Surr: 1,2-Dichloroethane-d4	106	0	70-130		%Rec	1	7/9/2022 3:52:00 AM	R89347
Surr: 4-Bromofluorobenzene	98.7	0	70-130		%Rec	1	7/9/2022 3:52:00 AM	R89347
Surr: Dibromofluoromethane	105	0	70-130		%Rec	1	7/9/2022 3:52:00 AM	R89347
Surr: Toluene-d8	96.6	0	70-130		%Rec	1	7/9/2022 3:52:00 AM	R89347

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2207002**
Date Reported: **7/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-30-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/30/2022 8:30:00 AM
Lab ID: 2207002-001B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **BRM**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	7/7/2022 12:29:08 AM	68566

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2207002**
Date Reported: **7/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-30-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/30/2022 8:30:00 AM
Lab ID: 2207002-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.047	0.016	0.064	J	mg/L	1	7/12/2022 6:30:00 PM	68572
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	7/12/2022 6:30:00 PM	68572
Surr: DNOP	109	0	42.2-138		%Rec	1	7/12/2022 6:30:00 PM	68572
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	7/13/2022 9:10:58 PM	68563
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	7/13/2022 9:10:58 PM	68563
Di-n-butyl phthalate	17	7.7	10		µg/L	1	7/13/2022 9:10:58 PM	68563
Di-n-octyl phthalate	ND	12	20		µg/L	1	7/13/2022 9:10:58 PM	68563
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	7/13/2022 9:10:58 PM	68563
Diethyl phthalate	ND	6.0	10		µg/L	1	7/13/2022 9:10:58 PM	68563
Dimethyl phthalate	ND	6.0	10		µg/L	1	7/13/2022 9:10:58 PM	68563
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	7/13/2022 9:10:58 PM	68563
2,4-Dinitrophenol	ND	16	20		µg/L	1	7/13/2022 9:10:58 PM	68563
2-Methylphenol	ND	5.0	10		µg/L	1	7/13/2022 9:10:58 PM	68563
3+4-Methylphenol	ND	5.1	10		µg/L	1	7/13/2022 9:10:58 PM	68563
Phenol	ND	18	20		µg/L	1	7/13/2022 9:10:58 PM	68563
Pyridine	ND	14	40		µg/L	1	7/13/2022 9:10:58 PM	68563
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	7/13/2022 9:10:58 PM	68563
Surr: 2-Fluorophenol	24.7	0	29.4-87.7	S	%Rec	1	7/13/2022 9:10:58 PM	68563
Surr: Phenol-d5	18.1	0	28.5-64.7	S	%Rec	1	7/13/2022 9:10:58 PM	68563
Surr: 2,4,6-Tribromophenol	40.3	0	18.6-129		%Rec	1	7/13/2022 9:10:58 PM	68563
Surr: Nitrobenzene-d5	33.1	0	36.9-103	S	%Rec	1	7/13/2022 9:10:58 PM	68563
Surr: 2-Fluorobiphenyl	32.2	0	38.1-99.9	S	%Rec	1	7/13/2022 9:10:58 PM	68563
Surr: 4-Terphenyl-d14	47.0	0	48-155	S	%Rec	1	7/13/2022 9:10:58 PM	68563
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	7/12/2022 7:07:00 PM	68563
Naphthalene	ND	0.20	0.30		µg/L	1	7/12/2022 7:07:00 PM	68563
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	7/12/2022 7:07:00 PM	68563
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	7/12/2022 7:07:00 PM	68563
Acenaphthene	ND	0.14	0.30		µg/L	1	7/12/2022 7:07:00 PM	68563
Fluorene	ND	0.095	0.30		µg/L	1	7/12/2022 7:07:00 PM	68563
Phenanthrene	ND	0.16	0.30		µg/L	1	7/12/2022 7:07:00 PM	68563
Anthracene	ND	0.14	0.30		µg/L	1	7/12/2022 7:07:00 PM	68563
Fluoranthene	ND	0.14	0.30		µg/L	1	7/12/2022 7:07:00 PM	68563
Pyrene	0.34	0.32	1.0	J	µg/L	1	7/12/2022 7:07:00 PM	68563
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	7/12/2022 7:07:00 PM	68563
Chrysene	ND	0.25	0.30		µg/L	1	7/12/2022 7:07:00 PM	68563
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	7/12/2022 7:07:00 PM	68563
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	7/12/2022 7:07:00 PM	68563

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2207002**
Date Reported: **7/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-30-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/30/2022 8:30:00 AM
Lab ID: 2207002-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	32.4	0	31.6-100		%Rec	1	7/12/2022 7:07:00 PM	68563
Surr: 2-Fluorobiphenyl	33.8	0	26.7-90.1		%Rec	1	7/12/2022 7:07:00 PM	68563
Surr: 4-Terphenyl-d14	48.8	0	72.3-147	S	%Rec	1	7/12/2022 7:07:00 PM	68563

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2207002**
Date Reported: **7/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-30-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/30/2022 8:30:00 AM
Lab ID: 2207002-001D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	ND	0.0016	0.0030		mg/L	1	7/11/2022 11:57:32 AM	68545
Beryllium	ND	0.00088	0.0020		mg/L	1	7/11/2022 11:57:32 AM	68545
Cadmium	ND	0.0018	0.0020		mg/L	1	7/11/2022 11:57:32 AM	68545
Chromium	ND	0.0020	0.0060		mg/L	1	7/11/2022 11:57:32 AM	68545
Cobalt	ND	0.0035	0.0060		mg/L	1	7/11/2022 11:57:32 AM	68545
Nickel	ND	0.0053	0.010		mg/L	1	7/11/2022 11:57:32 AM	68545
Silver	ND	0.0018	0.0050		mg/L	1	7/11/2022 11:57:32 AM	68545
Vanadium	ND	0.0035	0.050		mg/L	1	7/11/2022 11:57:32 AM	68545
Zinc	ND	0.0039	0.010		mg/L	1	7/11/2022 11:57:32 AM	68545
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/7/2022 2:33:29 PM	68545
Arsenic	ND	0.00013	0.0010		mg/L	1	7/7/2022 2:33:29 PM	68545
Lead	ND	0.000061	0.00050		mg/L	1	7/7/2022 2:33:29 PM	68545
Selenium	ND	0.00037	0.0010		mg/L	1	7/7/2022 2:33:29 PM	68545
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/6/2022 4:11:12 PM	68567

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2207002**
Date Reported: **7/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-6-30-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/30/2022 8:30:00 AM
Lab ID: 2207002-001E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	ND	0.0011	0.0020		mg/L	1	7/5/2022 3:29:46 PM	B89290
Beryllium	ND	0.00088	0.0020		mg/L	1	7/5/2022 3:29:46 PM	B89290
Cadmium	ND	0.00098	0.0020		mg/L	1	7/5/2022 3:29:46 PM	B89290
Chromium	ND	0.0020	0.0060		mg/L	1	7/5/2022 3:29:46 PM	B89290
Cobalt	ND	0.0024	0.0060		mg/L	1	7/5/2022 3:29:46 PM	B89290
Nickel	ND	0.0033	0.010		mg/L	1	7/5/2022 3:29:46 PM	B89290
Silver	ND	0.0013	0.0050		mg/L	1	7/5/2022 3:29:46 PM	B89290
Vanadium	ND	0.0017	0.050		mg/L	1	7/5/2022 3:29:46 PM	B89290
Zinc	0.0067	0.0032	0.010	J	mg/L	1	7/5/2022 3:29:46 PM	B89290
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/1/2022 5:01:01 PM	A89215
Arsenic	ND	0.00012	0.0010		mg/L	1	7/1/2022 5:01:01 PM	A89215
Lead	ND	0.000057	0.00050		mg/L	1	7/1/2022 5:01:01 PM	A89215
Selenium	ND	0.00034	0.0010		mg/L	1	7/1/2022 5:01:01 PM	A89215
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/6/2022 4:13:19 PM	68567

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2207002**
Date Reported: **7/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-14
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/30/2022 9:00:00 AM
Lab ID: 2207002-002A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	61	0.18	1.0		mg/L	20	7/7/2022 9:10:00 AM	G89271
Surr: BFB	111	0	70-130		%Rec	20	7/7/2022 9:10:00 AM	G89271
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	22000	110	500		µg/L	500	7/9/2022 4:15:00 AM	R89347
Toluene	ND	10	50		µg/L	50	7/9/2022 4:38:00 AM	R89347
Ethylbenzene	930	11	50		µg/L	50	7/9/2022 4:38:00 AM	R89347
Methyl tert-butyl ether (MTBE)	610	20	50		µg/L	50	7/9/2022 4:38:00 AM	R89347
1,2,4-Trimethylbenzene	ND	6.1	50		µg/L	50	7/9/2022 4:38:00 AM	R89347
1,3,5-Trimethylbenzene	ND	9.1	50		µg/L	50	7/9/2022 4:38:00 AM	R89347
1,2-Dichloroethane (EDC)	ND	13	50		µg/L	50	7/9/2022 4:38:00 AM	R89347
Acetone	ND	130	500		µg/L	50	7/9/2022 4:38:00 AM	R89347
Bromomethane	ND	43	150		µg/L	50	7/9/2022 4:38:00 AM	R89347
2-Butanone	ND	100	500		µg/L	50	7/9/2022 4:38:00 AM	R89347
Carbon disulfide	ND	30	500		µg/L	50	7/9/2022 4:38:00 AM	R89347
Chlorobenzene	ND	7.8	50		µg/L	50	7/9/2022 4:38:00 AM	R89347
Chloroform	ND	6.7	50		µg/L	50	7/9/2022 4:38:00 AM	R89347
Chloromethane	ND	21	150		µg/L	50	7/9/2022 4:38:00 AM	R89347
cis-1,2-DCE	ND	19	50		µg/L	50	7/9/2022 4:38:00 AM	R89347
1,1-Dichloroethane	ND	14	50		µg/L	50	7/9/2022 4:38:00 AM	R89347
1,1-Dichloroethene	ND	10	50		µg/L	50	7/9/2022 4:38:00 AM	R89347
Isopropylbenzene	19	9.1	50	J	µg/L	50	7/9/2022 4:38:00 AM	R89347
4-Isopropyltoluene	ND	10	50		µg/L	50	7/9/2022 4:38:00 AM	R89347
Methylene Chloride	ND	25	150		µg/L	50	7/9/2022 4:38:00 AM	R89347
n-Butylbenzene	ND	13	150		µg/L	50	7/9/2022 4:38:00 AM	R89347
n-Propylbenzene	50	9.1	50		µg/L	50	7/9/2022 4:38:00 AM	R89347
sec-Butylbenzene	ND	7.2	50		µg/L	50	7/9/2022 4:38:00 AM	R89347
Styrene	ND	6.8	50		µg/L	50	7/9/2022 4:38:00 AM	R89347
Tetrachloroethene (PCE)	ND	18	50		µg/L	50	7/9/2022 4:38:00 AM	R89347
1,1,1-Trichloroethane	ND	15	50		µg/L	50	7/9/2022 4:38:00 AM	R89347
Trichloroethene (TCE)	ND	10	50		µg/L	50	7/9/2022 4:38:00 AM	R89347
Vinyl chloride	ND	16	50		µg/L	50	7/9/2022 4:38:00 AM	R89347
Xylenes, Total	ND	19	75		µg/L	50	7/9/2022 4:38:00 AM	R89347
Surr: 1,2-Dichloroethane-d4	108	0	70-130		%Rec	50	7/9/2022 4:38:00 AM	R89347
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	50	7/9/2022 4:38:00 AM	R89347
Surr: Dibromofluoromethane	102	0	70-130		%Rec	50	7/9/2022 4:38:00 AM	R89347
Surr: Toluene-d8	97.6	0	70-130		%Rec	50	7/9/2022 4:38:00 AM	R89347

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2207002**
Date Reported: **7/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-14
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/30/2022 9:00:00 AM
Lab ID: 2207002-002B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **BRM**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	7/7/2022 12:44:34 AM	68566

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2207002**
Date Reported: **7/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-14
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/30/2022 9:00:00 AM
Lab ID: 2207002-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	2.5	0.016	0.064		mg/L	1	7/12/2022 6:54:02 PM	68572
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	7/12/2022 6:54:02 PM	68572
Surr: DNOP	92.6	0	42.2-138		%Rec	1	7/12/2022 6:54:02 PM	68572
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	7/13/2022 9:54:50 PM	68563
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	7/13/2022 9:54:50 PM	68563
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	7/13/2022 9:54:50 PM	68563
Di-n-octyl phthalate	ND	12	20		µg/L	1	7/13/2022 9:54:50 PM	68563
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	7/13/2022 9:54:50 PM	68563
Diethyl phthalate	ND	6.0	10		µg/L	1	7/13/2022 9:54:50 PM	68563
Dimethyl phthalate	ND	6.0	10		µg/L	1	7/13/2022 9:54:50 PM	68563
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	7/13/2022 9:54:50 PM	68563
2,4-Dinitrophenol	ND	16	20		µg/L	1	7/13/2022 9:54:50 PM	68563
2-Methylphenol	ND	5.0	10		µg/L	1	7/13/2022 9:54:50 PM	68563
3+4-Methylphenol	ND	5.1	10		µg/L	1	7/13/2022 9:54:50 PM	68563
Phenol	38	18	20		µg/L	1	7/13/2022 9:54:50 PM	68563
Pyridine	ND	14	40		µg/L	1	7/13/2022 9:54:50 PM	68563
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	7/13/2022 9:54:50 PM	68563
Surr: 2-Fluorophenol	50.0	0	29.4-87.7		%Rec	1	7/13/2022 9:54:50 PM	68563
Surr: Phenol-d5	39.4	0	28.5-64.7		%Rec	1	7/13/2022 9:54:50 PM	68563
Surr: 2,4,6-Tribromophenol	82.2	0	18.6-129		%Rec	1	7/13/2022 9:54:50 PM	68563
Surr: Nitrobenzene-d5	66.5	0	36.9-103		%Rec	1	7/13/2022 9:54:50 PM	68563
Surr: 2-Fluorobiphenyl	61.8	0	38.1-99.9		%Rec	1	7/13/2022 9:54:50 PM	68563
Surr: 4-Terphenyl-d14	87.3	0	48-155		%Rec	1	7/13/2022 9:54:50 PM	68563
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	7/12/2022 7:56:00 PM	68563
Naphthalene	15	0.20	0.30		µg/L	1	7/12/2022 7:56:00 PM	68563
1-Methylnaphthalene	17	0.15	0.30		µg/L	1	7/12/2022 7:56:00 PM	68563
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	7/12/2022 7:56:00 PM	68563
Acenaphthene	0.48	0.14	0.30		µg/L	1	7/12/2022 7:56:00 PM	68563
Fluorene	0.68	0.095	0.30		µg/L	1	7/12/2022 7:56:00 PM	68563
Phenanthrene	0.36	0.16	0.30		µg/L	1	7/12/2022 7:56:00 PM	68563
Anthracene	ND	0.14	0.30		µg/L	1	7/12/2022 7:56:00 PM	68563
Fluoranthene	ND	0.14	0.30		µg/L	1	7/12/2022 7:56:00 PM	68563
Pyrene	ND	0.32	1.0		µg/L	1	7/12/2022 7:56:00 PM	68563
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	7/12/2022 7:56:00 PM	68563
Chrysene	ND	0.25	0.30		µg/L	1	7/12/2022 7:56:00 PM	68563
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	7/12/2022 7:56:00 PM	68563
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	7/12/2022 7:56:00 PM	68563

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2207002**
Date Reported: **7/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-14
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/30/2022 9:00:00 AM
Lab ID: 2207002-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	65.0	0	31.6-100		%Rec	1	7/12/2022 7:56:00 PM	68563
Surr: 2-Fluorobiphenyl	50.8	0	26.7-90.1		%Rec	1	7/12/2022 7:56:00 PM	68563
Surr: 4-Terphenyl-d14	77.6	0	72.3-147		%Rec	1	7/12/2022 7:56:00 PM	68563

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2207002**
Date Reported: **7/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-14
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/30/2022 9:00:00 AM
Lab ID: 2207002-002D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	2.3	0.0079	0.015	*	mg/L	5	7/11/2022 12:00:15 PM	68545
Beryllium	ND	0.00088	0.0020		mg/L	1	7/11/2022 11:59:01 AM	68545
Cadmium	ND	0.0018	0.0020		mg/L	1	7/11/2022 11:59:01 AM	68545
Chromium	ND	0.0020	0.0060		mg/L	1	7/11/2022 11:59:01 AM	68545
Cobalt	0.010	0.0035	0.0060		mg/L	1	7/11/2022 11:59:01 AM	68545
Nickel	0.10	0.0053	0.010	*	mg/L	1	7/11/2022 11:59:01 AM	68545
Silver	ND	0.0018	0.0050		mg/L	1	7/11/2022 11:59:01 AM	68545
Vanadium	ND	0.0035	0.050		mg/L	1	7/11/2022 11:59:01 AM	68545
Zinc	0.0071	0.0039	0.010	J	mg/L	1	7/11/2022 11:59:01 AM	68545
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/7/2022 2:40:49 PM	68545
Arsenic	0.0038	0.00013	0.0010		mg/L	1	7/7/2022 2:40:49 PM	68545
Lead	0.00074	0.000061	0.00050		mg/L	1	7/7/2022 2:40:49 PM	68545
Selenium	ND	0.00037	0.0010		mg/L	1	7/7/2022 2:40:49 PM	68545
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/6/2022 4:15:27 PM	68567

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2207002**
Date Reported: **7/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-14
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/30/2022 9:00:00 AM
Lab ID: 2207002-002E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	2.4	0.0056	0.010	*	mg/L	5	7/5/2022 3:43:25 PM	B89290
Beryllium	ND	0.00088	0.0020		mg/L	1	7/5/2022 3:35:49 PM	B89290
Cadmium	ND	0.00098	0.0020		mg/L	1	7/5/2022 3:35:49 PM	B89290
Chromium	ND	0.0020	0.0060		mg/L	1	7/5/2022 3:35:49 PM	B89290
Cobalt	0.0077	0.0024	0.0060		mg/L	1	7/5/2022 3:35:49 PM	B89290
Nickel	0.097	0.0033	0.010		mg/L	1	7/5/2022 3:35:49 PM	B89290
Silver	ND	0.0013	0.0050		mg/L	1	7/5/2022 3:35:49 PM	B89290
Vanadium	ND	0.0017	0.050		mg/L	1	7/5/2022 3:35:49 PM	B89290
Zinc	0.0084	0.0032	0.010	J	mg/L	1	7/5/2022 3:35:49 PM	B89290
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/1/2022 5:03:42 PM	A89215
Arsenic	0.0034	0.00012	0.0010		mg/L	1	7/1/2022 5:03:42 PM	A89215
Lead	ND	0.000057	0.00050		mg/L	1	7/1/2022 5:03:42 PM	A89215
Selenium	ND	0.00034	0.0010		mg/L	1	7/1/2022 5:03:42 PM	A89215
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/6/2022 4:21:50 PM	68567

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2207002**
Date Reported: **7/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-30
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/30/2022 9:45:00 AM
Lab ID: 2207002-003A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	1.2	0.0090	0.050		mg/L	1	7/7/2022 9:33:33 AM	G89271
Surr: BFB	93.6	0	70-130		%Rec	1	7/7/2022 9:33:33 AM	G89271
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	1.1	5.0		µg/L	5	7/9/2022 5:47:00 AM	R89347
Toluene	ND	1.0	5.0		µg/L	5	7/9/2022 5:47:00 AM	R89347
Ethylbenzene	ND	1.1	5.0		µg/L	5	7/9/2022 5:47:00 AM	R89347
Methyl tert-butyl ether (MTBE)	1200	20	50		µg/L	50	7/9/2022 5:24:00 AM	R89347
1,2,4-Trimethylbenzene	ND	0.61	5.0		µg/L	5	7/9/2022 5:47:00 AM	R89347
1,3,5-Trimethylbenzene	ND	0.91	5.0		µg/L	5	7/9/2022 5:47:00 AM	R89347
1,2-Dichloroethane (EDC)	ND	1.3	5.0		µg/L	5	7/9/2022 5:47:00 AM	R89347
Acetone	ND	13	50		µg/L	5	7/9/2022 5:47:00 AM	R89347
Bromomethane	ND	4.3	15		µg/L	5	7/9/2022 5:47:00 AM	R89347
2-Butanone	ND	10	50		µg/L	5	7/9/2022 5:47:00 AM	R89347
Carbon disulfide	ND	3.0	50		µg/L	5	7/9/2022 5:47:00 AM	R89347
Chlorobenzene	ND	0.78	5.0		µg/L	5	7/9/2022 5:47:00 AM	R89347
Chloroform	ND	0.67	5.0		µg/L	5	7/9/2022 5:47:00 AM	R89347
Chloromethane	ND	2.1	15		µg/L	5	7/9/2022 5:47:00 AM	R89347
cis-1,2-DCE	ND	1.9	5.0		µg/L	5	7/9/2022 5:47:00 AM	R89347
1,1-Dichloroethane	ND	1.4	5.0		µg/L	5	7/9/2022 5:47:00 AM	R89347
1,1-Dichloroethene	ND	1.0	5.0		µg/L	5	7/9/2022 5:47:00 AM	R89347
Isopropylbenzene	ND	0.91	5.0		µg/L	5	7/9/2022 5:47:00 AM	R89347
4-Isopropyltoluene	ND	1.0	5.0		µg/L	5	7/9/2022 5:47:00 AM	R89347
Methylene Chloride	ND	2.5	15		µg/L	5	7/9/2022 5:47:00 AM	R89347
n-Butylbenzene	ND	1.3	15		µg/L	5	7/9/2022 5:47:00 AM	R89347
n-Propylbenzene	ND	0.91	5.0		µg/L	5	7/9/2022 5:47:00 AM	R89347
sec-Butylbenzene	ND	0.72	5.0		µg/L	5	7/9/2022 5:47:00 AM	R89347
Styrene	ND	0.68	5.0		µg/L	5	7/9/2022 5:47:00 AM	R89347
Tetrachloroethene (PCE)	ND	1.8	5.0		µg/L	5	7/9/2022 5:47:00 AM	R89347
1,1,1-Trichloroethane	ND	1.5	5.0		µg/L	5	7/9/2022 5:47:00 AM	R89347
Trichloroethene (TCE)	ND	1.0	5.0		µg/L	5	7/9/2022 5:47:00 AM	R89347
Vinyl chloride	ND	1.6	5.0		µg/L	5	7/9/2022 5:47:00 AM	R89347
Xylenes, Total	ND	1.9	7.5		µg/L	5	7/9/2022 5:47:00 AM	R89347
Surr: 1,2-Dichloroethane-d4	108	0	70-130		%Rec	5	7/9/2022 5:47:00 AM	R89347
Surr: 4-Bromofluorobenzene	100	0	70-130		%Rec	5	7/9/2022 5:47:00 AM	R89347
Surr: Dibromofluoromethane	104	0	70-130		%Rec	5	7/9/2022 5:47:00 AM	R89347
Surr: Toluene-d8	96.1	0	70-130		%Rec	5	7/9/2022 5:47:00 AM	R89347

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2207002**
Date Reported: **7/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-30
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/30/2022 9:45:00 AM
Lab ID: 2207002-003B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **BRM**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	7/7/2022 12:59:51 AM	68566

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2207002**
Date Reported: **7/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-30
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/30/2022 9:45:00 AM
Lab ID: 2207002-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	2.6	0.016	0.064		mg/L	1	7/12/2022 7:18:14 PM	68572
Motor Oil Range Organics (MRO)	0.056	0.052	0.080	J	mg/L	1	7/12/2022 7:18:14 PM	68572
Surr: DNOP	109	0	42.2-138		%Rec	1	7/12/2022 7:18:14 PM	68572
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	7/13/2022 10:38:16 PM	68563
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	7/13/2022 10:38:16 PM	68563
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	7/13/2022 10:38:16 PM	68563
Di-n-octyl phthalate	ND	12	20		µg/L	1	7/13/2022 10:38:16 PM	68563
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	7/13/2022 10:38:16 PM	68563
Diethyl phthalate	ND	6.0	10		µg/L	1	7/13/2022 10:38:16 PM	68563
Dimethyl phthalate	ND	6.0	10		µg/L	1	7/13/2022 10:38:16 PM	68563
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	7/13/2022 10:38:16 PM	68563
2,4-Dinitrophenol	ND	16	20		µg/L	1	7/13/2022 10:38:16 PM	68563
2-Methylphenol	ND	5.0	10		µg/L	1	7/13/2022 10:38:16 PM	68563
3+4-Methylphenol	ND	5.1	10		µg/L	1	7/13/2022 10:38:16 PM	68563
Phenol	ND	18	20		µg/L	1	7/13/2022 10:38:16 PM	68563
Pyridine	ND	14	40		µg/L	1	7/13/2022 10:38:16 PM	68563
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	7/13/2022 10:38:16 PM	68563
Surr: 2-Fluorophenol	40.8	0	29.4-87.7		%Rec	1	7/13/2022 10:38:16 PM	68563
Surr: Phenol-d5	30.9	0	28.5-64.7		%Rec	1	7/13/2022 10:38:16 PM	68563
Surr: 2,4,6-Tribromophenol	61.6	0	18.6-129		%Rec	1	7/13/2022 10:38:16 PM	68563
Surr: Nitrobenzene-d5	54.6	0	36.9-103		%Rec	1	7/13/2022 10:38:16 PM	68563
Surr: 2-Fluorobiphenyl	50.5	0	38.1-99.9		%Rec	1	7/13/2022 10:38:16 PM	68563
Surr: 4-Terphenyl-d14	70.4	0	48-155		%Rec	1	7/13/2022 10:38:16 PM	68563
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	0.50	0.11	1.0	J	µg/L	1	7/12/2022 8:42:00 PM	68563
Naphthalene	ND	0.20	0.30		µg/L	1	7/12/2022 8:42:00 PM	68563
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	7/12/2022 8:42:00 PM	68563
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	7/12/2022 8:42:00 PM	68563
Acenaphthene	ND	0.14	0.30		µg/L	1	7/12/2022 8:42:00 PM	68563
Fluorene	ND	0.095	0.30		µg/L	1	7/12/2022 8:42:00 PM	68563
Phenanthrene	ND	0.16	0.30		µg/L	1	7/12/2022 8:42:00 PM	68563
Anthracene	0.20	0.14	0.30	J	µg/L	1	7/12/2022 8:42:00 PM	68563
Fluoranthene	ND	0.14	0.30		µg/L	1	7/12/2022 8:42:00 PM	68563
Pyrene	ND	0.32	1.0		µg/L	1	7/12/2022 8:42:00 PM	68563
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	7/12/2022 8:42:00 PM	68563
Chrysene	ND	0.25	0.30		µg/L	1	7/12/2022 8:42:00 PM	68563
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	7/12/2022 8:42:00 PM	68563
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	7/12/2022 8:42:00 PM	68563

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2207002**
Date Reported: **7/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-30
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/30/2022 9:45:00 AM
Lab ID: 2207002-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	52.7	0	31.6-100		%Rec	1	7/12/2022 8:42:00 PM	68563
Surr: 2-Fluorobiphenyl	46.9	0	26.7-90.1		%Rec	1	7/12/2022 8:42:00 PM	68563
Surr: 4-Terphenyl-d14	67.2	0	72.3-147	S	%Rec	1	7/12/2022 8:42:00 PM	68563

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2207002**
Date Reported: **7/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-30
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/30/2022 9:45:00 AM
Lab ID: 2207002-003D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.17	0.0016	0.0030		mg/L	1	7/11/2022 12:01:40 PM	68545
Beryllium	ND	0.00088	0.0020		mg/L	1	7/11/2022 12:01:40 PM	68545
Cadmium	ND	0.0018	0.0020		mg/L	1	7/11/2022 12:01:40 PM	68545
Chromium	ND	0.0020	0.0060		mg/L	1	7/11/2022 12:01:40 PM	68545
Cobalt	0.0043	0.0035	0.0060	J	mg/L	1	7/11/2022 12:01:40 PM	68545
Nickel	0.088	0.0053	0.010		mg/L	1	7/11/2022 12:01:40 PM	68545
Silver	ND	0.0018	0.0050		mg/L	1	7/11/2022 12:01:40 PM	68545
Vanadium	ND	0.0035	0.050		mg/L	1	7/11/2022 12:01:40 PM	68545
Zinc	0.0097	0.0039	0.010	J	mg/L	1	7/11/2022 12:01:40 PM	68545
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/7/2022 2:45:42 PM	68545
Arsenic	0.00092	0.00013	0.0010	J	mg/L	1	7/7/2022 2:45:42 PM	68545
Lead	0.00099	0.000061	0.00050		mg/L	1	7/7/2022 2:45:42 PM	68545
Selenium	ND	0.00037	0.0010		mg/L	1	7/7/2022 2:45:42 PM	68545
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/6/2022 4:23:57 PM	68567

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2207002**
Date Reported: **7/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-30
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/30/2022 9:45:00 AM
Lab ID: 2207002-003E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.15	0.0011	0.0020		mg/L	1	7/5/2022 3:44:51 PM	B89290
Beryllium	ND	0.00088	0.0020		mg/L	1	7/5/2022 3:44:51 PM	B89290
Cadmium	ND	0.00098	0.0020		mg/L	1	7/5/2022 3:44:51 PM	B89290
Chromium	ND	0.0020	0.0060		mg/L	1	7/5/2022 3:44:51 PM	B89290
Cobalt	0.0037	0.0024	0.0060	J	mg/L	1	7/5/2022 3:44:51 PM	B89290
Nickel	0.089	0.0033	0.010		mg/L	1	7/5/2022 3:44:51 PM	B89290
Silver	ND	0.0013	0.0050		mg/L	1	7/5/2022 3:44:51 PM	B89290
Vanadium	ND	0.0017	0.050		mg/L	1	7/5/2022 3:44:51 PM	B89290
Zinc	0.013	0.0032	0.010		mg/L	1	7/5/2022 3:44:51 PM	B89290
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/1/2022 5:06:23 PM	A89215
Arsenic	0.00079	0.00012	0.0010	J	mg/L	1	7/1/2022 5:06:23 PM	A89215
Lead	0.00035	0.000057	0.00050	J	mg/L	1	7/1/2022 5:06:23 PM	A89215
Selenium	ND	0.00034	0.0010		mg/L	1	7/1/2022 5:06:23 PM	A89215
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/6/2022 4:26:05 PM	68567

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2207002**
Date Reported: **7/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-30-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/30/2022
Lab ID: 2207002-004A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	61	0.18	1.0		mg/L	20	7/7/2022 9:57:03 AM	G89271
Surr: BFB	115	0	70-130		%Rec	20	7/7/2022 9:57:03 AM	G89271
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	23000	110	500		µg/L	500	7/9/2022 6:33:00 AM	R89347
Toluene	ND	10	50		µg/L	50	7/9/2022 6:56:00 AM	R89347
Ethylbenzene	870	11	50		µg/L	50	7/9/2022 6:56:00 AM	R89347
Methyl tert-butyl ether (MTBE)	600	20	50		µg/L	50	7/9/2022 6:56:00 AM	R89347
1,2,4-Trimethylbenzene	ND	6.1	50		µg/L	50	7/9/2022 6:56:00 AM	R89347
1,3,5-Trimethylbenzene	ND	9.1	50		µg/L	50	7/9/2022 6:56:00 AM	R89347
1,2-Dichloroethane (EDC)	ND	13	50		µg/L	50	7/9/2022 6:56:00 AM	R89347
Acetone	ND	130	500		µg/L	50	7/9/2022 6:56:00 AM	R89347
Bromomethane	ND	43	150		µg/L	50	7/9/2022 6:56:00 AM	R89347
2-Butanone	ND	100	500		µg/L	50	7/9/2022 6:56:00 AM	R89347
Carbon disulfide	ND	30	500		µg/L	50	7/9/2022 6:56:00 AM	R89347
Chlorobenzene	ND	7.8	50		µg/L	50	7/9/2022 6:56:00 AM	R89347
Chloroform	ND	6.7	50		µg/L	50	7/9/2022 6:56:00 AM	R89347
Chloromethane	ND	21	150		µg/L	50	7/9/2022 6:56:00 AM	R89347
cis-1,2-DCE	ND	19	50		µg/L	50	7/9/2022 6:56:00 AM	R89347
1,1-Dichloroethane	ND	14	50		µg/L	50	7/9/2022 6:56:00 AM	R89347
1,1-Dichloroethene	ND	10	50		µg/L	50	7/9/2022 6:56:00 AM	R89347
Isopropylbenzene	18	9.1	50	J	µg/L	50	7/9/2022 6:56:00 AM	R89347
4-Isopropyltoluene	ND	10	50		µg/L	50	7/9/2022 6:56:00 AM	R89347
Methylene Chloride	ND	25	150		µg/L	50	7/9/2022 6:56:00 AM	R89347
n-Butylbenzene	ND	13	150		µg/L	50	7/9/2022 6:56:00 AM	R89347
n-Propylbenzene	47	9.1	50	J	µg/L	50	7/9/2022 6:56:00 AM	R89347
sec-Butylbenzene	ND	7.2	50		µg/L	50	7/9/2022 6:56:00 AM	R89347
Styrene	ND	6.8	50		µg/L	50	7/9/2022 6:56:00 AM	R89347
Tetrachloroethene (PCE)	ND	18	50		µg/L	50	7/9/2022 6:56:00 AM	R89347
1,1,1-Trichloroethane	ND	15	50		µg/L	50	7/9/2022 6:56:00 AM	R89347
Trichloroethene (TCE)	ND	10	50		µg/L	50	7/9/2022 6:56:00 AM	R89347
Vinyl chloride	ND	16	50		µg/L	50	7/9/2022 6:56:00 AM	R89347
Xylenes, Total	ND	19	75		µg/L	50	7/9/2022 6:56:00 AM	R89347
Surr: 1,2-Dichloroethane-d4	107	0	70-130		%Rec	50	7/9/2022 6:56:00 AM	R89347
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	50	7/9/2022 6:56:00 AM	R89347
Surr: Dibromofluoromethane	103	0	70-130		%Rec	50	7/9/2022 6:56:00 AM	R89347
Surr: Toluene-d8	96.5	0	70-130		%Rec	50	7/9/2022 6:56:00 AM	R89347

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2207002**
Date Reported: **7/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-30-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/30/2022
Lab ID: 2207002-004B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **BRM**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	7/7/2022 1:15:12 AM	68566

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2207002**
Date Reported: **7/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-30-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/30/2022
Lab ID: 2207002-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	2.1	0.016	0.064		mg/L	1	7/12/2022 7:42:27 PM	68572
Motor Oil Range Organics (MRO)	0.074	0.052	0.080	J	mg/L	1	7/12/2022 7:42:27 PM	68572
Surr: DNOP	86.4	0	42.2-138		%Rec	1	7/12/2022 7:42:27 PM	68572
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	7/13/2022 11:21:33 PM	68563
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	7/13/2022 11:21:33 PM	68563
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	7/13/2022 11:21:33 PM	68563
Di-n-octyl phthalate	ND	12	20		µg/L	1	7/13/2022 11:21:33 PM	68563
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	7/13/2022 11:21:33 PM	68563
Diethyl phthalate	ND	6.0	10		µg/L	1	7/13/2022 11:21:33 PM	68563
Dimethyl phthalate	ND	6.0	10		µg/L	1	7/13/2022 11:21:33 PM	68563
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	7/13/2022 11:21:33 PM	68563
2,4-Dinitrophenol	ND	16	20		µg/L	1	7/13/2022 11:21:33 PM	68563
2-Methylphenol	ND	5.0	10		µg/L	1	7/13/2022 11:21:33 PM	68563
3+4-Methylphenol	ND	5.1	10		µg/L	1	7/13/2022 11:21:33 PM	68563
Phenol	34	18	20		µg/L	1	7/13/2022 11:21:33 PM	68563
Pyridine	ND	14	40		µg/L	1	7/13/2022 11:21:33 PM	68563
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	7/13/2022 11:21:33 PM	68563
Surr: 2-Fluorophenol	44.8	0	29.4-87.7		%Rec	1	7/13/2022 11:21:33 PM	68563
Surr: Phenol-d5	35.1	0	28.5-64.7		%Rec	1	7/13/2022 11:21:33 PM	68563
Surr: 2,4,6-Tribromophenol	61.5	0	18.6-129		%Rec	1	7/13/2022 11:21:33 PM	68563
Surr: Nitrobenzene-d5	60.5	0	36.9-103		%Rec	1	7/13/2022 11:21:33 PM	68563
Surr: 2-Fluorobiphenyl	53.6	0	38.1-99.9		%Rec	1	7/13/2022 11:21:33 PM	68563
Surr: 4-Terphenyl-d14	70.7	0	48-155		%Rec	1	7/13/2022 11:21:33 PM	68563
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	1.3	0.11	1.0		µg/L	1	7/12/2022 9:31:00 PM	68563
Naphthalene	14	0.20	0.30		µg/L	1	7/12/2022 9:31:00 PM	68563
1-Methylnaphthalene	16	0.15	0.30		µg/L	1	7/12/2022 9:31:00 PM	68563
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	7/12/2022 9:31:00 PM	68563
Acenaphthene	0.46	0.14	0.30		µg/L	1	7/12/2022 9:31:00 PM	68563
Fluorene	0.62	0.095	0.30		µg/L	1	7/12/2022 9:31:00 PM	68563
Phenanthrene	0.30	0.16	0.30		µg/L	1	7/12/2022 9:31:00 PM	68563
Anthracene	ND	0.14	0.30		µg/L	1	7/12/2022 9:31:00 PM	68563
Fluoranthene	ND	0.14	0.30		µg/L	1	7/12/2022 9:31:00 PM	68563
Pyrene	ND	0.32	1.0		µg/L	1	7/12/2022 9:31:00 PM	68563
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	7/12/2022 9:31:00 PM	68563
Chrysene	ND	0.25	0.30		µg/L	1	7/12/2022 9:31:00 PM	68563
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	7/12/2022 9:31:00 PM	68563
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	7/12/2022 9:31:00 PM	68563

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2207002**
Date Reported: **7/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-30-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/30/2022
Lab ID: 2207002-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	62.4	0	31.6-100		%Rec	1	7/12/2022 9:31:00 PM	68563
Surr: 2-Fluorobiphenyl	47.7	0	26.7-90.1		%Rec	1	7/12/2022 9:31:00 PM	68563
Surr: 4-Terphenyl-d14	67.6	0	72.3-147	S	%Rec	1	7/12/2022 9:31:00 PM	68563

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2207002**
Date Reported: **7/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-30-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/30/2022
Lab ID: 2207002-004D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	2.5	0.0079	0.015	*	mg/L	5	7/11/2022 12:04:39 PM	68545
Beryllium	ND	0.00088	0.0020		mg/L	1	7/11/2022 12:03:19 PM	68545
Cadmium	ND	0.0018	0.0020		mg/L	1	7/11/2022 12:03:19 PM	68545
Chromium	ND	0.0020	0.0060		mg/L	1	7/11/2022 12:03:19 PM	68545
Cobalt	0.0095	0.0035	0.0060		mg/L	1	7/11/2022 12:03:19 PM	68545
Nickel	0.10	0.0053	0.010	*	mg/L	1	7/11/2022 12:03:19 PM	68545
Silver	ND	0.0018	0.0050		mg/L	1	7/11/2022 12:03:19 PM	68545
Vanadium	ND	0.0035	0.050		mg/L	1	7/11/2022 12:03:19 PM	68545
Zinc	0.0090	0.0039	0.010	J	mg/L	1	7/11/2022 12:03:19 PM	68545
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/7/2022 2:48:08 PM	68545
Arsenic	0.0038	0.00013	0.0010		mg/L	1	7/7/2022 2:48:08 PM	68545
Lead	0.00051	0.000061	0.00050		mg/L	1	7/7/2022 2:48:08 PM	68545
Selenium	ND	0.00037	0.0010		mg/L	1	7/7/2022 2:48:08 PM	68545
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/6/2022 4:28:14 PM	68567

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2207002**
Date Reported: **7/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-6-30-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/30/2022
Lab ID: 2207002-004E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	2.4	0.0056	0.010	*	mg/L	5	7/5/2022 3:49:28 PM	B89290
Beryllium	ND	0.00088	0.0020		mg/L	1	7/5/2022 3:48:05 PM	B89290
Cadmium	ND	0.00098	0.0020		mg/L	1	7/5/2022 3:48:05 PM	B89290
Chromium	ND	0.0020	0.0060		mg/L	1	7/5/2022 3:48:05 PM	B89290
Cobalt	0.0079	0.0024	0.0060		mg/L	1	7/5/2022 3:48:05 PM	B89290
Nickel	0.10	0.0033	0.010		mg/L	1	7/5/2022 3:48:05 PM	B89290
Silver	ND	0.0013	0.0050		mg/L	1	7/5/2022 3:48:05 PM	B89290
Vanadium	ND	0.0017	0.050		mg/L	1	7/5/2022 3:48:05 PM	B89290
Zinc	0.0092	0.0032	0.010	J	mg/L	1	7/5/2022 3:48:05 PM	B89290
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/1/2022 5:09:05 PM	A89215
Arsenic	0.0032	0.00012	0.0010		mg/L	1	7/1/2022 5:09:05 PM	A89215
Lead	ND	0.000057	0.00050		mg/L	1	7/1/2022 5:09:05 PM	A89215
Selenium	ND	0.00034	0.0010		mg/L	1	7/1/2022 5:09:05 PM	A89215
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	7/6/2022 4:30:22 PM	68567

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2207002**
Date Reported: **7/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB-6-30-22
Project: 2022 GW Sampling 2nd Quarter
Collection Date: 6/30/2022 9:45:00 AM
Lab ID: 2207002-005A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	7/9/2022 7:42:00 AM	R89347
Toluene	ND	0.20	1.0		µg/L	1	7/9/2022 7:42:00 AM	R89347
Ethylbenzene	ND	0.21	1.0		µg/L	1	7/9/2022 7:42:00 AM	R89347
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	7/9/2022 7:42:00 AM	R89347
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	7/9/2022 7:42:00 AM	R89347
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	7/9/2022 7:42:00 AM	R89347
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	7/9/2022 7:42:00 AM	R89347
Acetone	ND	2.5	10		µg/L	1	7/9/2022 7:42:00 AM	R89347
Bromomethane	ND	0.85	3.0		µg/L	1	7/9/2022 7:42:00 AM	R89347
2-Butanone	ND	2.0	10		µg/L	1	7/9/2022 7:42:00 AM	R89347
Carbon disulfide	ND	0.59	10		µg/L	1	7/9/2022 7:42:00 AM	R89347
Chlorobenzene	ND	0.16	1.0		µg/L	1	7/9/2022 7:42:00 AM	R89347
Chloroform	ND	0.13	1.0		µg/L	1	7/9/2022 7:42:00 AM	R89347
Chloromethane	ND	0.41	3.0		µg/L	1	7/9/2022 7:42:00 AM	R89347
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	7/9/2022 7:42:00 AM	R89347
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	7/9/2022 7:42:00 AM	R89347
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	7/9/2022 7:42:00 AM	R89347
Isopropylbenzene	ND	0.18	1.0		µg/L	1	7/9/2022 7:42:00 AM	R89347
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	7/9/2022 7:42:00 AM	R89347
Methylene Chloride	ND	0.50	3.0		µg/L	1	7/9/2022 7:42:00 AM	R89347
n-Butylbenzene	ND	0.25	3.0		µg/L	1	7/9/2022 7:42:00 AM	R89347
n-Propylbenzene	ND	0.18	1.0		µg/L	1	7/9/2022 7:42:00 AM	R89347
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	7/9/2022 7:42:00 AM	R89347
Styrene	ND	0.14	1.0		µg/L	1	7/9/2022 7:42:00 AM	R89347
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	7/9/2022 7:42:00 AM	R89347
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	7/9/2022 7:42:00 AM	R89347
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	7/9/2022 7:42:00 AM	R89347
Vinyl chloride	ND	0.32	1.0		µg/L	1	7/9/2022 7:42:00 AM	R89347
Xylenes, Total	ND	0.37	1.5		µg/L	1	7/9/2022 7:42:00 AM	R89347
Surr: 1,2-Dichloroethane-d4	111	0	70-130		%Rec	1	7/9/2022 7:42:00 AM	R89347
Surr: 4-Bromofluorobenzene	98.8	0	70-130		%Rec	1	7/9/2022 7:42:00 AM	R89347
Surr: Dibromofluoromethane	104	0	70-130		%Rec	1	7/9/2022 7:42:00 AM	R89347
Surr: Toluene-d8	95.0	0	70-130		%Rec	1	7/9/2022 7:42:00 AM	R89347

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2207002**
Date Reported: **7/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 2nd Quarter
Collection Date:
Lab ID: 2207002-006A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
Toluene	ND	0.20	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
Ethylbenzene	ND	0.21	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
Naphthalene	ND	0.50	2.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
Acetone	3.8	2.5	10	J	µg/L	1	7/9/2022 8:05:00 AM	R89347
Bromobenzene	ND	0.28	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
Bromodichloromethane	ND	0.20	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
Bromoform	ND	0.31	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
Bromomethane	ND	0.85	3.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
2-Butanone	ND	2.0	10		µg/L	1	7/9/2022 8:05:00 AM	R89347
Carbon disulfide	ND	0.59	10		µg/L	1	7/9/2022 8:05:00 AM	R89347
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
Chlorobenzene	ND	0.16	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
Chloroethane	ND	0.38	2.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
Chloroform	ND	0.13	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
Chloromethane	ND	0.41	3.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
4-Chlorotoluene	ND	0.34	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
Dibromochloromethane	ND	0.28	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
Dibromomethane	ND	0.31	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
Dichlorodifluoromethane	ND	0.40	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
1,2-Dichloropropane	ND	0.20	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Estimated value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference

Analytical Report
Lab Order: **2207002**
Date Reported: **7/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 2nd Quarter
Collection Date:
Lab ID: 2207002-006A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Hexachlorobutadiene	ND	0.56	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
2-Hexanone	ND	1.8	10		µg/L	1	7/9/2022 8:05:00 AM	R89347
Isopropylbenzene	ND	0.18	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
4-Methyl-2-pentanone	ND	0.88	10		µg/L	1	7/9/2022 8:05:00 AM	R89347
Methylene Chloride	ND	0.50	3.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
n-Butylbenzene	ND	0.25	3.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
n-Propylbenzene	ND	0.18	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
Styrene	ND	0.14	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
trans-1,2-DCE	ND	0.19	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
1,2,3-Trichlorobenzene	ND	0.25	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
1,1,2-Trichloroethane	ND	0.20	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
Trichlorofluoromethane	ND	0.16	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
Vinyl chloride	ND	0.32	1.0		µg/L	1	7/9/2022 8:05:00 AM	R89347
Xylenes, Total	ND	0.37	1.5		µg/L	1	7/9/2022 8:05:00 AM	R89347
Surr: 1,2-Dichloroethane-d4	109	0	70-130		%Rec	1	7/9/2022 8:05:00 AM	R89347
Surr: 4-Bromofluorobenzene	99.5	0	70-130		%Rec	1	7/9/2022 8:05:00 AM	R89347
Surr: Dibromofluoromethane	106	0	70-130		%Rec	1	7/9/2022 8:05:00 AM	R89347
Surr: Toluene-d8	95.6	0	70-130		%Rec	1	7/9/2022 8:05:00 AM	R89347

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

ANALYTICAL REPORT

July 15, 2022

Hall Environmental Analysis Laboratory

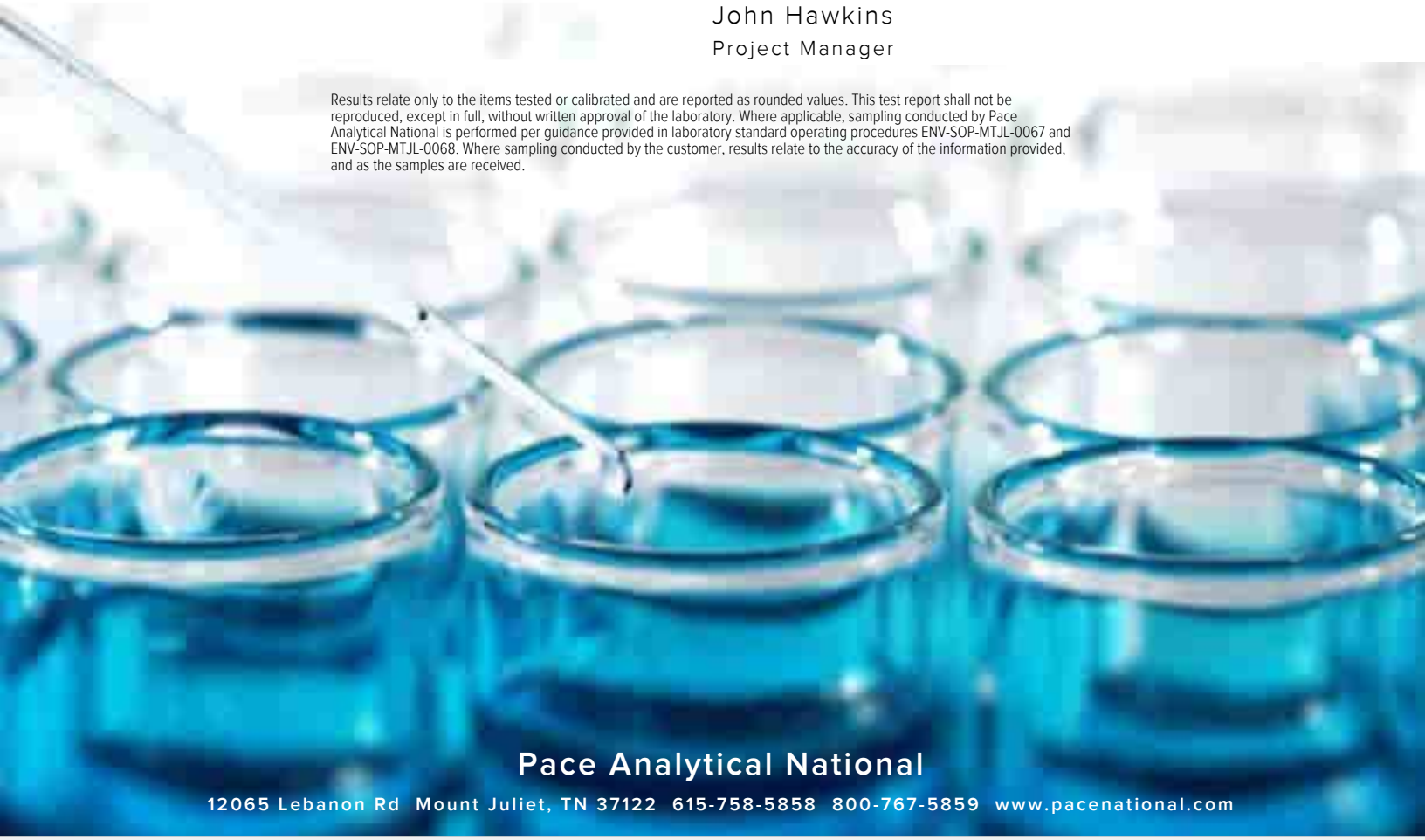
Sample Delivery Group:	L1511780
Samples Received:	07/06/2022
Project Number:	
Description:	

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By:

John Hawkins
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 4

Sr: Sample Results 5

2207002-001F EB-6-30-22 L1511780-01 5

2207002-002F OW-14 L1511780-02 6

2207002-003F OW-30 L1511780-03 7

2207002-004F DUP-6-30-22 L1511780-04 8

Qc: Quality Control Summary 9

Wet Chemistry by Method 4500CN E-2016 9

Gl: Glossary of Terms 10

Al: Accreditations & Locations 11

Sc: Sample Chain of Custody 12

SAMPLE SUMMARY

2207002-001F EB-6-30-22 L1511780-01 WW

Collected by	Collected date/time	Received date/time
	06/30/22 08:30	07/06/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1893803	1	07/12/22 19:14	07/13/22 10:44	LDT	Mt. Juliet, TN

2207002-002F OW-14 L1511780-02 WW

Collected by	Collected date/time	Received date/time
	06/30/22 09:00	07/06/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1893803	1	07/12/22 19:14	07/13/22 10:45	LDT	Mt. Juliet, TN

2207002-003F OW-30 L1511780-03 WW

Collected by	Collected date/time	Received date/time
	06/30/22 09:45	07/06/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1893803	1	07/12/22 19:14	07/13/22 10:46	LDT	Mt. Juliet, TN

2207002-004F DUP-6-30-22 L1511780-04 WW

Collected by	Collected date/time	Received date/time
	06/30/22 00:00	07/06/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1893803	1	07/12/22 19:14	07/13/22 10:47	LDT	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	07/13/2022 10:44	WG1893803

Received by OCD: 4/21/2023 9:21:57 AM

SAMPLE RESULTS - 02

2207002-0021 GW-14
Collected date/time: 06/30/22 09:00
L1511780

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	07/13/2022 10:45	WG1893803

Released to Imaging: 4/21/2023 9:40:26 AM

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.00713		0.00500	1	07/13/2022 10:46	WG1893803

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.00873		0.00500	1	07/13/2022 10:47	WG1893803

Method Blank (MB)

(MB) R3814178-1 07/13/22 10:39

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1511782-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1511782-03 07/13/22 10:48 • (DUP) R3814178-3 07/13/22 10:51

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	53.3	P1	20

L1511925-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1511925-02 07/13/22 10:58 • (DUP) R3814178-6 07/13/22 10:59

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	0.00605	ND	1	200	P1	20

Laboratory Control Sample (LCS)

(LCS) R3814178-2 07/13/22 10:40

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.0936	93.6	87.1-120	

L1511782-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1511782-03 07/13/22 10:48 • (MS) R3814178-4 07/13/22 10:52 • (MSD) R3814178-5 07/13/22 10:53

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0948	0.0919	92.8	89.9	1	90.0-110		J6	3.11	20

L1511925-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1511925-02 07/13/22 10:58 • (MS) R3814178-7 07/13/22 11:00 • (MSD) R3814178-8 07/13/22 11:03

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	0.00605	0.0971	0.0935	91.1	87.5	1	90.0-110		J6	3.78	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Received by OCD: 4/21/2023 9:21:57 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

E152

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

SUB CONTRATOR:	Pace TN	COMPANY: PACE TN	PHONE: (800) 767-5859	FAX: (615) 758-5859	
ADDRESS:	12065 Lebanon Rd		ACCOUNT #:	EMAIL:	
CITY, STATE, ZIP:	Mt. Juliet, TN 37122				

U511780

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS	
1	2207002-001F	EB-6-30-22	500AMBHDP E-NAOH	Groundwater	6/30/2022 8:30:00 AM	1	Total Cyanide J and MDL	-01
2	2207002-002F	OW-14	500AMBHDP E-NAOH	Groundwater	6/30/2022 9:00:00 AM	1	Total Cyanide J and MDL	-02
3	2207002-003F	OW-30	500AMBHDP E-NAOH	Groundwater	6/30/2022 9:45:00 AM	1	Total Cyanide J and MDL	-03
4	2207002-004F	DUP-6-30-22	500AMBHDP E-NAOH	Groundwater	6/30/2022	1	Total Cyanide J and MDL	-04

Sample Receipt Checklist

COC Seal Present/Intact: ✓Y N
COC Signed/Accurate: ✓Y N
Bottles arrive intact: ✓Y N
Correct bottles used: ✓Y N
Sufficient volume sent: ✓Y N
RAD Screen <0.5 mR/hr: ✓Y N

If Applicable
VOA Zero Headspace: ✓Y N
Pres.Correct/Check: ✓Y N

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By: CMC	Date: 7/1/2022	Time: 7:25 AM	Received By: [illegible]	Date: 7/6/22	Time: 9:15
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☐ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY
DRAM
Temp of samples .4 to .4C Attempt to Cool ?
Comments:

Released to Imaging: 4/21/2023 9:40:26 AM

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2207002**

19-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB-68545**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **68545**	RunNo: **89314**
Prep Date: **7/5/2022**	Analysis Date: **7/7/2022**	SeqNo: **3176277** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LCSLL-68545**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **68545**	RunNo: **89314**
Prep Date: **7/5/2022**	Analysis Date: **7/7/2022**	SeqNo: **3176278** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0022	0.0030	0.002000	0	108	50	150			J
Beryllium	0.0018	0.0020	0.002000	0	90.2	50	150			J
Cadmium	0.0021	0.0020	0.002000	0	104	50	150			
Chromium	0.0058	0.0060	0.006000	0	97.2	50	150			J
Cobalt	0.0055	0.0060	0.006000	0	91.2	50	150			J
Nickel	0.0066	0.010	0.005000	0	132	50	150			J
Silver	0.0049	0.0050	0.005000	0	98.7	50	150			J
Vanadium	0.0094	0.050	0.01000	0	93.9	50	150			J
Zinc	0.012	0.010	0.01000	0	119	50	150			

Sample ID: **LCS-68545**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **68545**	RunNo: **89314**
Prep Date: **7/5/2022**	Analysis Date: **7/7/2022**	SeqNo: **3176279** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0030	0.5000	0	95.4	85	115			
Beryllium	0.50	0.0020	0.5000	0	100	85	115			
Cadmium	0.47	0.0020	0.5000	0	94.7	85	115			
Chromium	0.49	0.0060	0.5000	0	97.6	85	115			
Cobalt	0.47	0.0060	0.5000	0	93.9	85	115			
Nickel	0.46	0.010	0.5000	0	92.5	85	115			
Silver	0.096	0.0050	0.1000	0	96.4	85	115			
Vanadium	0.49	0.050	0.5000	0	98.3	85	115			
Zinc	0.45	0.010	0.5000	0	90.8	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2207002**
19-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB-B** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW** Batch ID: **B89290** RunNo: **89290**
Prep Date: Analysis Date: **7/5/2022** SeqNo: **3175460** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS-B** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **B89290** RunNo: **89290**
Prep Date: Analysis Date: **7/5/2022** SeqNo: **3175461** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0015	0.0020	0.002000	0	77.2	50	150			J
Beryllium	0.0021	0.0020	0.002000	0	106	50	150			
Cadmium	0.0018	0.0020	0.002000	0	90.7	50	150			J
Chromium	0.0063	0.0060	0.006000	0	104	50	150			
Cobalt	0.0058	0.0060	0.006000	0	97.2	50	150			J
Nickel	0.0038	0.010	0.005000	0	75.1	50	150			J
Silver	0.0050	0.0050	0.005000	0	99.6	50	150			J
Vanadium	0.011	0.050	0.01000	0	106	50	150			J
Zinc	0.012	0.010	0.01000	0	121	50	150			

Sample ID: **LCS-B** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **B89290** RunNo: **89290**
Prep Date: Analysis Date: **7/5/2022** SeqNo: **3175462** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0020	0.5000	0	101	85	115			
Beryllium	0.51	0.0020	0.5000	0	103	85	115			
Cadmium	0.51	0.0020	0.5000	0	101	85	115			
Chromium	0.51	0.0060	0.5000	0	102	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.5	85	115			
Nickel	0.49	0.010	0.5000	0	97.9	85	115			
Silver	0.10	0.0050	0.1000	0	103	85	115			
Vanadium	0.51	0.050	0.5000	0	102	85	115			
Zinc	0.49	0.010	0.5000	0	98.7	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2207002**

19-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **2207002-001EMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB-6-30-22**	Batch ID: **B89290**	RunNo: **89290**
Prep Date:	Analysis Date: **7/5/2022**	SeqNo: **3175538** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.54	0.0020	0.5000	0	108	70	130			
Beryllium	0.54	0.0020	0.5000	0	109	70	130			
Cadmium	0.54	0.0020	0.5000	0	107	70	130			
Chromium	0.55	0.0060	0.5000	0	110	70	130			
Cobalt	0.53	0.0060	0.5000	0	106	70	130			
Nickel	0.50	0.010	0.5000	0	99.9	70	130			
Silver	0.10	0.0050	0.1000	0	102	70	130			
Vanadium	0.53	0.050	0.5000	0	106	70	130			
Zinc	0.50	0.010	0.5000	0.006679	99.0	70	130			

Sample ID: **2207002-001EMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB-6-30-22**	Batch ID: **B89290**	RunNo: **89290**
Prep Date:	Analysis Date: **7/5/2022**	SeqNo: **3175559** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.54	0.0020	0.5000	0	108	70	130	0.474	20	
Beryllium	0.53	0.0020	0.5000	0	105	70	130	3.61	20	
Cadmium	0.53	0.0020	0.5000	0	106	70	130	0.813	20	
Chromium	0.54	0.0060	0.5000	0	109	70	130	1.22	20	
Cobalt	0.53	0.0060	0.5000	0	105	70	130	0.293	20	
Nickel	0.50	0.010	0.5000	0	99.4	70	130	0.597	20	
Silver	0.10	0.0050	0.1000	0	101	70	130	0.681	20	
Vanadium	0.53	0.050	0.5000	0	106	70	130	0.101	20	
Zinc	0.50	0.010	0.5000	0.006679	98.7	70	130	0.322	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2207002**
19-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB-68545** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **68545** RunNo: **89286**
Prep Date: **7/5/2022** Analysis Date: **7/7/2022** SeqNo: **3175614** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **MSLCSLL-68545** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **68545** RunNo: **89286**
Prep Date: **7/5/2022** Analysis Date: **7/7/2022** SeqNo: **3175615** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0011	0.0010	0.001000	0	106	50	150			
Arsenic	0.0010	0.0010	0.001000	0	103	50	150			
Lead	0.00050	0.00050	0.0005000	0	99.1	50	150			J
Selenium	0.00096	0.0010	0.001000	0	96.5	50	150			J

Sample ID: **MSLCS-68545** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **68545** RunNo: **89286**
Prep Date: **7/5/2022** Analysis Date: **7/7/2022** SeqNo: **3175616** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	94.5	85	115			
Arsenic	0.025	0.0010	0.02500	0	101	85	115			
Lead	0.012	0.00050	0.01250	0	97.6	85	115			
Selenium	0.022	0.0010	0.02500	0	89.4	85	115			

Sample ID: **2207002-001DMSLL** SampType: **MS** TestCode: **EPA 200.8: Metals**
Client ID: **EB-6-30-22** Batch ID: **68545** RunNo: **89286**
Prep Date: **7/5/2022** Analysis Date: **7/7/2022** SeqNo: **3176538** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.023	0.0010	0.02500	0	92.3	70	130			
Arsenic	0.025	0.0010	0.02500	0	100	70	130			
Lead	0.012	0.00050	0.01250	0	94.7	70	130			
Selenium	0.022	0.0010	0.02500	0	88.4	70	130			

Sample ID: **2207002-001DMSDL** SampType: **MSD** TestCode: **EPA 200.8: Metals**
Client ID: **EB-6-30-22** Batch ID: **68545** RunNo: **89286**
Prep Date: **7/5/2022** Analysis Date: **7/7/2022** SeqNo: **3176539** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2207002**
19-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **2207002-001DMSDL** SampType: **MSD** TestCode: **EPA 200.8: Metals**
Client ID: **EB-6-30-22** Batch ID: **68545** RunNo: **89286**
Prep Date: **7/5/2022** Analysis Date: **7/7/2022** SeqNo: **3176539** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.023	0.0010	0.02500	0	93.2	70	130	1.02	20	
Arsenic	0.025	0.0010	0.02500	0	101	70	130	0.329	20	
Lead	0.012	0.00050	0.01250	0	94.2	70	130	0.495	20	
Selenium	0.023	0.0010	0.02500	0	92.8	70	130	4.87	20	

Sample ID: **2207002-002DMSLL** SampType: **MS** TestCode: **EPA 200.8: Metals**
Client ID: **OW-14** Batch ID: **68545** RunNo: **89286**
Prep Date: **7/5/2022** Analysis Date: **7/7/2022** SeqNo: **3176541** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	98.0	70	130			
Arsenic	0.030	0.0010	0.02500	0.003830	104	70	130			
Lead	0.012	0.00050	0.01250	0.0007410	89.2	70	130			
Selenium	0.025	0.0010	0.02500	0	100	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2207002**

19-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A89215**	RunNo: **89215**
Prep Date:	Analysis Date: **7/1/2022**	SeqNo: **3171349** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A89215**	RunNo: **89215**
Prep Date:	Analysis Date: **7/1/2022**	SeqNo: **3171350** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0010	0.0010	0.001000	0	101	50	150			
Arsenic	0.00099	0.0010	0.001000	0	98.9	50	150			J
Lead	0.00054	0.00050	0.0005000	0	107	50	150			
Selenium	0.0013	0.0010	0.001000	0	127	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A89215**	RunNo: **89215**
Prep Date:	Analysis Date: **7/1/2022**	SeqNo: **3171351** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.7	85	115			
Arsenic	0.025	0.0010	0.02500	0	100	85	115			
Lead	0.012	0.00050	0.01250	0	99.4	85	115			
Selenium	0.026	0.0010	0.02500	0	103	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2207002**
19-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB-68567**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **PBW**	Batch ID: **68567**	RunNo: **89265**							
Prep Date: **7/6/2022**	Analysis Date: **7/6/2022**	SeqNo: **3174063**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-68567**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **BatchQC**	Batch ID: **68567**	RunNo: **89265**							
Prep Date: **7/6/2022**	Analysis Date: **7/6/2022**	SeqNo: **3174064**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00014	0.00020	0.0001500	0	96.5	50	150			J

Sample ID: **LCS-68567**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **LCSW**	Batch ID: **68567**	RunNo: **89265**							
Prep Date: **7/6/2022**	Analysis Date: **7/6/2022**	SeqNo: **3174065**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0049	0.00020	0.005000	0	98.9	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2207002**
19-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **LCSD-68566**	SampType: **LCSD**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSS02**	Batch ID: **68566**	RunNo: **89272**
Prep Date: **7/6/2022**	Analysis Date: **7/6/2022**	SeqNo: **3174557** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.076	0.010	0.1000	0	76.3	70	130	10.9	20	

Sample ID: **MB-68566**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **68566**	RunNo: **89289**
Prep Date: **7/6/2022**	Analysis Date: **7/7/2022**	SeqNo: **3175380** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-68566**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW**	Batch ID: **68566**	RunNo: **89289**
Prep Date: **7/6/2022**	Analysis Date: **7/7/2022**	SeqNo: **3175381** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.10	0.010	0.1000	0	99.7	70	130			

Sample ID: **MB-68566**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **68566**	RunNo: **89289**
Prep Date: **7/6/2022**	Analysis Date: **7/7/2022**	SeqNo: **3175387** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2207002**
19-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB-68572**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **PBW**	Batch ID: **68572**	RunNo: **89401**
Prep Date: **7/6/2022**	Analysis Date: **7/12/2022**	SeqNo: **3181534** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.022	0.064								J
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.038		0.03750		101	42.2	138			

Sample ID: **LCS-68572**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSW**	Batch ID: **68572**	RunNo: **89401**
Prep Date: **7/6/2022**	Analysis Date: **7/12/2022**	SeqNo: **3181535** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.15	0.064	0.1875	0	77.8	31.7	75.4			S
Surr: DNOP	0.017		0.01875		92.5	42.2	138			

Sample ID: **LCSD-68572**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02**	Batch ID: **68572**	RunNo: **89401**
Prep Date: **7/6/2022**	Analysis Date: **7/12/2022**	SeqNo: **3181536** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.11	0.064	0.1875	0	60.2	31.7	75.4	25.5	20	R
Surr: DNOP	0.017		0.01875		88.5	42.2	138	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2207002**
19-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **G89271**	RunNo: **89271**
Prep Date:	Analysis Date: **7/6/2022**	SeqNo: **3174470** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	20		20.00		102	70	130			

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **G89271**	RunNo: **89271**
Prep Date:	Analysis Date: **7/6/2022**	SeqNo: **3174471** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.52	0.050	0.5000	0	103	80	120			
Surr: BFB	40		20.00		202	70	130			S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2207002**

19-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R89347**	RunNo: **89347**
Prep Date:	Analysis Date: **7/8/2022**	SeqNo: **3178063** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	99.8	70	130			
Toluene	20	1.0	20.00	0	99.0	70	130			
Chlorobenzene	20	1.0	20.00	0	100	70	130			
1,1-Dichloroethene	18	1.0	20.00	0	90.3	70	130			
Trichloroethene (TCE)	19	1.0	20.00	0	95.0	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		108	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	10		10.00		103	70	130			
Surr: Toluene-d8	9.7		10.00		97.3	70	130			

Sample ID: **100ng lcs 2**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R89347**	RunNo: **89347**
Prep Date:	Analysis Date: **7/8/2022**	SeqNo: **3178064** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	98.2	70	130			
Toluene	20	1.0	20.00	0	98.3	70	130			
Chlorobenzene	20	1.0	20.00	0	101	70	130			
1,1-Dichloroethene	17	1.0	20.00	0	87.2	70	130			
Trichloroethene (TCE)	19	1.0	20.00	0	93.5	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	9.8		10.00		97.9	70	130			

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R89347**	RunNo: **89347**
Prep Date:	Analysis Date: **7/8/2022**	SeqNo: **3178065** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2207002**
19-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R89347**	RunNo: **89347**
Prep Date:	Analysis Date: **7/8/2022**	SeqNo: **3178065** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2207002**
19-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R89347**	RunNo: **89347**
Prep Date:	Analysis Date: **7/8/2022**	SeqNo: **3178065** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		110	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	11		10.00		106	70	130			
Surr: Toluene-d8	9.6		10.00		96.0	70	130			

Sample ID: **mb 2**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R89347**	RunNo: **89347**
Prep Date:	Analysis Date: **7/8/2022**	SeqNo: **3178066** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2207002**
19-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **mb 2**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R89347**	RunNo: **89347**
Prep Date:	Analysis Date: **7/8/2022**	SeqNo: **3178066** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2207002**
19-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **mb 2**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R89347**	RunNo: **89347**
Prep Date:	Analysis Date: **7/8/2022**	SeqNo: **3178066** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		100	70	130			
Surr: Dibromofluoromethane	10		10.00		103	70	130			
Surr: Toluene-d8	9.7		10.00		96.5	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2207002**
19-Jul-22

Client: Marathon
Project: 2022 GW Sampling 2nd Quarter

Sample ID: **MB-68563**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **68563**	RunNo: **89411**
Prep Date: **7/6/2022**	Analysis Date: **7/13/2022**	SeqNo: **3183140** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Anthracene	ND	10								
Benz(a)anthracene	ND	5.0								
Benzo(b)fluoranthene	ND	10								
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	10								
2,4-Dinitrophenol	ND	20								
Fluoranthene	ND	10								
Fluorene	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
1-Methylnaphthalene	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
Naphthalene	ND	5.0								
Phenanthrene	ND	10								
Phenol	ND	20								
Pyrene	ND	10								
Pyridine	ND	40								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	92		200.0		45.8	29.4	87.7			
Surr: Phenol-d5	69		200.0		34.6	28.5	64.7			
Surr: 2,4,6-Tribromophenol	110		200.0		56.6	18.6	129			
Surr: Nitrobenzene-d5	57		100.0		56.9	36.9	103			
Surr: 2-Fluorobiphenyl	56		100.0		56.4	38.1	99.9			
Surr: 4-Terphenyl-d14	82		100.0		81.9	48	155			

Sample ID: **LCS-68563**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **68563**	RunNo: **89411**
Prep Date: **7/6/2022**	Analysis Date: **7/13/2022**	SeqNo: **3183143** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2207002**

19-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **LCS-68563**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **68563**	RunNo: **89411**
Prep Date: **7/6/2022**	Analysis Date: **7/13/2022**	SeqNo: **3183143** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	33	10	100.0	0	33.2	21.3	104			
1,4-Dichlorobenzene	27	5.0	100.0	0	27.4	15	89.8			
Phenol	42	20	200.0	0	20.9	17	61.1			
Pyrene	60	10	100.0	0	60.3	61	123			S
Surr: 2-Fluorophenol	50		200.0		25.1	29.4	87.7			S
Surr: Phenol-d5	38		200.0		19.2	28.5	64.7			S
Surr: 2,4,6-Tribromophenol	79		200.0		39.4	18.6	129			
Surr: Nitrobenzene-d5	34		100.0		33.6	36.9	103			S
Surr: 2-Fluorobiphenyl	31		100.0		31.2	38.1	99.9			S
Surr: 4-Terphenyl-d14	73		100.0		72.8	48	155			

Sample ID: **LCSD-68563**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **68563**	RunNo: **89411**
Prep Date: **7/6/2022**	Analysis Date: **7/13/2022**	SeqNo: **3183144** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	36	10	100.0	0	35.8	21.3	104	7.58	45.3	
1,4-Dichlorobenzene	33	5.0	100.0	0	33.0	15	89.8	18.6	39.6	
Phenol	49	20	200.0	0	24.3	17	61.1	15.3	42.5	
Pyrene	57	10	100.0	0	57.4	61	123	4.89	11.8	S
Surr: 2-Fluorophenol	59		200.0		29.4	29.4	87.7	0	0	
Surr: Phenol-d5	45		200.0		22.3	28.5	64.7	0	0	S
Surr: 2,4,6-Tribromophenol	76		200.0		38.2	18.6	129	0	0	
Surr: Nitrobenzene-d5	38		100.0		37.8	36.9	103	0	0	
Surr: 2-Fluorobiphenyl	35		100.0		34.8	38.1	99.9	0	0	S
Surr: 4-Terphenyl-d14	66		100.0		65.8	48	155	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2207002**

19-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **mb-68563**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**							
Client ID: **PBW**	Batch ID: **68563**	RunNo: **89437**							
Prep Date: **7/6/2022**	Analysis Date: **7/12/2022**	SeqNo: **3181819**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.30								
1-Methylnaphthalene	ND	0.30								
2-Methylnaphthalene	ND	0.30								
Acenaphthene	ND	0.30								
Fluorene	ND	0.30								
Phenanthrene	ND	0.30								
Anthracene	ND	0.30								
Fluoranthene	ND	0.30								
Pyrene	ND	1.0								
Benz(a)anthracene	ND	0.30								
Chrysene	ND	0.30								
Benzo(b)fluoranthene	ND	0.30								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	53		100.0		53.4	31.6	100			
Surr: 2,4,6-Tribromophenol	79		200.0		39.6	22	101			
Surr: 2-Fluorobiphenyl	53		100.0		53.4	26.7	90.1			
Surr: 4-Terphenyl-d14	90		100.0		89.8	72.3	147			

Sample ID: **lcs-68563 lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**							
Client ID: **LCSW**	Batch ID: **68563**	RunNo: **89437**							
Prep Date: **7/6/2022**	Analysis Date: **7/12/2022**	SeqNo: **3181820**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	1.0	0.10	2.000	0	51.0	20.2	48.4			S
Naphthalene	1.4	0.30	2.000	0	72.0	21.3	79.9			
1-Methylnaphthalene	1.4	0.30	2.000	0	70.0	22.2	80.3			
2-Methylnaphthalene	1.4	0.30	2.000	0	69.0	20.6	80.1			
Acenaphthene	1.6	0.30	2.000	0	80.0	29.8	82.7			
Fluorene	1.7	0.30	2.000	0	83.0	33.3	86			
Phenanthrene	1.8	0.30	2.000	0	90.0	38.2	93.9			
Anthracene	1.8	0.30	2.000	0	88.0	41.1	95.6			
Fluoranthene	1.9	0.30	2.000	0	94.0	52.9	123			
Pyrene	1.8	1.0	2.000	0	88.0	51	113			
Benz(a)anthracene	1.9	0.30	2.000	0	97.0	51	147			
Chrysene	1.8	0.30	2.000	0	92.0	55.3	115			
Benzo(b)fluoranthene	2.0	0.30	2.000	0	99.0	44.4	136			
Indeno(1,2,3-cd)pyrene	2.2	0.30	2.000	0	109	31.4	165			
Surr: Nitrobenzene-d5	78		100.0		78.1	31.6	100			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2207002**

19-Jul-22

Client: Marathon

Project: 2022 GW Sampling 2nd Quarter

Sample ID: **lcs-68563 lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **68563**	RunNo: **89437**
Prep Date: **7/6/2022**	Analysis Date: **7/12/2022**	SeqNo: **3181820** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	98		200.0		49.0	22	101			
Surr: 2-Fluorobiphenyl	73		100.0		72.8	26.7	90.1			
Surr: 4-Terphenyl-d14	87		100.0		87.2	72.3	147			

Sample ID: **lcsd-68563 lf**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02**	Batch ID: **68563**	RunNo: **89437**
Prep Date: **7/6/2022**	Analysis Date: **7/12/2022**	SeqNo: **3181821** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	1.1	0.10	2.000	0	53.0	20.2	48.4	3.85	30.1	S
Naphthalene	1.5	0.30	2.000	0	73.0	21.3	79.9	1.38	25.6	
1-Methylnaphthalene	1.4	0.30	2.000	0	72.0	22.2	80.3	2.82	25	
2-Methylnaphthalene	1.4	0.30	2.000	0	71.0	20.6	80.1	2.86	25	
Acenaphthene	1.7	0.30	2.000	0	83.0	29.8	82.7	3.68	27.8	S
Fluorene	1.7	0.30	2.000	0	87.0	33.3	86	4.71	26.4	S
Phenanthrene	1.9	0.30	2.000	0	94.0	38.2	93.9	4.35	27.9	S
Anthracene	1.9	0.30	2.000	0	94.0	41.1	95.6	6.59	25.6	
Fluoranthene	2.0	0.30	2.000	0	100	52.9	123	6.19	22.8	
Pyrene	1.9	1.0	2.000	0	94.0	51	113	6.59	20	
Benz(a)anthracene	2.0	0.30	2.000	0	100	51	147	3.05	24.1	
Chrysene	1.9	0.30	2.000	0	95.0	55.3	115	3.21	20	
Benzo(b)fluoranthene	2.0	0.30	2.000	0	100	44.4	136	1.01	24.5	
Indeno(1,2,3-cd)pyrene	2.3	0.30	2.000	0	116	31.4	165	6.22	21.1	
Surr: Nitrobenzene-d5	79		100.0		79.0	31.6	100	0	0	
Surr: 2,4,6-Tribromophenol	100		200.0		49.9	22	101	0	0	
Surr: 2-Fluorobiphenyl	75		100.0		74.9	26.7	90.1	0	0	
Surr: 4-Terphenyl-d14	80		100.0		79.5	72.3	147	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **Marathon** Work Order Number: **2207002** RcptNo: **1**

Received By: **Juan Rojas** **7/1/2022 6:50:00 AM**

Completed By: **Cheyenne Cason** **7/1/2022 7:16:15 AM**

Reviewed By: 7-1-22

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☑	No ☐	NA ☐
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: 2 4 (<2 or >12 unless noted)

Adjusted? NO

Checked by: jn 7/1/22

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.2	Good	Not Present			
2	2.3	Good	Not Present			

Released to Imaging: 4/21/2023 9:40:26 AM
Received by OCD: 4/21/2023 9:21:57 AM

Chain of Custody Record

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Client: Marathon Gallup Refinery	X Standard Rush
Mailing Address: 92 Giant Crossing Road, Jamestown, NM,87347	Project Name: **2022 GW Sampling 2nd Quarter**
Phone #: 808-640-1823	Project #: **697-080-001**
email or Fax#:	Project Manager: Lesli Alexander/Mackensie Swift
QA/QC Package: X Standard ☐ Level 4 (Full Validation)	Sampler:
Accreditation: ☐ Az Compliance ☐ NELAC ☐ Other	On Ice: ☒ Yes ☐ No
X EDD (Type)	# of Coolers: 2
	Cooler Temp(including CF): 2.3-0.1=2.2 2.4-0.1=2.3

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2207002	See Analyte List	8260B: VOC	8270C: SVOC	8270C SIM: PAH, 1,4 Dioxane	8015: TPH GRO/DRO/MRO	E200.7: Metals	E200.7: Dissolved Metals	E245.1 Mercury	E504.1: EDB	E335.4: Cyanide Subbed		537.1: PFAS	SM 5201B: BOD	410.4: COD	SM9223B E. Coli
6/30	8:30		EB-6-30-22	14		001	X	X	X	X	X	X	X	X	X	X					
6/30	9:00		GW-14	14		002	X	X	X	X	X	X	X	X	X	X					
6/30	9:45		GW-36	14		003	X	X	X	X	X	X	X	X	X	X					
6/30	—		DUP-6-30-22	14		004	X	X	X	X	X	X	X	X	X	X					
6/30	9:45		FB-6-30-22	3		005		X	X												
			Trip Blank			006															

Date	Time	Relinquished by	Received by	Via	Date	Time
6/30/22	11:00	Hilario Trejo				
				courier	7/1/22	6:50
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Appendix C-3. 3rd Quarter Analytical Reports

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

November 03, 2022

Lesli Alexander

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX: (505) 632-3911

RE: 2022 GW Sampling 3rd Quarter OrderNo.: 2209A41

Dear Lesli Alexander:

Hall Environmental Analysis Laboratory received 13 sample(s) on 9/21/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **2209A41**
Date: **11/3/2022**

CLIENT: Marathon
Project: 2022 GW Sampling 3rd Quarter

Analytical Notes Regarding this Workorder are listed below:

"S" flagged surrogates/spikes denote that the analyte recovery was outstide of the standard limits. See footnotes.

Analytical Notes Regarding EPA Method 8270 and 8270 SIMS:
Naphthalene, 1-Methylnaphthalene, and 2-Methylnaphthalene were reported by EPA Method 8270 instead of EPA Method 8270SIMs becuase of their elevated concentrations for sample OW-58, OW-58A, OW-63, Dup 9-20-22

Analytical Notes Regarding EPA Method 8015DRO:
The LCS/LCSD had slighly elevated recoveries.

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-20-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 8:00:00 AM
Lab ID: 2209A41-001A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	9/23/2022 8:23:00 AM	R91291
Surr: BFB	103	0	70-130		%Rec	1	9/23/2022 8:23:00 AM	R91291
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	9/22/2022 3:56:00 PM	R91223
Toluene	ND	0.20	1.0		µg/L	1	9/22/2022 3:56:00 PM	R91223
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/22/2022 3:56:00 PM	R91223
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/22/2022 3:56:00 PM	R91223
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/22/2022 3:56:00 PM	R91223
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/22/2022 3:56:00 PM	R91223
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/22/2022 3:56:00 PM	R91223
Acetone	7.0	2.5	10	J	µg/L	1	9/22/2022 3:56:00 PM	R91223
Bromomethane	ND	0.85	3.0		µg/L	1	9/22/2022 3:56:00 PM	R91223
2-Butanone	ND	2.0	10		µg/L	1	9/22/2022 3:56:00 PM	R91223
Carbon disulfide	ND	0.59	10		µg/L	1	9/22/2022 3:56:00 PM	R91223
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/22/2022 3:56:00 PM	R91223
Chloroform	ND	0.13	1.0		µg/L	1	9/22/2022 3:56:00 PM	R91223
Chloromethane	ND	0.41	3.0		µg/L	1	9/22/2022 3:56:00 PM	R91223
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/22/2022 3:56:00 PM	R91223
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/22/2022 3:56:00 PM	R91223
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/22/2022 3:56:00 PM	R91223
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/22/2022 3:56:00 PM	R91223
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/22/2022 3:56:00 PM	R91223
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/22/2022 3:56:00 PM	R91223
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/22/2022 3:56:00 PM	R91223
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/22/2022 3:56:00 PM	R91223
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/22/2022 3:56:00 PM	R91223
Styrene	ND	0.14	1.0		µg/L	1	9/22/2022 3:56:00 PM	R91223
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/22/2022 3:56:00 PM	R91223
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/22/2022 3:56:00 PM	R91223
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/22/2022 3:56:00 PM	R91223
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/22/2022 3:56:00 PM	R91223
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/22/2022 3:56:00 PM	R91223
Surr: 1,2-Dichloroethane-d4	108	0	70-130		%Rec	1	9/22/2022 3:56:00 PM	R91223
Surr: 4-Bromofluorobenzene	90.4	0	70-130		%Rec	1	9/22/2022 3:56:00 PM	R91223
Surr: Dibromofluoromethane	106	0	70-130		%Rec	1	9/22/2022 3:56:00 PM	R91223
Surr: Toluene-d8	88.5	0	70-130		%Rec	1	9/22/2022 3:56:00 PM	R91223

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-20-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 8:00:00 AM
Lab ID: 2209A41-001B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	9/22/2022 5:30:40 PM	70321

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-20-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 8:00:00 AM
Lab ID: 2209A41-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.027	0.016	0.064	JE	mg/L	1	9/26/2022 6:28:51 PM	70323
Motor Oil Range Organics (MRO)	ND	0.052	0.080	E	mg/L	1	9/26/2022 6:28:51 PM	70323
Surr: DNOP	97.2	0	42.2-138		%Rec	1	9/26/2022 6:28:51 PM	70323
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	9/28/2022 11:20:25 PM	70340
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/28/2022 11:20:25 PM	70340
Di-n-butyl phthalate	12	7.7	10		µg/L	1	9/28/2022 11:20:25 PM	70340
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/28/2022 11:20:25 PM	70340
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/28/2022 11:20:25 PM	70340
Diethyl phthalate	ND	6.0	10		µg/L	1	9/28/2022 11:20:25 PM	70340
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/28/2022 11:20:25 PM	70340
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	9/28/2022 11:20:25 PM	70340
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/28/2022 11:20:25 PM	70340
2-Methylphenol	ND	5.0	10		µg/L	1	9/28/2022 11:20:25 PM	70340
3+4-Methylphenol	ND	5.1	10		µg/L	1	9/28/2022 11:20:25 PM	70340
Phenol	ND	18	20		µg/L	1	9/28/2022 11:20:25 PM	70340
Pyridine	ND	14	40		µg/L	1	9/28/2022 11:20:25 PM	70340
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/28/2022 11:20:25 PM	70340
Surr: 2-Fluorophenol	18.9	0	15-84.5		%Rec	1	9/28/2022 11:20:25 PM	70340
Surr: Phenol-d5	15.0	0	15-67	S	%Rec	1	9/28/2022 11:20:25 PM	70340
Surr: 2,4,6-Tribromophenol	32.2	0	15-108		%Rec	1	9/28/2022 11:20:25 PM	70340
Surr: Nitrobenzene-d5	24.6	0	16.8-112		%Rec	1	9/28/2022 11:20:25 PM	70340
Surr: 2-Fluorobiphenyl	25.3	0	15-101		%Rec	1	9/28/2022 11:20:25 PM	70340
Surr: 4-Terphenyl-d14	35.6	0	34.4-134		%Rec	1	9/28/2022 11:20:25 PM	70340
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	9/26/2022 11:22:00 AM	70340
Naphthalene	ND	0.20	0.30		µg/L	1	9/26/2022 11:22:00 AM	70340
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	9/26/2022 11:22:00 AM	70340
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	9/26/2022 11:22:00 AM	70340
Acenaphthene	ND	0.14	0.30		µg/L	1	9/26/2022 11:22:00 AM	70340
Fluorene	ND	0.095	0.30		µg/L	1	9/26/2022 11:22:00 AM	70340
Phenanthrene	ND	0.16	0.30		µg/L	1	9/26/2022 11:22:00 AM	70340
Anthracene	ND	0.14	0.30		µg/L	1	9/26/2022 11:22:00 AM	70340
Fluoranthene	ND	0.14	0.30		µg/L	1	9/26/2022 11:22:00 AM	70340
Pyrene	0.34	0.32	1.0	J	µg/L	1	9/26/2022 11:22:00 AM	70340
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/26/2022 11:22:00 AM	70340
Chrysene	ND	0.25	0.30		µg/L	1	9/26/2022 11:22:00 AM	70340
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/26/2022 11:22:00 AM	70340
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/26/2022 11:22:00 AM	70340

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-20-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 8:00:00 AM
Lab ID: 2209A41-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	23.3	0	31.6-100	S	%Rec	1	9/26/2022 11:22:00 AM	70340
Surr: 2-Fluorobiphenyl	25.5	0	26.7-90.1	S	%Rec	1	9/26/2022 11:22:00 AM	70340
Surr: 4-Terphenyl-d14	31.9	0	72.3-147	S	%Rec	1	9/26/2022 11:22:00 AM	70340

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-20-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 8:00:00 AM
Lab ID: 2209A41-001D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	ND	0.0016	0.0030		mg/L	1	9/23/2022 12:59:23 PM	70359
Beryllium	ND	0.00088	0.0020		mg/L	1	9/23/2022 12:59:23 PM	70359
Cadmium	ND	0.0018	0.0020		mg/L	1	9/23/2022 12:59:23 PM	70359
Chromium	ND	0.0020	0.0060		mg/L	1	9/23/2022 12:59:23 PM	70359
Cobalt	ND	0.0035	0.0060		mg/L	1	9/23/2022 12:59:23 PM	70359
Nickel	ND	0.0053	0.010		mg/L	1	9/26/2022 1:58:13 PM	70359
Silver	ND	0.0018	0.0050		mg/L	1	9/23/2022 12:59:23 PM	70359
Vanadium	ND	0.0035	0.050		mg/L	1	9/23/2022 12:59:23 PM	70359
Zinc	ND	0.0039	0.010		mg/L	1	9/23/2022 12:59:23 PM	70359
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/26/2022 12:19:14 PM	70359
Arsenic	ND	0.00013	0.0010		mg/L	1	9/26/2022 12:19:14 PM	70359
Lead	ND	0.000061	0.00050		mg/L	1	9/26/2022 12:19:14 PM	70359
Selenium	ND	0.00037	0.0010		mg/L	1	9/26/2022 12:19:14 PM	70359
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/26/2022 12:02:24 PM	70390

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-20-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 8:00:00 AM
Lab ID: 2209A41-001E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	ND	0.0011	0.0020		mg/L	1	9/28/2022 2:45:30 PM	B91392
Beryllium	ND	0.00088	0.0020		mg/L	1	9/28/2022 2:45:30 PM	B91392
Cadmium	ND	0.00098	0.0020		mg/L	1	9/28/2022 2:45:30 PM	B91392
Chromium	0.0023	0.0020	0.0060	J	mg/L	1	9/28/2022 2:45:30 PM	B91392
Cobalt	ND	0.0024	0.0060		mg/L	1	9/28/2022 2:45:30 PM	B91392
Nickel	ND	0.0033	0.010		mg/L	1	9/28/2022 2:45:30 PM	B91392
Silver	ND	0.0013	0.0050		mg/L	1	10/5/2022 10:27:11 AM	A91594
Vanadium	0.0022	0.0017	0.050	J	mg/L	1	9/28/2022 2:45:30 PM	B91392
Zinc	0.0066	0.0032	0.010	J	mg/L	1	9/28/2022 2:45:30 PM	B91392
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/22/2022 1:54:46 PM	B91237
Arsenic	ND	0.00012	0.0010		mg/L	1	9/22/2022 1:54:46 PM	B91237
Lead	ND	0.000057	0.00050		mg/L	1	9/22/2022 1:54:46 PM	B91237
Selenium	ND	0.00034	0.0010		mg/L	1	9/22/2022 1:54:46 PM	B91237
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/26/2022 12:04:29 PM	70390

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-20-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 8:00:00 AM
Lab ID: 2209A41-001F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PACE**	
Cyanide	ND	0.00500	0.00500		mg/L	1	9/28/2022 7:07:00 PM	R92219

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-63
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 10:15:00 AM
Lab ID: 2209A41-003A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	26	0.45	2.5		mg/L	50	9/23/2022 8:43:00 AM	R91291
Surr: BFB	116	0	70-130		%Rec	50	9/23/2022 8:43:00 AM	R91291
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	9000	110	500		µg/L	500	9/22/2022 4:42:00 PM	R91223
Toluene	43	10	50	J	µg/L	50	9/22/2022 5:05:00 PM	R91223
Ethylbenzene	1100	11	50		µg/L	50	9/22/2022 5:05:00 PM	R91223
Methyl tert-butyl ether (MTBE)	23	20	50	J	µg/L	50	9/22/2022 5:05:00 PM	R91223
1,2,4-Trimethylbenzene	ND	6.1	50		µg/L	50	9/22/2022 5:05:00 PM	R91223
1,3,5-Trimethylbenzene	ND	9.1	50		µg/L	50	9/22/2022 5:05:00 PM	R91223
1,2-Dichloroethane (EDC)	ND	13	50		µg/L	50	9/22/2022 5:05:00 PM	R91223
Acetone	ND	130	500		µg/L	50	9/22/2022 5:05:00 PM	R91223
Bromomethane	ND	43	150		µg/L	50	9/22/2022 5:05:00 PM	R91223
2-Butanone	ND	100	500		µg/L	50	9/22/2022 5:05:00 PM	R91223
Carbon disulfide	ND	30	500		µg/L	50	9/22/2022 5:05:00 PM	R91223
Chlorobenzene	ND	7.8	50		µg/L	50	9/22/2022 5:05:00 PM	R91223
Chloroform	ND	6.7	50		µg/L	50	9/22/2022 5:05:00 PM	R91223
Chloromethane	ND	21	150		µg/L	50	9/22/2022 5:05:00 PM	R91223
cis-1,2-DCE	ND	19	50		µg/L	50	9/22/2022 5:05:00 PM	R91223
1,1-Dichloroethane	ND	14	50		µg/L	50	9/22/2022 5:05:00 PM	R91223
1,1-Dichloroethene	ND	10	50		µg/L	50	9/22/2022 5:05:00 PM	R91223
Isopropylbenzene	44	9.1	50	J	µg/L	50	9/22/2022 5:05:00 PM	R91223
4-Isopropyltoluene	ND	10	50		µg/L	50	9/22/2022 5:05:00 PM	R91223
Methylene Chloride	ND	25	150		µg/L	50	9/22/2022 5:05:00 PM	R91223
n-Butylbenzene	21	13	150	J	µg/L	50	9/22/2022 5:05:00 PM	R91223
n-Propylbenzene	140	9.1	50		µg/L	50	9/22/2022 5:05:00 PM	R91223
sec-Butylbenzene	ND	7.2	50		µg/L	50	9/22/2022 5:05:00 PM	R91223
Styrene	ND	6.8	50		µg/L	50	9/22/2022 5:05:00 PM	R91223
Tetrachloroethene (PCE)	ND	18	50		µg/L	50	9/22/2022 5:05:00 PM	R91223
1,1,1-Trichloroethane	ND	15	50		µg/L	50	9/22/2022 5:05:00 PM	R91223
Trichloroethene (TCE)	ND	10	50		µg/L	50	9/22/2022 5:05:00 PM	R91223
Vinyl chloride	ND	16	50		µg/L	50	9/22/2022 5:05:00 PM	R91223
Xylenes, Total	110	19	75		µg/L	50	9/22/2022 5:05:00 PM	R91223
Surr: 1,2-Dichloroethane-d4	95.6	0	70-130		%Rec	50	9/22/2022 5:05:00 PM	R91223
Surr: 4-Bromofluorobenzene	92.6	0	70-130		%Rec	50	9/22/2022 5:05:00 PM	R91223
Surr: Dibromofluoromethane	96.1	0	70-130		%Rec	50	9/22/2022 5:05:00 PM	R91223
Surr: Toluene-d8	91.4	0	70-130		%Rec	50	9/22/2022 5:05:00 PM	R91223

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-63
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 10:15:00 AM
Lab ID: 2209A41-003B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	9/22/2022 5:45:44 PM	70321

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-63
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 10:15:00 AM
Lab ID: 2209A41-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	2.8	0.016	0.064	E	mg/L	1	9/26/2022 6:52:40 PM	70323
Motor Oil Range Organics (MRO)	ND	0.052	0.080	E	mg/L	1	9/26/2022 6:52:40 PM	70323
Surr: DNOP	100	0	42.2-138		%Rec	1	9/26/2022 6:52:40 PM	70323
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	9/29/2022 12:02:41 AM	70340
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/29/2022 12:02:41 AM	70340
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	9/29/2022 12:02:41 AM	70340
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/29/2022 12:02:41 AM	70340
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/29/2022 12:02:41 AM	70340
Diethyl phthalate	ND	6.0	10		µg/L	1	9/29/2022 12:02:41 AM	70340
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/29/2022 12:02:41 AM	70340
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	9/29/2022 12:02:41 AM	70340
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/29/2022 12:02:41 AM	70340
1-Methylnaphthalene	52	4.3	5.0		µg/L	1	9/29/2022 12:02:41 AM	70340
2-Methylnaphthalene	74	4.2	5.0		µg/L	1	9/29/2022 12:02:41 AM	70340
2-Methylphenol	ND	5.0	10		µg/L	1	9/29/2022 12:02:41 AM	70340
3+4-Methylphenol	ND	5.1	10		µg/L	1	9/29/2022 12:02:41 AM	70340
Naphthalene	180	3.2	5.0		µg/L	1	9/29/2022 12:02:41 AM	70340
Phenol	25	18	20		µg/L	1	9/29/2022 12:02:41 AM	70340
Pyridine	ND	14	40		µg/L	1	9/29/2022 12:02:41 AM	70340
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/29/2022 12:02:41 AM	70340
Surr: 2-Fluorophenol	43.1	0	15-84.5		%Rec	1	9/29/2022 12:02:41 AM	70340
Surr: Phenol-d5	34.5	0	15-67		%Rec	1	9/29/2022 12:02:41 AM	70340
Surr: 2,4,6-Tribromophenol	65.7	0	15-108		%Rec	1	9/29/2022 12:02:41 AM	70340
Surr: Nitrobenzene-d5	53.9	0	16.8-112		%Rec	1	9/29/2022 12:02:41 AM	70340
Surr: 2-Fluorobiphenyl	54.5	0	15-101		%Rec	1	9/29/2022 12:02:41 AM	70340
Surr: 4-Terphenyl-d14	71.7	0	34.4-134		%Rec	1	9/29/2022 12:02:41 AM	70340
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	1.2	0.11	1.0		µg/L	1	9/26/2022 12:05:00 PM	70340
Acenaphthene	0.68	0.14	0.30		µg/L	1	9/26/2022 12:05:00 PM	70340
Fluorene	1.2	0.095	0.30		µg/L	1	9/26/2022 12:05:00 PM	70340
Phenanthrene	0.92	0.16	0.30		µg/L	1	9/26/2022 12:05:00 PM	70340
Anthracene	ND	0.14	0.30		µg/L	1	9/26/2022 12:05:00 PM	70340
Fluoranthene	ND	0.14	0.30		µg/L	1	9/26/2022 12:05:00 PM	70340
Pyrene	ND	0.32	1.0		µg/L	1	9/26/2022 12:05:00 PM	70340
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/26/2022 12:05:00 PM	70340
Chrysene	ND	0.25	0.30		µg/L	1	9/26/2022 12:05:00 PM	70340
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/26/2022 12:05:00 PM	70340
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/26/2022 12:05:00 PM	70340

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-63
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 10:15:00 AM
Lab ID: 2209A41-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	54.3	0	31.6-100		%Rec	1	9/26/2022 12:05:00 PM	70340
Surr: 2-Fluorobiphenyl	45.2	0	26.7-90.1		%Rec	1	9/26/2022 12:05:00 PM	70340
Surr: 4-Terphenyl-d14	52.0	0	72.3-147	S	%Rec	1	9/26/2022 12:05:00 PM	70340

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-63
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 10:15:00 AM
Lab ID: 2209A41-003D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	4.4	0.0079	0.015	*	mg/L	5	9/23/2022 1:14:01 PM	70359
Beryllium	ND	0.00088	0.0020		mg/L	1	9/23/2022 1:05:40 PM	70359
Cadmium	ND	0.0018	0.0020		mg/L	1	9/23/2022 1:05:40 PM	70359
Chromium	ND	0.0020	0.0060		mg/L	1	9/23/2022 1:05:40 PM	70359
Cobalt	ND	0.0035	0.0060		mg/L	1	9/23/2022 1:05:40 PM	70359
Nickel	0.033	0.0053	0.010		mg/L	1	9/26/2022 1:59:53 PM	70359
Silver	ND	0.0018	0.0050		mg/L	1	9/23/2022 1:05:40 PM	70359
Vanadium	ND	0.0035	0.050		mg/L	1	9/23/2022 1:05:40 PM	70359
Zinc	ND	0.0039	0.010		mg/L	1	9/23/2022 1:05:40 PM	70359
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/26/2022 12:21:41 PM	70359
Arsenic	0.0072	0.00013	0.0010		mg/L	1	9/26/2022 12:21:41 PM	70359
Lead	0.000087	0.000061	0.00050	J	mg/L	1	9/26/2022 12:21:41 PM	70359
Selenium	ND	0.00037	0.0010		mg/L	1	9/26/2022 12:21:41 PM	70359
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/26/2022 12:06:36 PM	70390

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-63
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 10:15:00 AM
Lab ID: 2209A41-003E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	4.4	0.0056	0.010	*	mg/L	5	9/28/2022 2:51:24 PM	B91392
Beryllium	ND	0.00088	0.0020		mg/L	1	9/28/2022 2:49:34 PM	B91392
Cadmium	ND	0.00098	0.0020		mg/L	1	9/28/2022 2:49:34 PM	B91392
Chromium	ND	0.0020	0.0060		mg/L	1	9/28/2022 2:49:34 PM	B91392
Cobalt	ND	0.0024	0.0060		mg/L	1	9/28/2022 2:49:34 PM	B91392
Nickel	0.028	0.0033	0.010		mg/L	1	9/28/2022 2:49:34 PM	B91392
Silver	0.0015	0.0013	0.0050	J	mg/L	1	10/5/2022 10:32:04 AM	A91594
Vanadium	0.0045	0.0017	0.050	J	mg/L	1	9/28/2022 2:49:34 PM	B91392
Zinc	0.012	0.0032	0.010		mg/L	1	9/28/2022 2:49:34 PM	B91392
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/22/2022 2:02:50 PM	B91237
Arsenic	0.0071	0.00012	0.0010		mg/L	1	9/22/2022 2:02:50 PM	B91237
Lead	ND	0.000057	0.00050		mg/L	1	9/22/2022 2:02:50 PM	B91237
Selenium	ND	0.00034	0.0010		mg/L	1	9/22/2022 2:02:50 PM	B91237
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/26/2022 12:08:42 PM	70390

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-63
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 10:15:00 AM
Lab ID: 2209A41-003F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PACE**	
Cyanide	0.0120	0.00500	0.00500		mg/L	1	9/28/2022 7:10:00 PM	R92219

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58A
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 10:45:00 AM
Lab ID: 2209A41-004A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	58	0.18	1.0		mg/L	20	9/23/2022 9:03:00 AM	R91291
Surr: BFB	171	0	70-130	S	%Rec	20	9/23/2022 9:03:00 AM	R91291
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	8900	45	200		µg/L	200	9/22/2022 5:51:00 PM	R91223
Toluene	6300	40	200		µg/L	200	9/22/2022 5:51:00 PM	R91223
Ethylbenzene	1000	4.3	20		µg/L	20	9/22/2022 6:15:00 PM	R91223
Methyl tert-butyl ether (MTBE)	2200	7.9	20		µg/L	20	9/22/2022 6:15:00 PM	R91223
1,2,4-Trimethylbenzene	780	2.4	20		µg/L	20	9/22/2022 6:15:00 PM	R91223
1,3,5-Trimethylbenzene	210	3.6	20		µg/L	20	9/22/2022 6:15:00 PM	R91223
1,2-Dichloroethane (EDC)	ND	5.1	20		µg/L	20	9/22/2022 6:15:00 PM	R91223
Acetone	ND	50	200		µg/L	20	9/22/2022 6:15:00 PM	R91223
Bromomethane	ND	17	60		µg/L	20	9/22/2022 6:15:00 PM	R91223
2-Butanone	ND	41	200		µg/L	20	9/22/2022 6:15:00 PM	R91223
Carbon disulfide	ND	12	200		µg/L	20	9/22/2022 6:15:00 PM	R91223
Chlorobenzene	ND	3.1	20		µg/L	20	9/22/2022 6:15:00 PM	R91223
Chloroform	ND	2.7	20		µg/L	20	9/22/2022 6:15:00 PM	R91223
Chloromethane	ND	8.2	60		µg/L	20	9/22/2022 6:15:00 PM	R91223
cis-1,2-DCE	ND	7.8	20		µg/L	20	9/22/2022 6:15:00 PM	R91223
1,1-Dichloroethane	ND	5.5	20		µg/L	20	9/22/2022 6:15:00 PM	R91223
1,1-Dichloroethene	ND	4.0	20		µg/L	20	9/22/2022 6:15:00 PM	R91223
Isopropylbenzene	71	3.7	20		µg/L	20	9/22/2022 6:15:00 PM	R91223
4-Isopropyltoluene	13	4.0	20	J	µg/L	20	9/22/2022 6:15:00 PM	R91223
Methylene Chloride	ND	10	60		µg/L	20	9/22/2022 6:15:00 PM	R91223
n-Butylbenzene	19	5.1	60	J	µg/L	20	9/22/2022 6:15:00 PM	R91223
n-Propylbenzene	130	3.6	20		µg/L	20	9/22/2022 6:15:00 PM	R91223
sec-Butylbenzene	16	2.9	20	J	µg/L	20	9/22/2022 6:15:00 PM	R91223
Styrene	ND	2.7	20		µg/L	20	9/22/2022 6:15:00 PM	R91223
Tetrachloroethene (PCE)	ND	7.1	20		µg/L	20	9/22/2022 6:15:00 PM	R91223
1,1,1-Trichloroethane	ND	6.0	20		µg/L	20	9/22/2022 6:15:00 PM	R91223
Trichloroethene (TCE)	ND	4.1	20		µg/L	20	9/22/2022 6:15:00 PM	R91223
Vinyl chloride	ND	6.4	20		µg/L	20	9/22/2022 6:15:00 PM	R91223
Xylenes, Total	4300	7.4	30		µg/L	20	9/22/2022 6:15:00 PM	R91223
Surr: 1,2-Dichloroethane-d4	94.0	0	70-130		%Rec	20	9/22/2022 6:15:00 PM	R91223
Surr: 4-Bromofluorobenzene	92.0	0	70-130		%Rec	20	9/22/2022 6:15:00 PM	R91223
Surr: Dibromofluoromethane	91.8	0	70-130		%Rec	20	9/22/2022 6:15:00 PM	R91223
Surr: Toluene-d8	92.6	0	70-130		%Rec	20	9/22/2022 6:15:00 PM	R91223

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58A
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 10:45:00 AM
Lab ID: 2209A41-004B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	9/22/2022 6:00:55 PM	70321

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58A
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 10:45:00 AM
Lab ID: 2209A41-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	16	0.080	0.32	E	mg/L	5	9/27/2022 11:59:36 AM	70323
Motor Oil Range Organics (MRO)	ND	0.26	0.40	E,D	mg/L	5	9/27/2022 11:59:36 AM	70323
Surr: DNOP	125	0	42.2-138		%Rec	5	9/27/2022 11:59:36 AM	70323
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	9/29/2022 12:45:01 AM	70340
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/29/2022 12:45:01 AM	70340
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	9/29/2022 12:45:01 AM	70340
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/29/2022 12:45:01 AM	70340
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/29/2022 12:45:01 AM	70340
Diethyl phthalate	ND	6.0	10		µg/L	1	9/29/2022 12:45:01 AM	70340
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/29/2022 12:45:01 AM	70340
2,4-Dimethylphenol	6.5	5.8	10	J	µg/L	1	9/29/2022 12:45:01 AM	70340
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/29/2022 12:45:01 AM	70340
1-Methylnaphthalene	76	4.3	5.0		µg/L	1	9/29/2022 12:45:01 AM	70340
2-Methylnaphthalene	87	4.2	5.0		µg/L	1	9/29/2022 12:45:01 AM	70340
2-Methylphenol	11	5.0	10		µg/L	1	9/29/2022 12:45:01 AM	70340
3+4-Methylphenol	5.4	5.1	10	J	µg/L	1	9/29/2022 12:45:01 AM	70340
Naphthalene	160	3.2	5.0		µg/L	1	9/29/2022 12:45:01 AM	70340
Phenol	22	18	20		µg/L	1	9/29/2022 12:45:01 AM	70340
Pyridine	ND	14	40		µg/L	1	9/29/2022 12:45:01 AM	70340
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/29/2022 12:45:01 AM	70340
Surr: 2-Fluorophenol	0	0	15-84.5	S	%Rec	1	9/29/2022 12:45:01 AM	70340
Surr: Phenol-d5	34.8	0	15-67		%Rec	1	9/29/2022 12:45:01 AM	70340
Surr: 2,4,6-Tribromophenol	65.8	0	15-108		%Rec	1	9/29/2022 12:45:01 AM	70340
Surr: Nitrobenzene-d5	54.7	0	16.8-112		%Rec	1	9/29/2022 12:45:01 AM	70340
Surr: 2-Fluorobiphenyl	56.0	0	15-101		%Rec	1	9/29/2022 12:45:01 AM	70340
Surr: 4-Terphenyl-d14	68.1	0	34.4-134		%Rec	1	9/29/2022 12:45:01 AM	70340
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	9/26/2022 12:49:00 PM	70340
Acenaphthene	2.6	0.14	0.30		µg/L	1	9/26/2022 12:49:00 PM	70340
Fluorene	4.7	0.095	0.30		µg/L	1	9/26/2022 12:49:00 PM	70340
Phenanthrene	5.8	0.16	0.30		µg/L	1	9/26/2022 12:49:00 PM	70340
Anthracene	0.66	0.14	0.30		µg/L	1	9/26/2022 12:49:00 PM	70340
Fluoranthene	0.50	0.14	0.30		µg/L	1	9/26/2022 12:49:00 PM	70340
Pyrene	0.58	0.32	1.0	J	µg/L	1	9/26/2022 12:49:00 PM	70340
Benz(a)anthracene	0.20	0.15	0.30	J	µg/L	1	9/26/2022 12:49:00 PM	70340
Chrysene	ND	0.25	0.30		µg/L	1	9/26/2022 12:49:00 PM	70340
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/26/2022 12:49:00 PM	70340
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/26/2022 12:49:00 PM	70340

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58A
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 10:45:00 AM
Lab ID: 2209A41-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	56.8	0	31.6-100		%Rec	1	9/26/2022 12:49:00 PM	70340
Surr: 2-Fluorobiphenyl	43.6	0	26.7-90.1		%Rec	1	9/26/2022 12:49:00 PM	70340
Surr: 4-Terphenyl-d14	49.8	0	72.3-147	S	%Rec	1	9/26/2022 12:49:00 PM	70340

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58A
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 10:45:00 AM
Lab ID: 2209A41-004D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	1.1	0.0079	0.015		mg/L	5	9/23/2022 1:20:24 PM	70359
Beryllium	ND	0.00088	0.0020		mg/L	1	9/23/2022 1:18:26 PM	70359
Cadmium	ND	0.0018	0.0020		mg/L	1	9/23/2022 1:18:26 PM	70359
Chromium	0.0045	0.0020	0.0060	J	mg/L	1	9/23/2022 1:18:26 PM	70359
Cobalt	ND	0.0035	0.0060		mg/L	1	9/23/2022 1:18:26 PM	70359
Nickel	0.037	0.0053	0.010		mg/L	1	9/26/2022 2:01:20 PM	70359
Silver	ND	0.0018	0.0050		mg/L	1	9/23/2022 1:18:26 PM	70359
Vanadium	0.016	0.0035	0.050	J	mg/L	1	9/23/2022 1:18:26 PM	70359
Zinc	0.014	0.0039	0.010		mg/L	1	9/23/2022 1:18:26 PM	70359
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/26/2022 12:29:02 PM	70359
Arsenic	0.0047	0.00013	0.0010		mg/L	1	9/26/2022 12:29:02 PM	70359
Lead	0.012	0.000061	0.00050		mg/L	1	9/26/2022 12:29:02 PM	70359
Selenium	0.00081	0.00037	0.0010	J	mg/L	1	9/26/2022 12:29:02 PM	70359
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/26/2022 1:03:46 PM	70390

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58A
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 10:45:00 AM
Lab ID: 2209A41-004E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.92	0.0011	0.0020		mg/L	1	9/28/2022 2:55:47 PM	B91392
Beryllium	ND	0.00088	0.0020		mg/L	1	9/28/2022 2:55:47 PM	B91392
Cadmium	ND	0.00098	0.0020		mg/L	1	9/28/2022 2:55:47 PM	B91392
Chromium	ND	0.0020	0.0060		mg/L	1	9/28/2022 2:55:47 PM	B91392
Cobalt	ND	0.0024	0.0060		mg/L	1	9/28/2022 2:55:47 PM	B91392
Nickel	0.038	0.0033	0.010		mg/L	1	9/28/2022 2:55:47 PM	B91392
Silver	ND	0.0013	0.0050		mg/L	1	9/29/2022 1:47:41 PM	A91423
Vanadium	0.0059	0.0017	0.050	J	mg/L	1	9/28/2022 2:55:47 PM	B91392
Zinc	0.011	0.0032	0.010		mg/L	1	9/28/2022 2:55:47 PM	B91392
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/22/2022 2:05:32 PM	B91237
Arsenic	0.0036	0.00012	0.0010		mg/L	1	9/22/2022 2:05:32 PM	B91237
Lead	0.0012	0.000057	0.00050		mg/L	1	9/22/2022 2:05:32 PM	B91237
Selenium	0.00042	0.00034	0.0010	J	mg/L	1	9/22/2022 2:05:32 PM	B91237
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/26/2022 1:05:53 PM	70390

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58A
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 10:45:00 AM
Lab ID: 2209A41-004F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PACE**	
Cyanide	ND	0.00500	0.00500		mg/L	1	9/28/2022 7:13:00 PM	R92219

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 11:05:00 AM
Lab ID: 2209A41-005A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	67	0.45	2.5		mg/L	50	9/23/2022 9:22:00 AM	R91291
Surr: BFB	115	0	70-130		%Rec	50	9/23/2022 9:22:00 AM	R91291
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	31000	110	500		µg/L	500	9/22/2022 7:01:00 PM	R91223
Toluene	42	10	50	J	µg/L	50	9/22/2022 7:24:00 PM	R91223
Ethylbenzene	1200	11	50		µg/L	50	9/22/2022 7:24:00 PM	R91223
Methyl tert-butyl ether (MTBE)	1000	20	50		µg/L	50	9/22/2022 7:24:00 PM	R91223
1,2,4-Trimethylbenzene	8.6	6.1	50	J	µg/L	50	9/22/2022 7:24:00 PM	R91223
1,3,5-Trimethylbenzene	ND	9.1	50		µg/L	50	9/22/2022 7:24:00 PM	R91223
1,2-Dichloroethane (EDC)	ND	13	50		µg/L	50	9/22/2022 7:24:00 PM	R91223
Acetone	ND	130	500		µg/L	50	9/22/2022 7:24:00 PM	R91223
Bromomethane	ND	43	150		µg/L	50	9/22/2022 7:24:00 PM	R91223
2-Butanone	ND	100	500		µg/L	50	9/22/2022 7:24:00 PM	R91223
Carbon disulfide	ND	30	500		µg/L	50	9/22/2022 7:24:00 PM	R91223
Chlorobenzene	ND	7.8	50		µg/L	50	9/22/2022 7:24:00 PM	R91223
Chloroform	ND	6.7	50		µg/L	50	9/22/2022 7:24:00 PM	R91223
Chloromethane	ND	21	150		µg/L	50	9/22/2022 7:24:00 PM	R91223
cis-1,2-DCE	ND	19	50		µg/L	50	9/22/2022 7:24:00 PM	R91223
1,1-Dichloroethane	ND	14	50		µg/L	50	9/22/2022 7:24:00 PM	R91223
1,1-Dichloroethene	ND	10	50		µg/L	50	9/22/2022 7:24:00 PM	R91223
Isopropylbenzene	28	9.1	50	J	µg/L	50	9/22/2022 7:24:00 PM	R91223
4-Isopropyltoluene	ND	10	50		µg/L	50	9/22/2022 7:24:00 PM	R91223
Methylene Chloride	ND	25	150		µg/L	50	9/22/2022 7:24:00 PM	R91223
n-Butylbenzene	14	13	150	J	µg/L	50	9/22/2022 7:24:00 PM	R91223
n-Propylbenzene	91	9.1	50		µg/L	50	9/22/2022 7:24:00 PM	R91223
sec-Butylbenzene	ND	7.2	50		µg/L	50	9/22/2022 7:24:00 PM	R91223
Styrene	ND	6.8	50		µg/L	50	9/22/2022 7:24:00 PM	R91223
Tetrachloroethene (PCE)	ND	18	50		µg/L	50	9/22/2022 7:24:00 PM	R91223
1,1,1-Trichloroethane	ND	15	50		µg/L	50	9/22/2022 7:24:00 PM	R91223
Trichloroethene (TCE)	ND	10	50		µg/L	50	9/22/2022 7:24:00 PM	R91223
Vinyl chloride	ND	16	50		µg/L	50	9/22/2022 7:24:00 PM	R91223
Xylenes, Total	130	19	75		µg/L	50	9/22/2022 7:24:00 PM	R91223
Surr: 1,2-Dichloroethane-d4	98.9	0	70-130		%Rec	50	9/22/2022 7:24:00 PM	R91223
Surr: 4-Bromofluorobenzene	94.7	0	70-130		%Rec	50	9/22/2022 7:24:00 PM	R91223
Surr: Dibromofluoromethane	93.8	0	70-130		%Rec	50	9/22/2022 7:24:00 PM	R91223
Surr: Toluene-d8	91.6	0	70-130		%Rec	50	9/22/2022 7:24:00 PM	R91223

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 11:05:00 AM
Lab ID: 2209A41-005B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	9/22/2022 6:16:00 PM	70321

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 11:05:00 AM
Lab ID: 2209A41-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	7.3	0.032	0.13	E	mg/L	2	9/27/2022 12:23:15 PM	70323
Motor Oil Range Organics (MRO)	ND	0.10	0.16	E,D	mg/L	2	9/27/2022 12:23:15 PM	70323
Surr: DNOP	106	0	42.2-138		%Rec	2	9/27/2022 12:23:15 PM	70323
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	9/29/2022 1:27:06 AM	70340
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/29/2022 1:27:06 AM	70340
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	9/29/2022 1:27:06 AM	70340
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/29/2022 1:27:06 AM	70340
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/29/2022 1:27:06 AM	70340
Diethyl phthalate	ND	6.0	10		µg/L	1	9/29/2022 1:27:06 AM	70340
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/29/2022 1:27:06 AM	70340
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	9/29/2022 1:27:06 AM	70340
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/29/2022 1:27:06 AM	70340
1-Methylnaphthalene	69	4.3	5.0		µg/L	1	9/29/2022 1:27:06 AM	70340
2-Methylnaphthalene	79	4.2	5.0		µg/L	1	9/29/2022 1:27:06 AM	70340
2-Methylphenol	ND	5.0	10		µg/L	1	9/29/2022 1:27:06 AM	70340
3+4-Methylphenol	ND	5.1	10		µg/L	1	9/29/2022 1:27:06 AM	70340
Naphthalene	140	3.2	5.0		µg/L	1	9/29/2022 1:27:06 AM	70340
Phenol	74	18	20		µg/L	1	9/29/2022 1:27:06 AM	70340
Pyridine	ND	14	40		µg/L	1	9/29/2022 1:27:06 AM	70340
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/29/2022 1:27:06 AM	70340
Surr: 2-Fluorophenol	49.4	0	15-84.5		%Rec	1	9/29/2022 1:27:06 AM	70340
Surr: Phenol-d5	44.1	0	15-67		%Rec	1	9/29/2022 1:27:06 AM	70340
Surr: 2,4,6-Tribromophenol	62.6	0	15-108		%Rec	1	9/29/2022 1:27:06 AM	70340
Surr: Nitrobenzene-d5	66.6	0	16.8-112		%Rec	1	9/29/2022 1:27:06 AM	70340
Surr: 2-Fluorobiphenyl	60.7	0	15-101		%Rec	1	9/29/2022 1:27:06 AM	70340
Surr: 4-Terphenyl-d14	72.5	0	34.4-134		%Rec	1	9/29/2022 1:27:06 AM	70340
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	1.5	0.11	1.0		µg/L	1	9/26/2022 1:33:00 PM	70340
Acenaphthene	2.5	0.14	0.30		µg/L	1	9/26/2022 1:33:00 PM	70340
Fluorene	3.3	0.095	0.30		µg/L	1	9/26/2022 1:33:00 PM	70340
Phenanthrene	2.9	0.16	0.30		µg/L	1	9/26/2022 1:33:00 PM	70340
Anthracene	0.36	0.14	0.30		µg/L	1	9/26/2022 1:33:00 PM	70340
Fluoranthene	0.20	0.14	0.30	J	µg/L	1	9/26/2022 1:33:00 PM	70340
Pyrene	ND	0.32	1.0		µg/L	1	9/26/2022 1:33:00 PM	70340
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/26/2022 1:33:00 PM	70340
Chrysene	ND	0.25	0.30		µg/L	1	9/26/2022 1:33:00 PM	70340
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/26/2022 1:33:00 PM	70340
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/26/2022 1:33:00 PM	70340

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 11:05:00 AM
Lab ID: 2209A41-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	65.5	0	31.6-100		%Rec	1	9/26/2022 1:33:00 PM	70340
Surr: 2-Fluorobiphenyl	49.0	0	26.7-90.1		%Rec	1	9/26/2022 1:33:00 PM	70340
Surr: 4-Terphenyl-d14	50.4	0	72.3-147	S	%Rec	1	9/26/2022 1:33:00 PM	70340

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 11:05:00 AM
Lab ID: 2209A41-005D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	5.0	0.0079	0.015	*	mg/L	5	9/23/2022 1:26:42 PM	70359
Beryllium	ND	0.00088	0.0020		mg/L	1	9/23/2022 1:24:42 PM	70359
Cadmium	0.0020	0.0018	0.0020		mg/L	1	9/23/2022 1:24:42 PM	70359
Chromium	ND	0.0020	0.0060		mg/L	1	9/23/2022 1:24:42 PM	70359
Cobalt	ND	0.0035	0.0060		mg/L	1	9/23/2022 1:24:42 PM	70359
Nickel	0.050	0.0053	0.010		mg/L	1	9/26/2022 2:02:47 PM	70359
Silver	ND	0.0018	0.0050		mg/L	1	9/23/2022 1:24:42 PM	70359
Vanadium	0.0045	0.0035	0.050	J	mg/L	1	9/23/2022 1:24:42 PM	70359
Zinc	ND	0.0039	0.010		mg/L	1	9/23/2022 1:24:42 PM	70359
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/26/2022 12:31:28 PM	70359
Arsenic	0.0032	0.00013	0.0010		mg/L	1	9/26/2022 12:31:28 PM	70359
Lead	0.00020	0.000061	0.00050	J	mg/L	1	9/26/2022 12:31:28 PM	70359
Selenium	ND	0.00037	0.0010		mg/L	1	9/26/2022 12:31:28 PM	70359
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/26/2022 1:08:00 PM	70390

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 11:05:00 AM
Lab ID: 2209A41-005E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	4.8	0.0056	0.010	*	mg/L	5	9/28/2022 3:16:07 PM	B91392
Beryllium	ND	0.00088	0.0020		mg/L	1	9/28/2022 3:14:07 PM	B91392
Cadmium	ND	0.00098	0.0020		mg/L	1	9/28/2022 3:14:07 PM	B91392
Chromium	ND	0.0020	0.0060		mg/L	1	9/28/2022 3:14:07 PM	B91392
Cobalt	ND	0.0024	0.0060		mg/L	1	9/28/2022 3:14:07 PM	B91392
Nickel	0.046	0.0033	0.010		mg/L	1	9/28/2022 3:14:07 PM	B91392
Silver	0.0013	0.0013	0.0050	J	mg/L	1	9/29/2022 1:49:32 PM	A91423
Vanadium	0.0050	0.0017	0.050	J	mg/L	1	9/28/2022 3:14:07 PM	B91392
Zinc	0.0059	0.0032	0.010	J	mg/L	1	9/28/2022 3:14:07 PM	B91392
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/22/2022 2:13:38 PM	B91237
Arsenic	0.0032	0.00012	0.0010		mg/L	1	9/22/2022 2:13:38 PM	B91237
Lead	ND	0.000057	0.00050		mg/L	1	9/22/2022 2:13:38 PM	B91237
Selenium	0.00044	0.00034	0.0010	J	mg/L	1	9/22/2022 2:13:38 PM	B91237
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00016	0.000091	0.00020	J	mg/L	1	9/26/2022 1:10:08 PM	70390

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 11:05:00 AM
Lab ID: 2209A41-005F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PACE**	
Cyanide	0.00570	0.00500	0.00500		mg/L	1	9/28/2022 7:14:00 PM	R92219

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-64
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 11:30:00 AM
Lab ID: 2209A41-006A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.52	0.0090	0.050		mg/L	1	9/23/2022 9:42:00 AM	R91291
Surr: BFB	278	0	70-130	S	%Rec	1	9/23/2022 9:42:00 AM	R91291
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	45	0.23	1.0		µg/L	1	9/22/2022 8:10:00 PM	R91223
Toluene	0.71	0.20	1.0	J	µg/L	1	9/22/2022 8:10:00 PM	R91223
Ethylbenzene	53	0.21	1.0		µg/L	1	9/22/2022 8:10:00 PM	R91223
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/22/2022 8:10:00 PM	R91223
1,2,4-Trimethylbenzene	57	0.12	1.0		µg/L	1	9/22/2022 8:10:00 PM	R91223
1,3,5-Trimethylbenzene	1.2	0.18	1.0		µg/L	1	9/22/2022 8:10:00 PM	R91223
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/22/2022 8:10:00 PM	R91223
Acetone	9.0	2.5	10	J	µg/L	1	9/22/2022 8:10:00 PM	R91223
Bromomethane	ND	0.85	3.0		µg/L	1	9/22/2022 8:10:00 PM	R91223
2-Butanone	ND	2.0	10		µg/L	1	9/22/2022 8:10:00 PM	R91223
Carbon disulfide	ND	0.59	10		µg/L	1	9/22/2022 8:10:00 PM	R91223
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/22/2022 8:10:00 PM	R91223
Chloroform	ND	0.13	1.0		µg/L	1	9/22/2022 8:10:00 PM	R91223
Chloromethane	ND	0.41	3.0		µg/L	1	9/22/2022 8:10:00 PM	R91223
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/22/2022 8:10:00 PM	R91223
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/22/2022 8:10:00 PM	R91223
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/22/2022 8:10:00 PM	R91223
Isopropylbenzene	11	0.18	1.0		µg/L	1	9/22/2022 8:10:00 PM	R91223
4-Isopropyltoluene	1.0	0.20	1.0		µg/L	1	9/22/2022 8:10:00 PM	R91223
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/22/2022 8:10:00 PM	R91223
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/22/2022 8:10:00 PM	R91223
n-Propylbenzene	4.7	0.18	1.0		µg/L	1	9/22/2022 8:10:00 PM	R91223
sec-Butylbenzene	3.3	0.14	1.0		µg/L	1	9/22/2022 8:10:00 PM	R91223
Styrene	ND	0.14	1.0		µg/L	1	9/22/2022 8:10:00 PM	R91223
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/22/2022 8:10:00 PM	R91223
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/22/2022 8:10:00 PM	R91223
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/22/2022 8:10:00 PM	R91223
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/22/2022 8:10:00 PM	R91223
Xylenes, Total	7.9	0.37	1.5		µg/L	1	9/22/2022 8:10:00 PM	R91223
Surr: 1,2-Dichloroethane-d4	99.2	0	70-130		%Rec	1	9/22/2022 8:10:00 PM	R91223
Surr: 4-Bromofluorobenzene	91.5	0	70-130		%Rec	1	9/22/2022 8:10:00 PM	R91223
Surr: Dibromofluoromethane	99.2	0	70-130		%Rec	1	9/22/2022 8:10:00 PM	R91223
Surr: Toluene-d8	88.8	0	70-130		%Rec	1	9/22/2022 8:10:00 PM	R91223

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-64
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 11:30:00 AM
Lab ID: 2209A41-006B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	9/22/2022 6:31:07 PM	70321

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-64
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 11:30:00 AM
Lab ID: 2209A41-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.57	0.016	0.064	E	mg/L	1	9/26/2022 8:51:20 PM	70323
Motor Oil Range Organics (MRO)	ND	0.052	0.080	E	mg/L	1	9/26/2022 8:51:20 PM	70323
Surr: DNOP	93.1	0	42.2-138		%Rec	1	9/26/2022 8:51:20 PM	70323
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	9/29/2022 11:07:13 AM	70340
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/29/2022 11:07:13 AM	70340
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	9/29/2022 11:07:13 AM	70340
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/29/2022 11:07:13 AM	70340
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/29/2022 11:07:13 AM	70340
Diethyl phthalate	ND	6.0	10		µg/L	1	9/29/2022 11:07:13 AM	70340
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/29/2022 11:07:13 AM	70340
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	9/29/2022 11:07:13 AM	70340
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/29/2022 11:07:13 AM	70340
2-Methylphenol	ND	5.0	10		µg/L	1	9/29/2022 11:07:13 AM	70340
3+4-Methylphenol	ND	5.1	10		µg/L	1	9/29/2022 11:07:13 AM	70340
Phenol	ND	18	20		µg/L	1	9/29/2022 11:07:13 AM	70340
Pyridine	ND	14	40		µg/L	1	9/29/2022 11:07:13 AM	70340
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/29/2022 11:07:13 AM	70340
Surr: 2-Fluorophenol	42.1	0	15-84.5		%Rec	1	9/29/2022 11:07:13 AM	70340
Surr: Phenol-d5	33.4	0	15-67		%Rec	1	9/29/2022 11:07:13 AM	70340
Surr: 2,4,6-Tribromophenol	61.7	0	15-108		%Rec	1	9/29/2022 11:07:13 AM	70340
Surr: Nitrobenzene-d5	57.3	0	16.8-112		%Rec	1	9/29/2022 11:07:13 AM	70340
Surr: 2-Fluorobiphenyl	57.2	0	15-101		%Rec	1	9/29/2022 11:07:13 AM	70340
Surr: 4-Terphenyl-d14	70.6	0	34.4-134		%Rec	1	9/29/2022 11:07:13 AM	70340
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	9/26/2022 2:17:00 PM	70340
Naphthalene	2.7	0.20	0.30		µg/L	1	9/26/2022 2:17:00 PM	70340
1-Methylnaphthalene	1.1	0.15	0.30		µg/L	1	9/26/2022 2:17:00 PM	70340
2-Methylnaphthalene	0.38	0.14	0.30		µg/L	1	9/26/2022 2:17:00 PM	70340
Acenaphthene	0.16	0.14	0.30	J	µg/L	1	9/26/2022 2:17:00 PM	70340
Fluorene	0.32	0.095	0.30		µg/L	1	9/26/2022 2:17:00 PM	70340
Phenanthrene	0.64	0.16	0.30		µg/L	1	9/26/2022 2:17:00 PM	70340
Anthracene	0.24	0.14	0.30	J	µg/L	1	9/26/2022 2:17:00 PM	70340
Fluoranthene	0.48	0.14	0.30		µg/L	1	9/26/2022 2:17:00 PM	70340
Pyrene	0.36	0.32	1.0	J	µg/L	1	9/26/2022 2:17:00 PM	70340
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/26/2022 2:17:00 PM	70340
Chrysene	ND	0.25	0.30		µg/L	1	9/26/2022 2:17:00 PM	70340
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/26/2022 2:17:00 PM	70340
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/26/2022 2:17:00 PM	70340

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-64
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 11:30:00 AM
Lab ID: 2209A41-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	54.4	0	31.6-100		%Rec	1	9/26/2022 2:17:00 PM	70340
Surr: 2-Fluorobiphenyl	46.6	0	26.7-90.1		%Rec	1	9/26/2022 2:17:00 PM	70340
Surr: 4-Terphenyl-d14	50.6	0	72.3-147	S	%Rec	1	9/26/2022 2:17:00 PM	70340

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-64
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 11:30:00 AM
Lab ID: 2209A41-006D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.24	0.0016	0.0030		mg/L	1	9/23/2022 1:30:50 PM	70359
Beryllium	ND	0.00088	0.0020		mg/L	1	9/23/2022 1:30:50 PM	70359
Cadmium	ND	0.0018	0.0020		mg/L	1	9/23/2022 1:30:50 PM	70359
Chromium	ND	0.0020	0.0060		mg/L	1	9/23/2022 1:30:50 PM	70359
Cobalt	ND	0.0035	0.0060		mg/L	1	9/23/2022 1:30:50 PM	70359
Nickel	ND	0.0053	0.010		mg/L	1	9/26/2022 2:09:20 PM	70359
Silver	ND	0.0018	0.0050		mg/L	1	9/23/2022 1:30:50 PM	70359
Vanadium	0.0068	0.0035	0.050	J	mg/L	1	9/23/2022 1:30:50 PM	70359
Zinc	ND	0.0039	0.010		mg/L	1	9/23/2022 1:30:50 PM	70359
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/26/2022 12:33:55 PM	70359
Arsenic	0.0024	0.00013	0.0010		mg/L	1	9/26/2022 12:33:55 PM	70359
Lead	0.00039	0.000061	0.00050	J	mg/L	1	9/26/2022 12:33:55 PM	70359
Selenium	ND	0.00037	0.0010		mg/L	1	9/26/2022 12:33:55 PM	70359
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00016	0.000091	0.00020	J	mg/L	1	9/26/2022 1:12:15 PM	70390

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-64
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 11:30:00 AM
Lab ID: 2209A41-006E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.24	0.0011	0.0020		mg/L	1	9/28/2022 3:27:44 PM	B91392
Beryllium	ND	0.00088	0.0020		mg/L	1	9/28/2022 3:27:44 PM	B91392
Cadmium	ND	0.00098	0.0020		mg/L	1	9/28/2022 3:27:44 PM	B91392
Chromium	ND	0.0020	0.0060		mg/L	1	9/28/2022 3:27:44 PM	B91392
Cobalt	ND	0.0024	0.0060		mg/L	1	9/28/2022 3:27:44 PM	B91392
Nickel	ND	0.0033	0.010		mg/L	1	9/28/2022 3:27:44 PM	B91392
Silver	ND	0.0013	0.0050		mg/L	1	9/29/2022 1:51:27 PM	A91423
Vanadium	0.0074	0.0017	0.050	J	mg/L	1	9/28/2022 3:27:44 PM	B91392
Zinc	0.038	0.0032	0.010		mg/L	1	9/28/2022 3:27:44 PM	B91392
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/22/2022 2:16:20 PM	B91237
Arsenic	0.0026	0.00012	0.0010		mg/L	1	9/22/2022 2:16:20 PM	B91237
Lead	0.000065	0.000057	0.00050	J	mg/L	1	9/22/2022 2:16:20 PM	B91237
Selenium	ND	0.00034	0.0010		mg/L	1	9/22/2022 2:16:20 PM	B91237
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00017	0.000091	0.00020	J	mg/L	1	9/26/2022 1:14:24 PM	70390

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-64
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 11:30:00 AM
Lab ID: 2209A41-006F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PACE**	
Cyanide	ND	0.00500	0.00500		mg/L	1	9/28/2022 7:15:00 PM	R92219

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1-NW
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 11:40:00 AM
Lab ID: 2209A41-007A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	9/23/2022 10:02:00 AM	R91291
Surr: BFB	104	0	70-130		%Rec	1	9/23/2022 10:02:00 AM	R91291
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	9/22/2022 8:33:00 PM	R91223
Toluene	ND	0.20	1.0		µg/L	1	9/22/2022 8:33:00 PM	R91223
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/22/2022 8:33:00 PM	R91223
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/22/2022 8:33:00 PM	R91223
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/22/2022 8:33:00 PM	R91223
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/22/2022 8:33:00 PM	R91223
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/22/2022 8:33:00 PM	R91223
Acetone	7.1	2.5	10	J	µg/L	1	9/22/2022 8:33:00 PM	R91223
Bromomethane	ND	0.85	3.0		µg/L	1	9/22/2022 8:33:00 PM	R91223
2-Butanone	ND	2.0	10		µg/L	1	9/22/2022 8:33:00 PM	R91223
Carbon disulfide	ND	0.59	10		µg/L	1	9/22/2022 8:33:00 PM	R91223
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/22/2022 8:33:00 PM	R91223
Chloroform	ND	0.13	1.0		µg/L	1	9/22/2022 8:33:00 PM	R91223
Chloromethane	ND	0.41	3.0		µg/L	1	9/22/2022 8:33:00 PM	R91223
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/22/2022 8:33:00 PM	R91223
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/22/2022 8:33:00 PM	R91223
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/22/2022 8:33:00 PM	R91223
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/22/2022 8:33:00 PM	R91223
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/22/2022 8:33:00 PM	R91223
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/22/2022 8:33:00 PM	R91223
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/22/2022 8:33:00 PM	R91223
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/22/2022 8:33:00 PM	R91223
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/22/2022 8:33:00 PM	R91223
Styrene	ND	0.14	1.0		µg/L	1	9/22/2022 8:33:00 PM	R91223
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/22/2022 8:33:00 PM	R91223
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/22/2022 8:33:00 PM	R91223
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/22/2022 8:33:00 PM	R91223
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/22/2022 8:33:00 PM	R91223
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/22/2022 8:33:00 PM	R91223
Surr: 1,2-Dichloroethane-d4	103	0	70-130		%Rec	1	9/22/2022 8:33:00 PM	R91223
Surr: 4-Bromofluorobenzene	87.9	0	70-130		%Rec	1	9/22/2022 8:33:00 PM	R91223
Surr: Dibromofluoromethane	103	0	70-130		%Rec	1	9/22/2022 8:33:00 PM	R91223
Surr: Toluene-d8	86.9	0	70-130		%Rec	1	9/22/2022 8:33:00 PM	R91223

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1-NW
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 11:40:00 AM
Lab ID: 2209A41-007B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	9/23/2022 9:54:00 AM	70321

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1-NW
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 11:40:00 AM
Lab ID: 2209A41-007C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.16	0.016	0.064	E	mg/L	1	9/26/2022 9:15:04 PM	70323
Motor Oil Range Organics (MRO)	ND	0.052	0.080	E	mg/L	1	9/26/2022 9:15:04 PM	70323
Surr: DNOP	98.1	0	42.2-138		%Rec	1	9/26/2022 9:15:04 PM	70323
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	9/29/2022 11:48:35 AM	70340
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/29/2022 11:48:35 AM	70340
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	9/29/2022 11:48:35 AM	70340
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/29/2022 11:48:35 AM	70340
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/29/2022 11:48:35 AM	70340
Diethyl phthalate	ND	6.0	10		µg/L	1	9/29/2022 11:48:35 AM	70340
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/29/2022 11:48:35 AM	70340
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	9/29/2022 11:48:35 AM	70340
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/29/2022 11:48:35 AM	70340
2-Methylphenol	ND	5.0	10		µg/L	1	9/29/2022 11:48:35 AM	70340
3+4-Methylphenol	ND	5.1	10		µg/L	1	9/29/2022 11:48:35 AM	70340
Phenol	ND	18	20		µg/L	1	9/29/2022 11:48:35 AM	70340
Pyridine	ND	14	40		µg/L	1	9/29/2022 11:48:35 AM	70340
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/29/2022 11:48:35 AM	70340
Surr: 2-Fluorophenol	45.0	0	15-84.5		%Rec	1	9/29/2022 11:48:35 AM	70340
Surr: Phenol-d5	36.5	0	15-67		%Rec	1	9/29/2022 11:48:35 AM	70340
Surr: 2,4,6-Tribromophenol	52.6	0	15-108		%Rec	1	9/29/2022 11:48:35 AM	70340
Surr: Nitrobenzene-d5	59.5	0	16.8-112		%Rec	1	9/29/2022 11:48:35 AM	70340
Surr: 2-Fluorobiphenyl	57.2	0	15-101		%Rec	1	9/29/2022 11:48:35 AM	70340
Surr: 4-Terphenyl-d14	67.4	0	34.4-134		%Rec	1	9/29/2022 11:48:35 AM	70340
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	9/26/2022 3:01:00 PM	70340
Naphthalene	ND	0.20	0.30		µg/L	1	9/26/2022 3:01:00 PM	70340
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	9/26/2022 3:01:00 PM	70340
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	9/26/2022 3:01:00 PM	70340
Acenaphthene	ND	0.14	0.30		µg/L	1	9/26/2022 3:01:00 PM	70340
Fluorene	ND	0.095	0.30		µg/L	1	9/26/2022 3:01:00 PM	70340
Phenanthrene	ND	0.16	0.30		µg/L	1	9/26/2022 3:01:00 PM	70340
Anthracene	ND	0.14	0.30		µg/L	1	9/26/2022 3:01:00 PM	70340
Fluoranthene	ND	0.14	0.30		µg/L	1	9/26/2022 3:01:00 PM	70340
Pyrene	ND	0.32	1.0		µg/L	1	9/26/2022 3:01:00 PM	70340
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/26/2022 3:01:00 PM	70340
Chrysene	ND	0.25	0.30		µg/L	1	9/26/2022 3:01:00 PM	70340
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/26/2022 3:01:00 PM	70340
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/26/2022 3:01:00 PM	70340

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1-NW
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 11:40:00 AM
Lab ID: 2209A41-007C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	57.2	0	31.6-100		%Rec	1	9/26/2022 3:01:00 PM	70340
Surr: 2-Fluorobiphenyl	50.9	0	26.7-90.1		%Rec	1	9/26/2022 3:01:00 PM	70340
Surr: 4-Terphenyl-d14	54.3	0	72.3-147	S	%Rec	1	9/26/2022 3:01:00 PM	70340

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1-NW
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 11:40:00 AM
Lab ID: 2209A41-007D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.090	0.0016	0.0030		mg/L	1	9/23/2022 1:56:45 PM	70359
Beryllium	ND	0.00088	0.0020		mg/L	1	9/23/2022 1:56:45 PM	70359
Cadmium	0.0024	0.0018	0.0020		mg/L	1	9/23/2022 1:56:45 PM	70359
Chromium	ND	0.0020	0.0060		mg/L	1	9/23/2022 1:56:45 PM	70359
Cobalt	ND	0.0035	0.0060		mg/L	1	9/23/2022 1:56:45 PM	70359
Nickel	ND	0.0053	0.010		mg/L	1	9/26/2022 2:11:02 PM	70359
Silver	ND	0.0018	0.0050		mg/L	1	9/23/2022 1:56:45 PM	70359
Vanadium	0.033	0.0035	0.050	J	mg/L	1	9/23/2022 1:56:45 PM	70359
Zinc	0.011	0.0039	0.010		mg/L	1	9/23/2022 1:56:45 PM	70359
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/26/2022 12:36:21 PM	70359
Arsenic	0.0024	0.00013	0.0010		mg/L	1	9/26/2022 12:36:21 PM	70359
Lead	0.00088	0.000061	0.00050		mg/L	1	9/26/2022 12:36:21 PM	70359
Selenium	0.0050	0.00037	0.0010		mg/L	1	9/26/2022 12:36:21 PM	70359
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00025	0.000091	0.00020		mg/L	1	9/26/2022 1:16:33 PM	70390

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1-NW
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 11:40:00 AM
Lab ID: 2209A41-007E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.065	0.0011	0.0020		mg/L	1	9/28/2022 3:31:45 PM	B91392
Beryllium	ND	0.00088	0.0020		mg/L	1	9/28/2022 3:31:45 PM	B91392
Cadmium	ND	0.00098	0.0020		mg/L	1	9/28/2022 3:31:45 PM	B91392
Chromium	ND	0.0020	0.0060		mg/L	1	9/28/2022 3:31:45 PM	B91392
Cobalt	ND	0.0024	0.0060		mg/L	1	9/28/2022 3:31:45 PM	B91392
Nickel	ND	0.0033	0.010		mg/L	1	9/28/2022 3:31:45 PM	B91392
Silver	0.0020	0.0013	0.0050	J	mg/L	1	9/29/2022 1:53:30 PM	A91423
Vanadium	0.039	0.0017	0.050	J	mg/L	1	9/28/2022 3:31:45 PM	B91392
Zinc	0.011	0.0032	0.010		mg/L	1	9/28/2022 3:31:45 PM	B91392
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/22/2022 2:19:01 PM	B91237
Arsenic	0.0023	0.00012	0.0010		mg/L	1	9/22/2022 2:19:01 PM	B91237
Lead	ND	0.000057	0.00050		mg/L	1	9/22/2022 2:19:01 PM	B91237
Selenium	0.0059	0.00034	0.0010		mg/L	1	9/22/2022 2:19:01 PM	B91237
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00024	0.000091	0.00020		mg/L	1	9/26/2022 1:18:40 PM	70390

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1-NW
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 11:40:00 AM
Lab ID: 2209A41-007F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PACE**	
Cyanide	0.0550	0.00500	0.00500		mg/L	1	9/28/2022 7:16:00 PM	R92219

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-60
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 11:55:00 AM
Lab ID: 2209A41-008A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	9/23/2022 10:21:00 AM	R91291
Surr: BFB	189	0	70-130	S	%Rec	1	9/23/2022 10:21:00 AM	R91291
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	9/22/2022 8:56:00 PM	R91223
Toluene	ND	0.20	1.0		µg/L	1	9/22/2022 8:56:00 PM	R91223
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/22/2022 8:56:00 PM	R91223
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/22/2022 8:56:00 PM	R91223
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/22/2022 8:56:00 PM	R91223
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/22/2022 8:56:00 PM	R91223
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/22/2022 8:56:00 PM	R91223
Acetone	5.0	2.5	10	J	µg/L	1	9/22/2022 8:56:00 PM	R91223
Bromomethane	ND	0.85	3.0		µg/L	1	9/22/2022 8:56:00 PM	R91223
2-Butanone	ND	2.0	10		µg/L	1	9/22/2022 8:56:00 PM	R91223
Carbon disulfide	ND	0.59	10		µg/L	1	9/22/2022 8:56:00 PM	R91223
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/22/2022 8:56:00 PM	R91223
Chloroform	ND	0.13	1.0		µg/L	1	9/22/2022 8:56:00 PM	R91223
Chloromethane	ND	0.41	3.0		µg/L	1	9/22/2022 8:56:00 PM	R91223
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/22/2022 8:56:00 PM	R91223
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/22/2022 8:56:00 PM	R91223
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/22/2022 8:56:00 PM	R91223
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/22/2022 8:56:00 PM	R91223
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/22/2022 8:56:00 PM	R91223
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/22/2022 8:56:00 PM	R91223
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/22/2022 8:56:00 PM	R91223
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/22/2022 8:56:00 PM	R91223
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/22/2022 8:56:00 PM	R91223
Styrene	ND	0.14	1.0		µg/L	1	9/22/2022 8:56:00 PM	R91223
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/22/2022 8:56:00 PM	R91223
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/22/2022 8:56:00 PM	R91223
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/22/2022 8:56:00 PM	R91223
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/22/2022 8:56:00 PM	R91223
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/22/2022 8:56:00 PM	R91223
Surr: 1,2-Dichloroethane-d4	106	0	70-130		%Rec	1	9/22/2022 8:56:00 PM	R91223
Surr: 4-Bromofluorobenzene	99.7	0	70-130		%Rec	1	9/22/2022 8:56:00 PM	R91223
Surr: Dibromofluoromethane	107	0	70-130		%Rec	1	9/22/2022 8:56:00 PM	R91223
Surr: Toluene-d8	87.1	0	70-130		%Rec	1	9/22/2022 8:56:00 PM	R91223

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-60
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 11:55:00 AM
Lab ID: 2209A41-008B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	9/22/2022 7:01:30 PM	70321

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-60
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 11:55:00 AM
Lab ID: 2209A41-008C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.097	0.016	0.064	E	mg/L	1	9/26/2022 9:38:48 PM	70323
Motor Oil Range Organics (MRO)	ND	0.052	0.080	E	mg/L	1	9/26/2022 9:38:48 PM	70323
Surr: DNOP	88.1	0	42.2-138		%Rec	1	9/26/2022 9:38:48 PM	70323
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	9/29/2022 12:29:57 PM	70340
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/29/2022 12:29:57 PM	70340
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	9/29/2022 12:29:57 PM	70340
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/29/2022 12:29:57 PM	70340
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/29/2022 12:29:57 PM	70340
Diethyl phthalate	ND	6.0	10		µg/L	1	9/29/2022 12:29:57 PM	70340
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/29/2022 12:29:57 PM	70340
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	9/29/2022 12:29:57 PM	70340
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/29/2022 12:29:57 PM	70340
2-Methylphenol	ND	5.0	10		µg/L	1	9/29/2022 12:29:57 PM	70340
3+4-Methylphenol	ND	5.1	10		µg/L	1	9/29/2022 12:29:57 PM	70340
Phenol	ND	18	20		µg/L	1	9/29/2022 12:29:57 PM	70340
Pyridine	ND	14	40		µg/L	1	9/29/2022 12:29:57 PM	70340
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/29/2022 12:29:57 PM	70340
Surr: 2-Fluorophenol	52.1	0	15-84.5		%Rec	1	9/29/2022 12:29:57 PM	70340
Surr: Phenol-d5	41.5	0	15-67		%Rec	1	9/29/2022 12:29:57 PM	70340
Surr: 2,4,6-Tribromophenol	59.4	0	15-108		%Rec	1	9/29/2022 12:29:57 PM	70340
Surr: Nitrobenzene-d5	65.9	0	16.8-112		%Rec	1	9/29/2022 12:29:57 PM	70340
Surr: 2-Fluorobiphenyl	64.0	0	15-101		%Rec	1	9/29/2022 12:29:57 PM	70340
Surr: 4-Terphenyl-d14	70.3	0	34.4-134		%Rec	1	9/29/2022 12:29:57 PM	70340
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	0.26	0.11	1.0	J	µg/L	1	9/26/2022 3:45:00 PM	70340
Naphthalene	ND	0.20	0.30		µg/L	1	9/26/2022 3:45:00 PM	70340
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	9/26/2022 3:45:00 PM	70340
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	9/26/2022 3:45:00 PM	70340
Acenaphthene	ND	0.14	0.30		µg/L	1	9/26/2022 3:45:00 PM	70340
Fluorene	ND	0.095	0.30		µg/L	1	9/26/2022 3:45:00 PM	70340
Phenanthrene	ND	0.16	0.30		µg/L	1	9/26/2022 3:45:00 PM	70340
Anthracene	ND	0.14	0.30		µg/L	1	9/26/2022 3:45:00 PM	70340
Fluoranthene	ND	0.14	0.30		µg/L	1	9/26/2022 3:45:00 PM	70340
Pyrene	ND	0.32	1.0		µg/L	1	9/26/2022 3:45:00 PM	70340
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/26/2022 3:45:00 PM	70340
Chrysene	ND	0.25	0.30		µg/L	1	9/26/2022 3:45:00 PM	70340
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/26/2022 3:45:00 PM	70340
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/26/2022 3:45:00 PM	70340

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-60
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 11:55:00 AM
Lab ID: 2209A41-008C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	59.8	0	31.6-100		%Rec	1	9/26/2022 3:45:00 PM	70340
Surr: 2-Fluorobiphenyl	54.6	0	26.7-90.1		%Rec	1	9/26/2022 3:45:00 PM	70340
Surr: 4-Terphenyl-d14	59.3	0	72.3-147	S	%Rec	1	9/26/2022 3:45:00 PM	70340

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-60
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 11:55:00 AM
Lab ID: 2209A41-008D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.34	0.0016	0.0030		mg/L	1	9/23/2022 2:02:48 PM	70359
Beryllium	0.0012	0.00088	0.0020	J	mg/L	1	9/23/2022 2:02:48 PM	70359
Cadmium	0.0020	0.0018	0.0020		mg/L	1	9/23/2022 2:02:48 PM	70359
Chromium	0.026	0.0020	0.0060		mg/L	1	9/23/2022 2:02:48 PM	70359
Cobalt	0.0076	0.0035	0.0060		mg/L	1	9/23/2022 2:02:48 PM	70359
Nickel	0.023	0.0053	0.010		mg/L	1	9/26/2022 2:12:45 PM	70359
Silver	ND	0.0018	0.0050		mg/L	1	9/23/2022 2:02:48 PM	70359
Vanadium	0.042	0.0035	0.050	J	mg/L	1	9/23/2022 2:02:48 PM	70359
Zinc	0.018	0.0039	0.010		mg/L	1	9/23/2022 2:02:48 PM	70359
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/26/2022 12:38:48 PM	70359
Arsenic	0.0029	0.00013	0.0010		mg/L	1	9/26/2022 12:38:48 PM	70359
Lead	0.0069	0.000061	0.00050		mg/L	1	9/26/2022 12:38:48 PM	70359
Selenium	0.018	0.00037	0.0010		mg/L	1	9/26/2022 12:38:48 PM	70359
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00048	0.000091	0.00020		mg/L	1	9/26/2022 1:20:46 PM	70390

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-60
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 11:55:00 AM
Lab ID: 2209A41-008E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.027	0.0011	0.0020		mg/L	1	9/28/2022 3:35:56 PM	B91392
Beryllium	ND	0.00088	0.0020		mg/L	1	9/28/2022 3:35:56 PM	B91392
Cadmium	ND	0.00098	0.0020		mg/L	1	9/28/2022 3:35:56 PM	B91392
Chromium	0.0046	0.0020	0.0060	J	mg/L	1	9/28/2022 3:35:56 PM	B91392
Cobalt	ND	0.0024	0.0060		mg/L	1	9/28/2022 3:35:56 PM	B91392
Nickel	0.0038	0.0033	0.010	J	mg/L	1	9/28/2022 3:35:56 PM	B91392
Silver	0.0021	0.0013	0.0050	J	mg/L	1	9/29/2022 1:55:28 PM	A91423
Vanadium	0.013	0.0017	0.050	J	mg/L	1	9/28/2022 3:35:56 PM	B91392
Zinc	0.011	0.0032	0.010		mg/L	1	9/28/2022 3:35:56 PM	B91392
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/22/2022 2:21:42 PM	B91237
Arsenic	0.0014	0.00012	0.0010		mg/L	1	9/22/2022 2:21:42 PM	B91237
Lead	ND	0.000057	0.00050		mg/L	1	9/22/2022 2:21:42 PM	B91237
Selenium	0.016	0.00034	0.0010		mg/L	1	9/22/2022 2:21:42 PM	B91237
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00024	0.000091	0.00020		mg/L	1	9/26/2022 1:22:53 PM	70390

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-60
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 11:55:00 AM
Lab ID: 2209A41-008F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PACE**	
Cyanide	0.00639	0.00500	0.00500		mg/L	1	9/28/2022 7:17:00 PM	R92219

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-68
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 12:10:00 PM
Lab ID: 2209A41-009A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.84	0.0090	0.050		mg/L	1	9/23/2022 10:41:00 AM	R91291
Surr: BFB	3180	0	70-130	S	%Rec	1	9/23/2022 10:41:00 AM	R91291
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	7.7	0.23	1.0		µg/L	1	9/22/2022 9:19:00 PM	R91223
Toluene	0.80	0.20	1.0	J	µg/L	1	9/22/2022 9:19:00 PM	R91223
Ethylbenzene	4.7	0.21	1.0		µg/L	1	9/22/2022 9:19:00 PM	R91223
Methyl tert-butyl ether (MTBE)	0.60	0.39	1.0	J	µg/L	1	9/22/2022 9:19:00 PM	R91223
1,2,4-Trimethylbenzene	1.9	0.12	1.0		µg/L	1	9/22/2022 9:19:00 PM	R91223
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/22/2022 9:19:00 PM	R91223
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/22/2022 9:19:00 PM	R91223
Acetone	7.2	2.5	10	J	µg/L	1	9/22/2022 9:19:00 PM	R91223
Bromomethane	ND	0.85	3.0		µg/L	1	9/22/2022 9:19:00 PM	R91223
2-Butanone	ND	2.0	10		µg/L	1	9/22/2022 9:19:00 PM	R91223
Carbon disulfide	ND	0.59	10		µg/L	1	9/22/2022 9:19:00 PM	R91223
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/22/2022 9:19:00 PM	R91223
Chloroform	ND	0.13	1.0		µg/L	1	9/22/2022 9:19:00 PM	R91223
Chloromethane	ND	0.41	3.0		µg/L	1	9/22/2022 9:19:00 PM	R91223
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/22/2022 9:19:00 PM	R91223
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/22/2022 9:19:00 PM	R91223
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/22/2022 9:19:00 PM	R91223
Isopropylbenzene	1.2	0.18	1.0		µg/L	1	9/22/2022 9:19:00 PM	R91223
4-Isopropyltoluene	0.24	0.20	1.0	J	µg/L	1	9/22/2022 9:19:00 PM	R91223
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/22/2022 9:19:00 PM	R91223
n-Butylbenzene	0.66	0.25	3.0	J	µg/L	1	9/22/2022 9:19:00 PM	R91223
n-Propylbenzene	2.2	0.18	1.0		µg/L	1	9/22/2022 9:19:00 PM	R91223
sec-Butylbenzene	0.60	0.14	1.0	J	µg/L	1	9/22/2022 9:19:00 PM	R91223
Styrene	ND	0.14	1.0		µg/L	1	9/22/2022 9:19:00 PM	R91223
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/22/2022 9:19:00 PM	R91223
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/22/2022 9:19:00 PM	R91223
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/22/2022 9:19:00 PM	R91223
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/22/2022 9:19:00 PM	R91223
Xylenes, Total	3.7	0.37	1.5		µg/L	1	9/22/2022 9:19:00 PM	R91223
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%Rec	1	9/22/2022 9:19:00 PM	R91223
Surr: 4-Bromofluorobenzene	92.6	0	70-130		%Rec	1	9/22/2022 9:19:00 PM	R91223
Surr: Dibromofluoromethane	101	0	70-130		%Rec	1	9/22/2022 9:19:00 PM	R91223
Surr: Toluene-d8	89.4	0	70-130		%Rec	1	9/22/2022 9:19:00 PM	R91223

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-68
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 12:10:00 PM
Lab ID: 2209A41-009B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	9/22/2022 7:16:42 PM	70321

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-68
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 12:10:00 PM
Lab ID: 2209A41-009C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	1.5	0.016	0.064	E	mg/L	1	9/27/2022 1:58:07 PM	70376
Motor Oil Range Organics (MRO)	0.076	0.052	0.080	JE	mg/L	1	9/27/2022 1:58:07 PM	70376
Surr: DNOP	95.7	0	42.2-138		%Rec	1	9/27/2022 1:58:07 PM	70376
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	9/29/2022 1:11:41 PM	70340
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/29/2022 1:11:41 PM	70340
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	9/29/2022 1:11:41 PM	70340
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/29/2022 1:11:41 PM	70340
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/29/2022 1:11:41 PM	70340
Diethyl phthalate	ND	6.0	10		µg/L	1	9/29/2022 1:11:41 PM	70340
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/29/2022 1:11:41 PM	70340
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	9/29/2022 1:11:41 PM	70340
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/29/2022 1:11:41 PM	70340
2-Methylphenol	ND	5.0	10		µg/L	1	9/29/2022 1:11:41 PM	70340
3+4-Methylphenol	ND	5.1	10		µg/L	1	9/29/2022 1:11:41 PM	70340
Phenol	ND	18	20		µg/L	1	9/29/2022 1:11:41 PM	70340
Pyridine	ND	14	40		µg/L	1	9/29/2022 1:11:41 PM	70340
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/29/2022 1:11:41 PM	70340
Surr: 2-Fluorophenol	2.59	0	15-84.5	S	%Rec	1	9/29/2022 1:11:41 PM	70340
Surr: Phenol-d5	10.2	0	15-67	S	%Rec	1	9/29/2022 1:11:41 PM	70340
Surr: 2,4,6-Tribromophenol	2.97	0	15-108	S	%Rec	1	9/29/2022 1:11:41 PM	70340
Surr: Nitrobenzene-d5	60.3	0	16.8-112		%Rec	1	9/29/2022 1:11:41 PM	70340
Surr: 2-Fluorobiphenyl	61.3	0	15-101		%Rec	1	9/29/2022 1:11:41 PM	70340
Surr: 4-Terphenyl-d14	72.6	0	34.4-134		%Rec	1	9/29/2022 1:11:41 PM	70340
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	5.4	0.11	1.0		µg/L	1	9/26/2022 4:29:00 PM	70340
Naphthalene	ND	0.20	0.30		µg/L	1	9/26/2022 4:29:00 PM	70340
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	9/26/2022 4:29:00 PM	70340
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	9/26/2022 4:29:00 PM	70340
Acenaphthene	0.60	0.14	0.30		µg/L	1	9/26/2022 4:29:00 PM	70340
Fluorene	0.18	0.095	0.30	J	µg/L	1	9/26/2022 4:29:00 PM	70340
Phenanthrene	ND	0.16	0.30		µg/L	1	9/26/2022 4:29:00 PM	70340
Anthracene	ND	0.14	0.30		µg/L	1	9/26/2022 4:29:00 PM	70340
Fluoranthene	ND	0.14	0.30		µg/L	1	9/26/2022 4:29:00 PM	70340
Pyrene	ND	0.32	1.0		µg/L	1	9/26/2022 4:29:00 PM	70340
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/26/2022 4:29:00 PM	70340
Chrysene	ND	0.25	0.30		µg/L	1	9/26/2022 4:29:00 PM	70340
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/26/2022 4:29:00 PM	70340
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/26/2022 4:29:00 PM	70340

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-68
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 12:10:00 PM
Lab ID: 2209A41-009C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	58.5	0	31.6-100		%Rec	1	9/26/2022 4:29:00 PM	70340
Surr: 2-Fluorobiphenyl	51.2	0	26.7-90.1		%Rec	1	9/26/2022 4:29:00 PM	70340
Surr: 4-Terphenyl-d14	54.8	0	72.3-147	S	%Rec	1	9/26/2022 4:29:00 PM	70340

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-68
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 12:10:00 PM
Lab ID: 2209A41-009D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.26	0.0016	0.0030		mg/L	1	9/23/2022 2:08:39 PM	70359
Beryllium	0.0011	0.00088	0.0020	J	mg/L	1	9/23/2022 2:08:39 PM	70359
Cadmium	0.0043	0.0018	0.0020		mg/L	1	9/23/2022 2:08:39 PM	70359
Chromium	0.0092	0.0020	0.0060		mg/L	1	9/23/2022 2:08:39 PM	70359
Cobalt	0.061	0.0035	0.0060		mg/L	1	9/23/2022 2:08:39 PM	70359
Nickel	0.17	0.0053	0.010	*	mg/L	1	9/26/2022 2:14:12 PM	70359
Silver	0.0059	0.0018	0.0050		mg/L	1	9/23/2022 2:08:39 PM	70359
Vanadium	0.031	0.0035	0.050	J	mg/L	1	9/23/2022 2:08:39 PM	70359
Zinc	0.013	0.0039	0.010		mg/L	1	9/23/2022 2:08:39 PM	70359
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/26/2022 12:41:14 PM	70359
Arsenic	0.018	0.00013	0.0010	*	mg/L	1	9/26/2022 12:41:14 PM	70359
Lead	0.020	0.00031	0.0025	*	mg/L	5	9/26/2022 1:33:54 PM	70359
Selenium	0.0080	0.00037	0.0010		mg/L	1	9/26/2022 12:41:14 PM	70359
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00025	0.000091	0.00020		mg/L	1	9/26/2022 1:29:13 PM	70390

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-68
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 12:10:00 PM
Lab ID: 2209A41-009E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.050	0.0011	0.0020		mg/L	1	9/28/2022 3:48:06 PM	B91392
Beryllium	ND	0.00088	0.0020		mg/L	1	9/28/2022 3:48:06 PM	B91392
Cadmium	ND	0.00098	0.0020		mg/L	1	9/28/2022 3:48:06 PM	B91392
Chromium	ND	0.0020	0.0060		mg/L	1	9/28/2022 3:48:06 PM	B91392
Cobalt	0.061	0.0024	0.0060		mg/L	1	9/28/2022 3:48:06 PM	B91392
Nickel	0.16	0.0033	0.010	*	mg/L	1	9/28/2022 3:48:06 PM	B91392
Silver	0.0087	0.0013	0.0050		mg/L	1	9/29/2022 1:57:44 PM	A91423
Vanadium	0.016	0.0017	0.050	J	mg/L	1	9/28/2022 3:48:06 PM	B91392
Zinc	0.036	0.0032	0.010		mg/L	1	9/28/2022 3:48:06 PM	B91392
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/22/2022 2:24:23 PM	B91237
Arsenic	0.016	0.00012	0.0010	*	mg/L	1	9/22/2022 2:24:23 PM	B91237
Lead	0.013	0.000057	0.00050		mg/L	1	9/22/2022 2:24:23 PM	B91237
Selenium	0.0053	0.00034	0.0010		mg/L	1	9/22/2022 2:24:23 PM	B91237
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00027	0.000091	0.00020		mg/L	1	9/26/2022 1:31:21 PM	70390

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-68
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 12:10:00 PM
Lab ID: 2209A41-009F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PACE**	
Cyanide	0.0115	0.00500	0.00500		mg/L	1	9/28/2022 7:18:00 PM	R92219

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-67
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 12:20:00 PM
Lab ID: 2209A41-010A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.12	0.0090	0.050		mg/L	1	9/23/2022 11:00:00 AM	R91291
Surr: BFB	1060	0	70-130	S	%Rec	1	9/23/2022 11:00:00 AM	R91291
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	9/22/2022 9:42:00 PM	R91223
Toluene	ND	0.20	1.0		µg/L	1	9/22/2022 9:42:00 PM	R91223
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/22/2022 9:42:00 PM	R91223
Methyl tert-butyl ether (MTBE)	33	0.39	1.0		µg/L	1	9/22/2022 9:42:00 PM	R91223
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/22/2022 9:42:00 PM	R91223
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/22/2022 9:42:00 PM	R91223
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/22/2022 9:42:00 PM	R91223
Acetone	ND	2.5	10		µg/L	1	9/22/2022 9:42:00 PM	R91223
Bromomethane	ND	0.85	3.0		µg/L	1	9/22/2022 9:42:00 PM	R91223
2-Butanone	ND	2.0	10		µg/L	1	9/22/2022 9:42:00 PM	R91223
Carbon disulfide	ND	0.59	10		µg/L	1	9/22/2022 9:42:00 PM	R91223
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/22/2022 9:42:00 PM	R91223
Chloroform	ND	0.13	1.0		µg/L	1	9/22/2022 9:42:00 PM	R91223
Chloromethane	ND	0.41	3.0		µg/L	1	9/22/2022 9:42:00 PM	R91223
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/22/2022 9:42:00 PM	R91223
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/22/2022 9:42:00 PM	R91223
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/22/2022 9:42:00 PM	R91223
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/22/2022 9:42:00 PM	R91223
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/22/2022 9:42:00 PM	R91223
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/22/2022 9:42:00 PM	R91223
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/22/2022 9:42:00 PM	R91223
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/22/2022 9:42:00 PM	R91223
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/22/2022 9:42:00 PM	R91223
Styrene	ND	0.14	1.0		µg/L	1	9/22/2022 9:42:00 PM	R91223
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/22/2022 9:42:00 PM	R91223
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/22/2022 9:42:00 PM	R91223
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/22/2022 9:42:00 PM	R91223
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/22/2022 9:42:00 PM	R91223
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/22/2022 9:42:00 PM	R91223
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%Rec	1	9/22/2022 9:42:00 PM	R91223
Surr: 4-Bromofluorobenzene	97.2	0	70-130		%Rec	1	9/22/2022 9:42:00 PM	R91223
Surr: Dibromofluoromethane	102	0	70-130		%Rec	1	9/22/2022 9:42:00 PM	R91223
Surr: Toluene-d8	85.6	0	70-130		%Rec	1	9/22/2022 9:42:00 PM	R91223

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-67
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 12:20:00 PM
Lab ID: 2209A41-010B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	9/22/2022 7:31:50 PM	70321

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-67
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 12:20:00 PM
Lab ID: 2209A41-010C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.73	0.016	0.064	E	mg/L	1	9/27/2022 2:21:57 PM	70376
Motor Oil Range Organics (MRO)	ND	0.052	0.080	E	mg/L	1	9/27/2022 2:21:57 PM	70376
Surr: DNOP	104	0	42.2-138		%Rec	1	9/27/2022 2:21:57 PM	70376
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	9/29/2022 1:53:17 PM	70340
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/29/2022 1:53:17 PM	70340
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	9/29/2022 1:53:17 PM	70340
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/29/2022 1:53:17 PM	70340
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/29/2022 1:53:17 PM	70340
Diethyl phthalate	ND	6.0	10		µg/L	1	9/29/2022 1:53:17 PM	70340
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/29/2022 1:53:17 PM	70340
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	9/29/2022 1:53:17 PM	70340
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/29/2022 1:53:17 PM	70340
2-Methylphenol	ND	5.0	10		µg/L	1	9/29/2022 1:53:17 PM	70340
3+4-Methylphenol	ND	5.1	10		µg/L	1	9/29/2022 1:53:17 PM	70340
Phenol	ND	18	20		µg/L	1	9/29/2022 1:53:17 PM	70340
Pyridine	ND	14	40		µg/L	1	9/29/2022 1:53:17 PM	70340
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/29/2022 1:53:17 PM	70340
Surr: 2-Fluorophenol	0.299	0	15-84.5	S	%Rec	1	9/29/2022 1:53:17 PM	70340
Surr: Phenol-d5	0.653	0	15-67	S	%Rec	1	9/29/2022 1:53:17 PM	70340
Surr: 2,4,6-Tribromophenol	0	0	15-108	S	%Rec	1	9/29/2022 1:53:17 PM	70340
Surr: Nitrobenzene-d5	65.5	0	16.8-112		%Rec	1	9/29/2022 1:53:17 PM	70340
Surr: 2-Fluorobiphenyl	65.9	0	15-101		%Rec	1	9/29/2022 1:53:17 PM	70340
Surr: 4-Terphenyl-d14	76.7	0	34.4-134		%Rec	1	9/29/2022 1:53:17 PM	70340
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	4.7	0.11	1.0		µg/L	1	9/26/2022 5:13:00 PM	70340
Naphthalene	ND	0.20	0.30		µg/L	1	9/26/2022 5:13:00 PM	70340
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	9/26/2022 5:13:00 PM	70340
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	9/26/2022 5:13:00 PM	70340
Acenaphthene	ND	0.14	0.30		µg/L	1	9/26/2022 5:13:00 PM	70340
Fluorene	ND	0.095	0.30		µg/L	1	9/26/2022 5:13:00 PM	70340
Phenanthrene	ND	0.16	0.30		µg/L	1	9/26/2022 5:13:00 PM	70340
Anthracene	ND	0.14	0.30		µg/L	1	9/26/2022 5:13:00 PM	70340
Fluoranthene	ND	0.14	0.30		µg/L	1	9/26/2022 5:13:00 PM	70340
Pyrene	ND	0.32	1.0		µg/L	1	9/26/2022 5:13:00 PM	70340
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/26/2022 5:13:00 PM	70340
Chrysene	ND	0.25	0.30		µg/L	1	9/26/2022 5:13:00 PM	70340
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/26/2022 5:13:00 PM	70340
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/26/2022 5:13:00 PM	70340

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-67
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 12:20:00 PM
Lab ID: 2209A41-010C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	62.0	0	31.6-100		%Rec	1	9/26/2022 5:13:00 PM	70340
Surr: 2-Fluorobiphenyl	54.7	0	26.7-90.1		%Rec	1	9/26/2022 5:13:00 PM	70340
Surr: 4-Terphenyl-d14	57.6	0	72.3-147	S	%Rec	1	9/26/2022 5:13:00 PM	70340

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-67
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 12:20:00 PM
Lab ID: 2209A41-010D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.28	0.0016	0.0030		mg/L	1	9/23/2022 3:47:00 PM	70359
Beryllium	0.0014	0.00088	0.0020	J	mg/L	1	9/23/2022 3:47:00 PM	70359
Cadmium	0.0042	0.0018	0.0020		mg/L	1	9/23/2022 3:47:00 PM	70359
Chromium	0.012	0.0020	0.0060		mg/L	1	9/23/2022 3:47:00 PM	70359
Cobalt	ND	0.0035	0.0060		mg/L	1	9/23/2022 3:47:00 PM	70359
Nickel	0.13	0.0053	0.010	*	mg/L	1	9/26/2022 2:15:38 PM	70359
Silver	0.015	0.0018	0.0050		mg/L	1	9/23/2022 3:47:00 PM	70359
Vanadium	0.030	0.0035	0.050	J	mg/L	1	9/23/2022 3:47:00 PM	70359
Zinc	0.011	0.0039	0.010		mg/L	1	9/23/2022 3:47:00 PM	70359
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	9/26/2022 1:36:20 PM	70359
Arsenic	0.0040	0.00013	0.0010		mg/L	1	9/26/2022 12:43:41 PM	70359
Lead	0.0080	0.00031	0.0025		mg/L	5	9/26/2022 1:36:20 PM	70359
Selenium	0.0016	0.00037	0.0010		mg/L	1	9/26/2022 12:43:41 PM	70359
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00045	0.0010		mg/L	5	9/26/2022 2:46:16 PM	70390

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-67
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 12:20:00 PM
Lab ID: 2209A41-010E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.051	0.0011	0.0020		mg/L	1	9/28/2022 3:52:11 PM	B91392
Beryllium	ND	0.00088	0.0020		mg/L	1	9/28/2022 3:52:11 PM	B91392
Cadmium	ND	0.00098	0.0020		mg/L	1	9/28/2022 3:52:11 PM	B91392
Chromium	ND	0.0020	0.0060		mg/L	1	9/28/2022 3:52:11 PM	B91392
Cobalt	ND	0.0024	0.0060		mg/L	1	9/28/2022 3:52:11 PM	B91392
Nickel	0.12	0.0033	0.010	*	mg/L	1	9/28/2022 3:52:11 PM	B91392
Silver	0.020	0.0013	0.0050		mg/L	1	9/29/2022 1:59:51 PM	A91423
Vanadium	0.0068	0.0017	0.050	J	mg/L	1	9/28/2022 3:52:11 PM	B91392
Zinc	0.035	0.0032	0.010		mg/L	1	9/28/2022 3:52:11 PM	B91392
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/22/2022 2:27:04 PM	B91237
Arsenic	0.0027	0.00012	0.0010		mg/L	1	9/22/2022 2:27:04 PM	B91237
Lead	ND	0.00028	0.0025		mg/L	5	9/22/2022 2:59:23 PM	B91237
Selenium	0.00095	0.00034	0.0010	J	mg/L	1	9/22/2022 2:27:04 PM	B91237
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/26/2022 1:39:54 PM	70390

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-67
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 12:20:00 PM
Lab ID: 2209A41-010F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PACE**	
Cyanide	0.0373	0.00500	0.00500		mg/L	1	9/28/2022 7:19:00 PM	R92219

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB 9-20-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022 12:20:00 PM
Lab ID: 2209A41-011A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	9/22/2022 10:05:00 PM	R91223
Toluene	ND	0.20	1.0		µg/L	1	9/22/2022 10:05:00 PM	R91223
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/22/2022 10:05:00 PM	R91223
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/22/2022 10:05:00 PM	R91223
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/22/2022 10:05:00 PM	R91223
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/22/2022 10:05:00 PM	R91223
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/22/2022 10:05:00 PM	R91223
Acetone	11	2.5	10		µg/L	1	9/22/2022 10:05:00 PM	R91223
Bromomethane	ND	0.85	3.0		µg/L	1	9/22/2022 10:05:00 PM	R91223
2-Butanone	ND	2.0	10		µg/L	1	9/22/2022 10:05:00 PM	R91223
Carbon disulfide	ND	0.59	10		µg/L	1	9/22/2022 10:05:00 PM	R91223
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/22/2022 10:05:00 PM	R91223
Chloroform	ND	0.13	1.0		µg/L	1	9/22/2022 10:05:00 PM	R91223
Chloromethane	ND	0.41	3.0		µg/L	1	9/22/2022 10:05:00 PM	R91223
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/22/2022 10:05:00 PM	R91223
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/22/2022 10:05:00 PM	R91223
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/22/2022 10:05:00 PM	R91223
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/22/2022 10:05:00 PM	R91223
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/22/2022 10:05:00 PM	R91223
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/22/2022 10:05:00 PM	R91223
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/22/2022 10:05:00 PM	R91223
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/22/2022 10:05:00 PM	R91223
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/22/2022 10:05:00 PM	R91223
Styrene	ND	0.14	1.0		µg/L	1	9/22/2022 10:05:00 PM	R91223
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/22/2022 10:05:00 PM	R91223
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/22/2022 10:05:00 PM	R91223
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/22/2022 10:05:00 PM	R91223
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/22/2022 10:05:00 PM	R91223
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/22/2022 10:05:00 PM	R91223
Surr: 1,2-Dichloroethane-d4	105	0	70-130		%Rec	1	9/22/2022 10:05:00 PM	R91223
Surr: 4-Bromofluorobenzene	89.8	0	70-130		%Rec	1	9/22/2022 10:05:00 PM	R91223
Surr: Dibromofluoromethane	104	0	70-130		%Rec	1	9/22/2022 10:05:00 PM	R91223
Surr: Toluene-d8	86.4	0	70-130		%Rec	1	9/22/2022 10:05:00 PM	R91223

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 9-20-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022
Lab ID: 2209A41-012A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	46	0.45	2.5		mg/L	50	9/26/2022 3:16:00 PM	A91300
Surr: BFB	125	0	70-130		%Rec	50	9/26/2022 3:16:00 PM	A91300
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	8700	110	500		µg/L	500	9/22/2022 10:28:00 PM	R91223
Toluene	4600	10	50		µg/L	50	9/22/2022 10:51:00 PM	R91223
Ethylbenzene	840	11	50		µg/L	50	9/22/2022 10:51:00 PM	R91223
Methyl tert-butyl ether (MTBE)	2200	20	50		µg/L	50	9/22/2022 10:51:00 PM	R91223
1,2,4-Trimethylbenzene	520	6.1	50		µg/L	50	9/22/2022 10:51:00 PM	R91223
1,3,5-Trimethylbenzene	140	9.1	50		µg/L	50	9/22/2022 10:51:00 PM	R91223
1,2-Dichloroethane (EDC)	ND	13	50		µg/L	50	9/22/2022 10:51:00 PM	R91223
Acetone	ND	130	500		µg/L	50	9/22/2022 10:51:00 PM	R91223
Bromomethane	ND	43	150		µg/L	50	9/22/2022 10:51:00 PM	R91223
2-Butanone	ND	100	500		µg/L	50	9/22/2022 10:51:00 PM	R91223
Carbon disulfide	ND	30	500		µg/L	50	9/22/2022 10:51:00 PM	R91223
Chlorobenzene	ND	7.8	50		µg/L	50	9/22/2022 10:51:00 PM	R91223
Chloroform	ND	6.7	50		µg/L	50	9/22/2022 10:51:00 PM	R91223
Chloromethane	ND	21	150		µg/L	50	9/22/2022 10:51:00 PM	R91223
cis-1,2-DCE	ND	19	50		µg/L	50	9/22/2022 10:51:00 PM	R91223
1,1-Dichloroethane	ND	14	50		µg/L	50	9/22/2022 10:51:00 PM	R91223
1,1-Dichloroethene	ND	10	50		µg/L	50	9/22/2022 10:51:00 PM	R91223
Isopropylbenzene	58	9.1	50		µg/L	50	9/22/2022 10:51:00 PM	R91223
4-Isopropyltoluene	12	10	50	J	µg/L	50	9/22/2022 10:51:00 PM	R91223
Methylene Chloride	ND	25	150		µg/L	50	9/22/2022 10:51:00 PM	R91223
n-Butylbenzene	19	13	150	J	µg/L	50	9/22/2022 10:51:00 PM	R91223
n-Propylbenzene	110	9.1	50		µg/L	50	9/22/2022 10:51:00 PM	R91223
sec-Butylbenzene	14	7.2	50	J	µg/L	50	9/22/2022 10:51:00 PM	R91223
Styrene	ND	6.8	50		µg/L	50	9/22/2022 10:51:00 PM	R91223
Tetrachloroethene (PCE)	ND	18	50		µg/L	50	9/22/2022 10:51:00 PM	R91223
1,1,1-Trichloroethane	ND	15	50		µg/L	50	9/22/2022 10:51:00 PM	R91223
Trichloroethene (TCE)	ND	10	50		µg/L	50	9/22/2022 10:51:00 PM	R91223
Vinyl chloride	ND	16	50		µg/L	50	9/22/2022 10:51:00 PM	R91223
Xylenes, Total	3100	19	75		µg/L	50	9/22/2022 10:51:00 PM	R91223
Surr: 1,2-Dichloroethane-d4	94.5	0	70-130		%Rec	50	9/22/2022 10:51:00 PM	R91223
Surr: 4-Bromofluorobenzene	92.2	0	70-130		%Rec	50	9/22/2022 10:51:00 PM	R91223
Surr: Dibromofluoromethane	93.2	0	70-130		%Rec	50	9/22/2022 10:51:00 PM	R91223
Surr: Toluene-d8	93.0	0	70-130		%Rec	50	9/22/2022 10:51:00 PM	R91223

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 9-20-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022
Lab ID: 2209A41-012B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	9/22/2022 8:02:18 PM	70321

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 9-20-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022
Lab ID: 2209A41-012C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	4.4	0.16	0.64	E	mg/L	10	9/28/2022 11:00:37 AM	70376
Motor Oil Range Organics (MRO)	ND	0.52	0.80	E,D	mg/L	10	9/28/2022 11:00:37 AM	70376
Surr: DNOP	0	0	42.2-138	S	%Rec	10	9/28/2022 11:00:37 AM	70376
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	9/29/2022 2:34:44 PM	70340
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/29/2022 2:34:44 PM	70340
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	9/29/2022 2:34:44 PM	70340
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/29/2022 2:34:44 PM	70340
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/29/2022 2:34:44 PM	70340
Diethyl phthalate	ND	6.0	10		µg/L	1	9/29/2022 2:34:44 PM	70340
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/29/2022 2:34:44 PM	70340
2,4-Dimethylphenol	7.7	5.8	10	J	µg/L	1	9/29/2022 2:34:44 PM	70340
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/29/2022 2:34:44 PM	70340
1-Methylnaphthalene	64	4.3	5.0		µg/L	1	9/29/2022 2:34:44 PM	70340
2-Methylnaphthalene	71	4.2	5.0		µg/L	1	9/29/2022 2:34:44 PM	70340
2-Methylphenol	8.5	5.0	10	J	µg/L	1	9/29/2022 2:34:44 PM	70340
3+4-Methylphenol	ND	5.1	10		µg/L	1	9/29/2022 2:34:44 PM	70340
Naphthalene	130	3.2	5.0		µg/L	1	9/29/2022 2:34:44 PM	70340
Phenol	ND	18	20		µg/L	1	9/29/2022 2:34:44 PM	70340
Pyridine	ND	14	40		µg/L	1	9/29/2022 2:34:44 PM	70340
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/29/2022 2:34:44 PM	70340
Surr: 2-Fluorophenol	38.2	0	15-84.5		%Rec	1	9/29/2022 2:34:44 PM	70340
Surr: Phenol-d5	31.3	0	15-67		%Rec	1	9/29/2022 2:34:44 PM	70340
Surr: 2,4,6-Tribromophenol	60.0	0	15-108		%Rec	1	9/29/2022 2:34:44 PM	70340
Surr: Nitrobenzene-d5	48.8	0	16.8-112		%Rec	1	9/29/2022 2:34:44 PM	70340
Surr: 2-Fluorobiphenyl	48.9	0	15-101		%Rec	1	9/29/2022 2:34:44 PM	70340
Surr: 4-Terphenyl-d14	69.4	0	34.4-134		%Rec	1	9/29/2022 2:34:44 PM	70340
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	9/26/2022 5:58:00 PM	70340
Acenaphthene	2.3	0.14	0.30		µg/L	1	9/26/2022 5:58:00 PM	70340
Fluorene	3.9	0.095	0.30		µg/L	1	9/26/2022 5:58:00 PM	70340
Phenanthrene	4.5	0.16	0.30		µg/L	1	9/26/2022 5:58:00 PM	70340
Anthracene	0.48	0.14	0.30		µg/L	1	9/26/2022 5:58:00 PM	70340
Fluoranthene	0.34	0.14	0.30		µg/L	1	9/26/2022 5:58:00 PM	70340
Pyrene	0.38	0.32	1.0	J	µg/L	1	9/26/2022 5:58:00 PM	70340
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/26/2022 5:58:00 PM	70340
Chrysene	ND	0.25	0.30		µg/L	1	9/26/2022 5:58:00 PM	70340
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/26/2022 5:58:00 PM	70340
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/26/2022 5:58:00 PM	70340

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 9-20-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022
Lab ID: 2209A41-012C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	50.9	0	31.6-100		%Rec	1	9/26/2022 5:58:00 PM	70340
Surr: 2-Fluorobiphenyl	39.9	0	26.7-90.1		%Rec	1	9/26/2022 5:58:00 PM	70340
Surr: 4-Terphenyl-d14	49.7	0	72.3-147	S	%Rec	1	9/26/2022 5:58:00 PM	70340

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 9-20-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022
Lab ID: 2209A41-012D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	1.1	0.0079	0.015		mg/L	5	9/23/2022 3:55:21 PM	70359
Beryllium	ND	0.00088	0.0020		mg/L	1	9/26/2022 2:17:04 PM	70359
Cadmium	ND	0.0018	0.0020		mg/L	1	9/26/2022 2:17:04 PM	70359
Chromium	0.0037	0.0020	0.0060	J	mg/L	1	9/26/2022 2:17:04 PM	70359
Cobalt	0.0086	0.0035	0.0060		mg/L	1	10/3/2022 10:49:41 AM	70359
Nickel	0.037	0.0053	0.010		mg/L	1	9/26/2022 2:17:04 PM	70359
Silver	ND	0.0018	0.0050		mg/L	1	9/26/2022 2:17:04 PM	70359
Vanadium	0.020	0.0035	0.050	J	mg/L	1	9/26/2022 2:17:04 PM	70359
Zinc	0.013	0.0039	0.010		mg/L	1	9/26/2022 2:17:04 PM	70359
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/26/2022 12:46:07 PM	70359
Arsenic	0.0050	0.00013	0.0010		mg/L	1	9/26/2022 12:46:07 PM	70359
Lead	0.0089	0.000061	0.00050		mg/L	1	9/26/2022 12:46:07 PM	70359
Selenium	0.00070	0.00037	0.0010	J	mg/L	1	9/26/2022 12:46:07 PM	70359
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/26/2022 1:42:03 PM	70390

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 9-20-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022
Lab ID: 2209A41-012E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.90	0.0011	0.0020		mg/L	1	9/28/2022 3:56:34 PM	B91392
Beryllium	ND	0.00088	0.0020		mg/L	1	9/28/2022 3:56:34 PM	B91392
Cadmium	ND	0.00098	0.0020		mg/L	1	9/28/2022 3:56:34 PM	B91392
Chromium	ND	0.0020	0.0060		mg/L	1	9/28/2022 3:56:34 PM	B91392
Cobalt	ND	0.0024	0.0060		mg/L	1	9/28/2022 3:56:34 PM	B91392
Nickel	0.035	0.0033	0.010		mg/L	1	9/28/2022 3:56:34 PM	B91392
Silver	0.0016	0.0013	0.0050	J	mg/L	1	9/29/2022 2:02:01 PM	A91423
Vanadium	0.0045	0.0017	0.050	J	mg/L	1	9/28/2022 3:56:34 PM	B91392
Zinc	0.0099	0.0032	0.010	J	mg/L	1	9/28/2022 3:56:34 PM	B91392
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/22/2022 2:29:46 PM	B91237
Arsenic	0.0037	0.00012	0.0010		mg/L	1	9/22/2022 2:29:46 PM	B91237
Lead	0.0011	0.000057	0.00050		mg/L	1	9/22/2022 2:29:46 PM	B91237
Selenium	ND	0.00034	0.0010		mg/L	1	9/22/2022 2:29:46 PM	B91237
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/26/2022 1:44:13 PM	70390

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 9-20-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/20/2022
Lab ID: 2209A41-012F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PACE**	
Cyanide	ND	0.00500	0.00500		mg/L	1	9/28/2022 7:20:00 PM	R92219

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 3rd Quarter
Collection Date:
Lab ID: 2209A41-013A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	9/22/2022 4:19:00 PM	R91223
Toluene	ND	0.20	1.0		µg/L	1	9/22/2022 4:19:00 PM	R91223
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/22/2022 4:19:00 PM	R91223
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/22/2022 4:19:00 PM	R91223
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/22/2022 4:19:00 PM	R91223
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/22/2022 4:19:00 PM	R91223
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/22/2022 4:19:00 PM	R91223
Acetone	6.8	2.5	10	J	µg/L	1	9/22/2022 4:19:00 PM	R91223
Bromomethane	ND	0.85	3.0		µg/L	1	9/22/2022 4:19:00 PM	R91223
2-Butanone	ND	2.0	10		µg/L	1	9/22/2022 4:19:00 PM	R91223
Carbon disulfide	ND	0.59	10		µg/L	1	9/22/2022 4:19:00 PM	R91223
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/22/2022 4:19:00 PM	R91223
Chloroform	ND	0.13	1.0		µg/L	1	9/22/2022 4:19:00 PM	R91223
Chloromethane	ND	0.41	3.0		µg/L	1	9/22/2022 4:19:00 PM	R91223
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/22/2022 4:19:00 PM	R91223
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/22/2022 4:19:00 PM	R91223
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/22/2022 4:19:00 PM	R91223
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/22/2022 4:19:00 PM	R91223
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/22/2022 4:19:00 PM	R91223
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/22/2022 4:19:00 PM	R91223
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/22/2022 4:19:00 PM	R91223
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/22/2022 4:19:00 PM	R91223
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/22/2022 4:19:00 PM	R91223
Styrene	ND	0.14	1.0		µg/L	1	9/22/2022 4:19:00 PM	R91223
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/22/2022 4:19:00 PM	R91223
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/22/2022 4:19:00 PM	R91223
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/22/2022 4:19:00 PM	R91223
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/22/2022 4:19:00 PM	R91223
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/22/2022 4:19:00 PM	R91223
Surr: 1,2-Dichloroethane-d4	109	0	70-130		%Rec	1	9/22/2022 4:19:00 PM	R91223
Surr: 4-Bromofluorobenzene	89.0	0	70-130		%Rec	1	9/22/2022 4:19:00 PM	R91223
Surr: Dibromofluoromethane	108	0	70-130		%Rec	1	9/22/2022 4:19:00 PM	R91223
Surr: Toluene-d8	87.5	0	70-130		%Rec	1	9/22/2022 4:19:00 PM	R91223

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2209A41**
Date Reported: **11/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 3rd Quarter
Collection Date:
Lab ID: 2209A41-013B
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0096		µg/L	1	9/22/2022 8:32:35 PM	70321

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

ANALYTICAL REPORT

September 28, 2022

Hall Environmental Analysis Laboratory

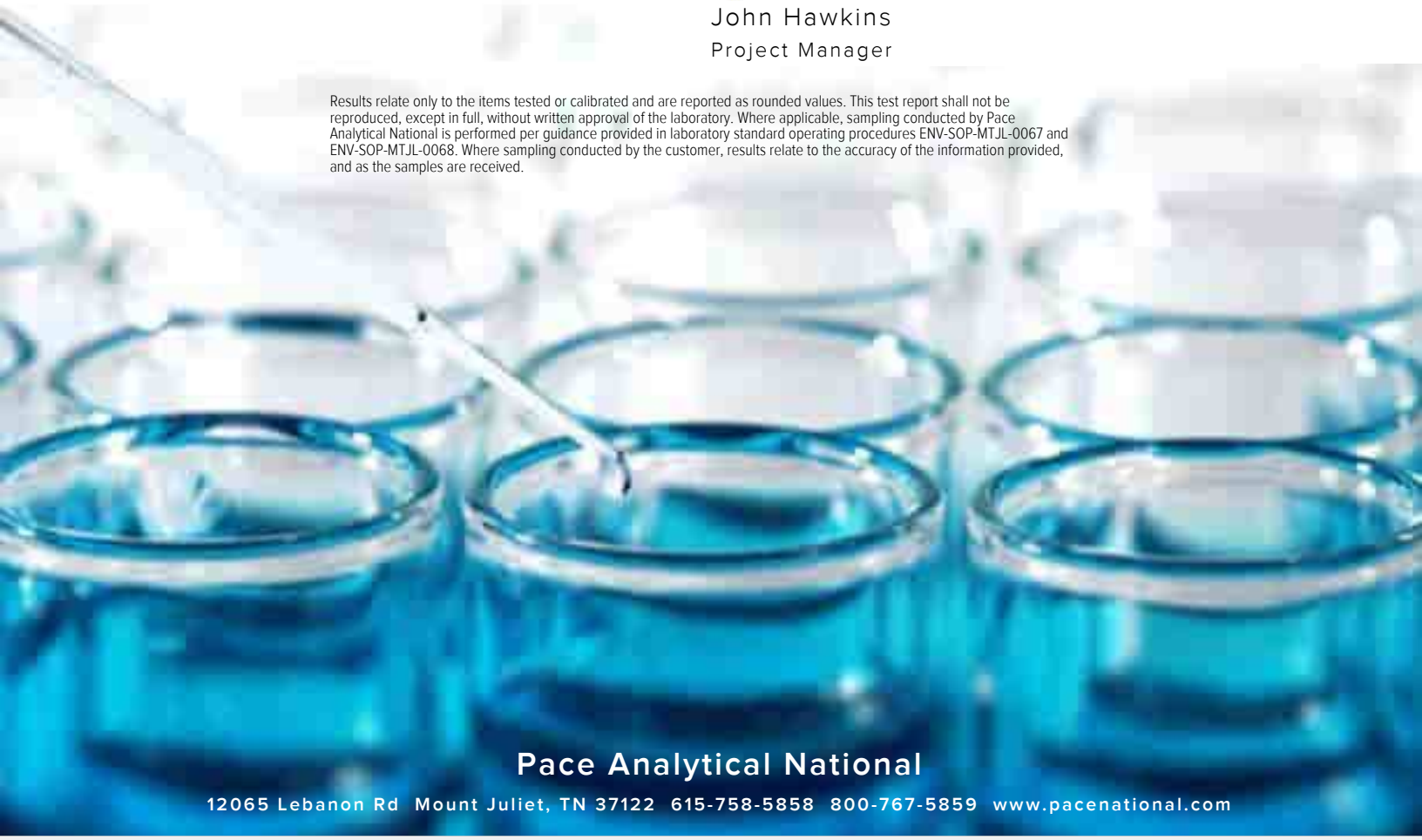
Sample Delivery Group:	L1538426
Samples Received:	09/22/2022
Project Number:	
Description:	

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By:

John Hawkins
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 5

Sr: Sample Results 6

2209A41-001F EB-09-20-22 L1538426-01 6

2209A41-003F OW-63 L1538426-02 7

2209A41-004F OW-58A L1538426-03 8

2209A41-005F OW-58 L1538426-04 9

2209A41-006F OW-64 L1538426-05 10

2209A41-007F STP-1-NW L1538426-06 11

2209A41-008F OW-60 L1538426-07 12

2209A41-009F OW-68 L1538426-08 13

2209A41-010F OW-67 L1538426-09 14

2209A41-012F DUP-9-20-22 L1538426-10 15

Qc: Quality Control Summary 16

Wet Chemistry by Method 4500CN E-2016 16

Gl: Glossary of Terms 17

Al: Accreditations & Locations 18

Sc: Sample Chain of Custody 19

SAMPLE SUMMARY

2209A41-001F EB-09-20-22 L1538426-01 WW

			Collected by	Collected date/time	Received date/time	
				09/20/22 08:00	09/22/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1930995	1	09/27/22 02:15	09/28/22 19:07	LDT	Mt. Juliet, TN

2209A41-003F OW-63 L1538426-02 WW

			Collected by	Collected date/time	Received date/time	
				09/20/22 10:15	09/22/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1930995	1	09/27/22 02:15	09/28/22 19:10	LDT	Mt. Juliet, TN

2209A41-004F OW-58A L1538426-03 WW

			Collected by	Collected date/time	Received date/time	
				09/20/22 10:45	09/22/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1930995	1	09/27/22 02:15	09/28/22 19:13	LDT	Mt. Juliet, TN

2209A41-005F OW-58 L1538426-04 WW

			Collected by	Collected date/time	Received date/time	
				09/20/22 11:05	09/22/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1930995	1	09/27/22 02:15	09/28/22 19:14	LDT	Mt. Juliet, TN

2209A41-006F OW-64 L1538426-05 WW

			Collected by	Collected date/time	Received date/time	
				09/20/22 11:30	09/22/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1930995	1	09/27/22 02:15	09/28/22 19:15	LDT	Mt. Juliet, TN

2209A41-007F STP-1-NW L1538426-06 WW

			Collected by	Collected date/time	Received date/time	
				09/20/22 11:40	09/22/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1930995	1	09/27/22 02:15	09/28/22 19:16	LDT	Mt. Juliet, TN

2209A41-008F OW-60 L1538426-07 WW

			Collected by	Collected date/time	Received date/time	
				09/20/22 11:55	09/22/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1930995	1	09/27/22 02:15	09/28/22 19:17	LDT	Mt. Juliet, TN

2209A41-009F OW-68 L1538426-08 WW

			Collected by	Collected date/time	Received date/time	
				09/20/22 12:10	09/22/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1930995	1	09/27/22 02:15	09/28/22 19:18	LDT	Mt. Juliet, TN

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

SAMPLE SUMMARY

2209A41-010F OW-67 L1538426-09 WW

Collected by	Collected date/time	Received date/time
	09/20/22 12:20	09/22/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1930995	1	09/27/22 02:15	09/28/22 19:19	LDT	Mt. Juliet, TN

2209A41-012F DUP-9-20-22 L1538426-10 WW

Collected by	Collected date/time	Received date/time
	09/20/22 00:00	09/22/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1930995	1	09/27/22 02:15	09/28/22 19:20	LDT	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	09/28/2022 19:07	WG1930995

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.0120		0.00500	1	09/28/2022 19:10	WG1930995

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	09/28/2022 19:13	WG1930995

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.00570		0.00500	1	09/28/2022 19:14	WG1930995

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	09/28/2022 19:15	WG1930995

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.0550		0.00500	1	09/28/2022 19:16	WG1930995

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.00639		0.00500	1	09/28/2022 19:17	WG1930995

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.0115		0.00500	1	09/28/2022 19:18	WG1930995

Received by OCD: 4/21/2023 9:21:57 AM

2209A41-0101 GW-07
Collected date/time: 09/20/22 12:20
L1538426

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.0373		0.00500	1	09/28/2022 19:19	WG1930995

Released to Imaging: 4/21/2023 9:40:26 AM

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	09/28/2022 19:20	WG1930995

Method Blank (MB)

(MB) R3842543-1 09/28/22 18:48

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1538259-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1538259-02 09/28/22 18:54 • (DUP) R3842543-3 09/28/22 18:56

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	0.00518	1	5.15		20

L1538387-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1538387-02 09/28/22 19:03 • (DUP) R3842543-6 09/28/22 19:04

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	200	P1	20

Laboratory Control Sample (LCS)

(LCS) R3842543-2 09/28/22 18:49

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.0987	98.7	87.1-120	

L1538379-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1538379-01 09/28/22 18:58 • (MS) R3842543-4 09/28/22 19:01 • (MSD) R3842543-5 09/28/22 19:02

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0969	0.0970	96.9	97.0	1	90.0-110			0.103	20

L1538426-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1538426-01 09/28/22 19:07 • (MS) R3842543-7 09/28/22 19:08 • (MSD) R3842543-8 09/28/22 19:09

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0971	0.0974	97.1	97.4	1	90.0-110			0.308	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Received by OCD: 4/21/2023 9:21:57 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

G125

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

SUB CONTRATOR:	Pace TN	COMPANY: PACE TN	PHONE: (800) 767-5859	FAX: (615) 758-5859	
ADDRESS:	12065 Lebanon Rd		ACCOUNT #:	EMAIL:	
CITY, STATE, ZIP:	Mt. Juliet, TN 37122				

L1538426

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	2209A41-001F	EB-09-20-22	500AMBHDP F-NAOH	Groundwater	9/20/2022 8:00:00 AM	1	Total Cyanide J and MDL
2	2209A41-003F	OW-63	500AMBHDP F-NAOH	Groundwater	9/20/2022 10:15:00 AM	1	Total Cyanide J and MDL
3	2209A41-004F	OW-58A	500AMBHDP F-NAOH	Groundwater	9/20/2022 10:45:00 AM	1	Total Cyanide J and MDL
4	2209A41-005F	OW-58	500AMBHDP F-NAOH	Groundwater	9/20/2022 11:05:00 AM	1	Total Cyanide J and MDL
5	2209A41-006F	OW-64	500AMBHDP F-NAOH	Groundwater	9/20/2022 11:30:00 AM	1	Total Cyanide J and MDL
6	2209A41-007F	STP-1-NW	500AMBHDP F-NAOH	Groundwater	9/20/2022 11:40:00 AM	1	Total Cyanide J and MDL
7	2209A41-008F	OW-60	500AMBHDP F-NAOH	Groundwater	9/20/2022 11:55:00 AM	1	Total Cyanide J and MDL
8	2209A41-009F	OW-68	500AMBHDP F-NAOH	Groundwater	9/20/2022 12:10:00 PM	1	Total Cyanide J and MDL
9	2209A41-010F	OW-67	500AMBHDP F-NAOH	Groundwater	9/20/2022 12:20:00 PM	1	Total Cyanide J and MDL
10	2209A41-012F	DUP 9-20-22	500AMBHDP F-NAOH	Groundwater	9/20/2022	1	Total Cyanide J and MDL

Sample Receipt Checklist

COC Seal Present/Intact:	Y N	If Applicable	
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	Y N	Pres.Correct/Check:	Y N
Correct bottles used:	Y N		
Sufficient volume sent:	Y N		
RAD Screen <0.5 mR/hr:	Y N		

2.0+0=2.0 NSAG

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By: Cire	Date: 9/21/2022	Time: 9:07 AM	Received By:	Date: 9/21/22	Time: 0900
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☑ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:

☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY

Temp of samples _____ °C Attempt to Cool ? _____

Comments: _____

Released to Imaging: 4/21/2023 9:40:26 AM

November 02, 2022

Vista Work Order No. 2209182

Mr. Andy Freeman
Hall Environmental Analytical Laboratory
4901 Hawkins NE
Albuquerque, NM 87109

Dear Mr. Freeman,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on September 22, 2022 under your Project Name '2209A41'.

Vista Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at kvolpendesta@vista-analytical.com.

Thank you for choosing Vista as part of your analytical support team.

Sincerely,

Karen L. Volpendesta
Project Manager

Vista Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAP for those applicable test methods. Results relate only to the samples as received by the laboratory. This report should not be reproduced except in full without the written approval of Vista.

Vista Work Order No. 2209182
Case Narrative

Sample Condition on Receipt:

Two aqueous samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology. The samples were received in good condition and within the recommended temperature requirements.

Analytical Notes:

PFAS Isotope Dilution Method

The samples were extracted and analyzed for a selected list of PFAS using Vista's PFAS Isotope Dilution Method. The results for PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Results for all other analytes include the linear isomers only.

Holding Times

The samples were extracted outside of the hold time.

Quality Control

The Initial Calibration and Continuing Calibration Verifications met the acceptance criteria.

A Method Blank and Ongoing Precision and Recovery (OPR) sample were extracted and analyzed with the preparation batch. No analytes were detected in the Method Blank above the Reporting Limit. The OPR recoveries were within the method acceptance criteria.

The labeled standard recoveries for all QC and field samples were within the acceptance criteria.

TABLE OF CONTENTS

Case Narrative..... 1

Table of Contents..... 3

Sample Inventory..... 4

Analytical Results..... 5

Qualifiers..... 14

Certifications..... 15

Sample Receipt..... 18

Sample Inventory Report

Vista
an Enthalpy Analytical Laboratory

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
2209182-01	EB-09-20-22	20-Sep-22 12:40	22-Sep-22 09:49	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2209182-02	OW-63	20-Sep-22 10:15	22-Sep-22 09:49	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL

ANALYTICAL RESULTS

Vista
an Enthalpy Analytical observatory

Sample ID: Method Blank — **PFAS Isotope Dilution Method**

Client Data
Name: Hall Environmental Analytical Laboratory
Project: 2209A41
Matrix: Aqueous

Laboratory Data
Lab Sample: B22J201-BLK1
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	2.00		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:49	1
PFPeA	2706-90-3	ND	2.00		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:49	1
PFBS	375-73-5	ND	2.00		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:49	1
4:2 FTS	757124-72-4	ND	2.00		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:49	1
PFHxA	307-24-4	ND	2.00		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:49	1
PFPeS	2706-91-4	ND	2.00		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:49	1
PFHpA	375-85-9	ND	2.00		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:49	1
PFHxS	355-46-4	ND	2.00		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:49	1
6:2 FTS	27619-97-2	ND	2.00		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:49	1
PFOA	335-67-1	ND	2.00		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:49	1
PFHpS	375-92-8	ND	2.00		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:49	1
PFNA	375-95-1	ND	2.00		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:49	1
PFOSA	754-91-6	ND	2.00		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:49	1
PFOS	1763-23-1	ND	2.00		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:49	1
PFDA	335-76-2	ND	2.00		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:49	1
8:2 FTS	39108-34-4	ND	2.00		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:49	1
PFNS	68259-12-1	ND	2.00		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:49	1
MeFOSAA	2355-31-9	ND	2.00		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:49	1
EtFOSAA	2991-50-6	ND	2.00		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:49	1
PFUnA	2058-94-8	ND	2.00		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:49	1
PFDS	335-77-3	ND	2.00		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:49	1
PFDoA	307-55-1	ND	2.00		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:49	1
PFTrDA	72629-94-8	ND	2.00		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:49	1
PFTeDA	376-06-7	ND	2.00		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:49	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	112	25 - 150		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:49	1
13C3-PFPeA	IS	116	25 - 150		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:49	1
13C3-PFBS	IS	118	25 - 150		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:49	1
13C2-4:2 FTS	IS	116	25 - 150		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:49	1
13C2-PFHxA	IS	124	25 - 150		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:49	1
13C4-PFHpA	IS	114	25 - 150		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:49	1
13C3-PFHxS	IS	104	25 - 150		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:49	1
13C2-6:2 FTS	IS	108	25 - 150		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:49	1
13C2-PFOA	IS	109	25 - 150		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:49	1
13C5-PFNA	IS	102	25 - 150		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:49	1
13C8-PFOSA	IS	93.8	10 - 150		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:49	1
13C8-PFOS	IS	108	25 - 150		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:49	1
13C2-PFDA	IS	114	25 - 150		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:49	1

Sample ID: Method Blank **PFAS Isotope Dilution Method**

Client Data

Name: Hall Environmental Analytical Laboratory Matrix: Aqueous

Project: 2209A41

Laboratory Data

Lab Sample: B22J201-BLK1 Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-8:2 FTS	IS	107	25 - 150		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:49	1
d3-MeFOSAA	IS	102	25 - 150		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:49	1
d5-EtFOSAA	IS	93.1	25 - 150		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:49	1
13C2-PFUnA	IS	95.2	25 - 150		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:49	1
13C2-PFDoA	IS	77.2	25 - 150		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:49	1
13C2-PFTeDA	IS	67.6	20 - 150		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:49	1

RL - Reporting limit

Results reported to RL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

Sample ID: OPR **PFAS Isotope Dilution Method**

Client Data

Name: Hall Environmental Analytical Laboratory
Project: 2209A41
Matrix: Aqueous

Laboratory Data

Lab Sample: B22J201-BS1
Column: BEH C18

Analyte	CAS Number	Amt Found (ng/L)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	36.2	40.0	90.4	65 - 135		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:59	1
PFPeA	2706-90-3	40.8	40.0	102	65 - 135		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:59	1
PFBS	375-73-5	30.2	40.4	74.7	65 - 135		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:59	1
4:2 FTS	757124-72-4	40.6	40.0	102	60 - 145		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:59	1
PFHxA	307-24-4	41.6	40.0	104	65 - 135		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:59	1
PFPeS	2706-91-4	37.1	40.4	91.9	65 - 135		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:59	1
PFHpA	375-85-9	36.9	40.0	92.2	65 - 135		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:59	1
PFHxS	355-46-4	37.6	40.0	93.9	65 - 135		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:59	1
6:2 FTS	27619-97-2	28.4	40.0	70.9	60 - 140		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:59	1
PFOA	335-67-1	35.8	40.0	89.4	65 - 135		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:59	1
PFHpS	375-92-8	39.5	40.0	98.6	65 - 135		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:59	1
PFNA	375-95-1	36.3	40.0	90.7	65 - 135		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:59	1
PFOSA	754-91-6	35.1	40.0	87.7	65 - 140		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:59	1
PFOS	1763-23-1	38.0	40.0	95.1	65 - 140		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:59	1
PFDA	335-76-2	40.8	40.0	102	65 - 135		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:59	1
8:2 FTS	39108-34-4	40.3	40.0	101	65 - 135		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:59	1
PFNS	68259-12-1	32.2	40.0	80.5	65 - 135		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:59	1
MeFOSAA	2355-31-9	35.2	40.0	88.0	65 - 135		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:59	1
EtFOSAA	2991-50-6	38.5	40.0	96.2	65 - 135		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:59	1
PFUnA	2058-94-8	36.7	40.0	91.9	65 - 140		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:59	1
PFDS	335-77-3	30.5	40.0	76.3	50 - 150		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:59	1
PFDoA	307-55-1	39.2	40.0	98.1	65 - 135		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:59	1
PFTrDA	72629-94-8	39.5	40.0	98.8	60 - 140		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:59	1
PFTeDA	376-06-7	40.4	40.0	101	65 - 135		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:59	1

Labeled Standards	Type	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	101	25 - 150		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:59	1
13C3-PFPeA	IS	102	25 - 150		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:59	1
13C3-PFBS	IS	107	25 - 150		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:59	1
13C2-4:2 FTS	IS	106	25 - 150		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:59	1
13C2-PFHxA	IS	117	25 - 150		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:59	1
13C4-PFHpA	IS	108	25 - 150		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:59	1
13C3-PFHxS	IS	96.2	25 - 150		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:59	1
13C2-6:2 FTS	IS	101	25 - 150		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:59	1
13C2-PFOA	IS	101	25 - 150		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:59	1
13C5-PFNA	IS	107	25 - 150		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:59	1

Sample ID: OPR **PFAS Isotope Dilution Method**

Client Data

Name: Hall Environmental Analytical Laboratory
Project: 2209A41
Matrix: Aqueous

Laboratory Data

Lab Sample: B22J201-BS1
Column: BEH C18

Labeled Standards	Type	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C8-PFOSA	IS	88.7	10 - 150		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:59	1
13C8-PFOS	IS	106	25 - 150		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:59	1
13C2-PFDA	IS	96.8	25 - 150		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:59	1
13C2-8:2 FTS	IS	92.5	25 - 150		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:59	1
d3-MeFOSAA	IS	99.5	25 - 150		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:59	1
d5-EtFOSAA	IS	81.9	25 - 150		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:59	1
13C2-PFUnA	IS	87.1	25 - 150		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:59	1
13C2-PFDoA	IS	82.5	25 - 150		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:59	1
13C2-PFTeDA	IS	84.0	20 - 150		B22J201	25-Oct-22	0.250 L	28-Oct-22 01:59	1

Vista
an Enthalpy Analytical observatory

Sample ID: EB-09-20-22

PFAS Isotope Dilution Method

Client Data

Name: Hall Environmental Analytical Laboratory
Project: 2209A41
Location: 2209A1-002A
Matrix: Aqueous
Date Collected: 20-Sep-22 12:40

Laboratory Data

Lab Sample: 2209182-01
Date Received: 22-Sep-22 09:49
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	1.96		B22J201	25-Oct-22	0.255 L	28-Oct-22 02:10	1
PFPeA	2706-90-3	ND	1.96		B22J201	25-Oct-22	0.255 L	28-Oct-22 02:10	1
PFBS	375-73-5	ND	1.96		B22J201	25-Oct-22	0.255 L	28-Oct-22 02:10	1
4:2 FTS	757124-72-4	ND	1.96		B22J201	25-Oct-22	0.255 L	28-Oct-22 02:10	1
PFHxA	307-24-4	ND	1.96		B22J201	25-Oct-22	0.255 L	28-Oct-22 02:10	1
PFPeS	2706-91-4	ND	1.96		B22J201	25-Oct-22	0.255 L	28-Oct-22 02:10	1
PFHpA	375-85-9	ND	1.96		B22J201	25-Oct-22	0.255 L	28-Oct-22 02:10	1
PFHxS	355-46-4	ND	1.96		B22J201	25-Oct-22	0.255 L	28-Oct-22 02:10	1
6:2 FTS	27619-97-2	ND	1.96		B22J201	25-Oct-22	0.255 L	28-Oct-22 02:10	1
PFOA	335-67-1	ND	1.96		B22J201	25-Oct-22	0.255 L	28-Oct-22 02:10	1
PFHpS	375-92-8	ND	1.96		B22J201	25-Oct-22	0.255 L	28-Oct-22 02:10	1
PFNA	375-95-1	ND	1.96		B22J201	25-Oct-22	0.255 L	28-Oct-22 02:10	1
PFOSA	754-91-6	ND	1.96		B22J201	25-Oct-22	0.255 L	28-Oct-22 02:10	1
PFOS	1763-23-1	ND	1.96		B22J201	25-Oct-22	0.255 L	28-Oct-22 02:10	1
PFDA	335-76-2	ND	1.96		B22J201	25-Oct-22	0.255 L	28-Oct-22 02:10	1
8:2 FTS	39108-34-4	ND	1.96		B22J201	25-Oct-22	0.255 L	28-Oct-22 02:10	1
PFNS	68259-12-1	ND	1.96		B22J201	25-Oct-22	0.255 L	28-Oct-22 02:10	1
MeFOSAA	2355-31-9	ND	1.96		B22J201	25-Oct-22	0.255 L	28-Oct-22 02:10	1
EtFOSAA	2991-50-6	ND	1.96		B22J201	25-Oct-22	0.255 L	28-Oct-22 02:10	1
PFUnA	2058-94-8	ND	1.96		B22J201	25-Oct-22	0.255 L	28-Oct-22 02:10	1
PFDS	335-77-3	ND	1.96		B22J201	25-Oct-22	0.255 L	28-Oct-22 02:10	1
PFDoA	307-55-1	ND	1.96		B22J201	25-Oct-22	0.255 L	28-Oct-22 02:10	1
PFTrDA	72629-94-8	ND	1.96		B22J201	25-Oct-22	0.255 L	28-Oct-22 02:10	1
PFTeDA	376-06-7	ND	1.96		B22J201	25-Oct-22	0.255 L	28-Oct-22 02:10	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	91.7	25 - 150		B22J201	25-Oct-22	0.255 L	28-Oct-22 02:10	1
13C3-PFPeA	IS	98.9	25 - 150		B22J201	25-Oct-22	0.255 L	28-Oct-22 02:10	1
13C3-PFBS	IS	106	25 - 150		B22J201	25-Oct-22	0.255 L	28-Oct-22 02:10	1
13C2-4:2 FTS	IS	95.5	25 - 150		B22J201	25-Oct-22	0.255 L	28-Oct-22 02:10	1
13C2-PFHxA	IS	112	25 - 150		B22J201	25-Oct-22	0.255 L	28-Oct-22 02:10	1
13C4-PFHpA	IS	105	25 - 150		B22J201	25-Oct-22	0.255 L	28-Oct-22 02:10	1
13C3-PFHxS	IS	101	25 - 150		B22J201	25-Oct-22	0.255 L	28-Oct-22 02:10	1
13C2-6:2 FTS	IS	96.6	25 - 150		B22J201	25-Oct-22	0.255 L	28-Oct-22 02:10	1
13C2-PFOA	IS	86.8	25 - 150		B22J201	25-Oct-22	0.255 L	28-Oct-22 02:10	1
13C5-PFNA	IS	97.5	25 - 150		B22J201	25-Oct-22	0.255 L	28-Oct-22 02:10	1
13C8-PFOSA	IS	71.4	10 - 150		B22J201	25-Oct-22	0.255 L	28-Oct-22 02:10	1
13C8-PFOS	IS	84.0	25 - 150		B22J201	25-Oct-22	0.255 L	28-Oct-22 02:10	1

Sample ID: EB-09-20-22

PFAS Isotope Dilution Method

Client Data

Name: Hall Environmental Analytical Laboratory
Project: 2209A41
Location: 2209A1-002A
Matrix: Aqueous
Date Collected: 20-Sep-22 12:40

Laboratory Data

Lab Sample: 2209182-01
Date Received: 22-Sep-22 09:49
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFDA	IS	87.5	25 - 150		B22J201	25-Oct-22	0.255 L	28-Oct-22 02:10	1
13C2-8:2 FTS	IS	93.3	25 - 150		B22J201	25-Oct-22	0.255 L	28-Oct-22 02:10	1
d3-MeFOSAA	IS	92.6	25 - 150		B22J201	25-Oct-22	0.255 L	28-Oct-22 02:10	1
d5-EtFOSAA	IS	76.8	25 - 150		B22J201	25-Oct-22	0.255 L	28-Oct-22 02:10	1
13C2-PFUnA	IS	91.3	25 - 150		B22J201	25-Oct-22	0.255 L	28-Oct-22 02:10	1
13C2-PFDoA	IS	74.5	25 - 150		B22J201	25-Oct-22	0.255 L	28-Oct-22 02:10	1
13C2-PFTeDA	IS	86.0	20 - 150		B22J201	25-Oct-22	0.255 L	28-Oct-22 02:10	1

RL - Reporting limit

Results reported to RL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

Vista
an Enthalpy Analytical observatory

Sample ID: OW-63 **PFAS Isotope Dilution Method**

Client Data

Name: Hall Environmental Analytical Laboratory
Project: 2209A41
Location: 2209A1-003G
Matrix: Aqueous
Date Collected: 20-Sep-22 10:15

Laboratory Data

Lab Sample: 2209182-02
Date Received: 22-Sep-22 09:49
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	121	2.01		B22J201	25-Oct-22	0.249 L	28-Oct-22 02:20	1
PFPeA	2706-90-3	470	2.01		B22J201	25-Oct-22	0.249 L	28-Oct-22 02:20	1
PFBS	375-73-5	35.1	2.01		B22J201	25-Oct-22	0.249 L	28-Oct-22 02:20	1
4:2 FTS	757124-72-4	ND	2.01		B22J201	25-Oct-22	0.249 L	28-Oct-22 02:20	1
PFHxA	307-24-4	352	2.01		B22J201	25-Oct-22	0.249 L	28-Oct-22 02:20	1
PFPeS	2706-91-4	42.5	2.01		B22J201	25-Oct-22	0.249 L	28-Oct-22 02:20	1
PFHpA	375-85-9	134	2.01		B22J201	25-Oct-22	0.249 L	28-Oct-22 02:20	1
PFHxS	355-46-4	255	2.01		B22J201	25-Oct-22	0.249 L	28-Oct-22 02:20	1
6:2 FTS	27619-97-2	556	2.01		B22J201	25-Oct-22	0.249 L	28-Oct-22 02:20	1
PFOA	335-67-1	108	2.01		B22J201	25-Oct-22	0.249 L	28-Oct-22 02:20	1
PFHpS	375-92-8	8.81	2.01		B22J201	25-Oct-22	0.249 L	28-Oct-22 02:20	1
PFNA	375-95-1	482	2.01		B22J201	25-Oct-22	0.249 L	28-Oct-22 02:20	1
PFOSA	754-91-6	ND	2.01		B22J201	25-Oct-22	0.249 L	28-Oct-22 02:20	1
PFOS	1763-23-1	316	2.01		B22J201	25-Oct-22	0.249 L	28-Oct-22 02:20	1
PFDA	335-76-2	12.3	2.01		B22J201	25-Oct-22	0.249 L	28-Oct-22 02:20	1
8:2 FTS	39108-34-4	71.4	2.01		B22J201	25-Oct-22	0.249 L	28-Oct-22 02:20	1
PFNS	68259-12-1	ND	2.01		B22J201	25-Oct-22	0.249 L	28-Oct-22 02:20	1
MeFOSAA	2355-31-9	ND	2.01		B22J201	25-Oct-22	0.249 L	28-Oct-22 02:20	1
EtFOSAA	2991-50-6	ND	2.01		B22J201	25-Oct-22	0.249 L	28-Oct-22 02:20	1
PFUnA	2058-94-8	71.7	2.01		B22J201	25-Oct-22	0.249 L	28-Oct-22 02:20	1
PFDS	335-77-3	ND	2.01		B22J201	25-Oct-22	0.249 L	28-Oct-22 02:20	1
PFDoA	307-55-1	ND	2.01		B22J201	25-Oct-22	0.249 L	28-Oct-22 02:20	1
PFTrDA	72629-94-8	ND	2.01		B22J201	25-Oct-22	0.249 L	28-Oct-22 02:20	1
PFTeDA	376-06-7	ND	2.01		B22J201	25-Oct-22	0.249 L	28-Oct-22 02:20	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	61.2	25 - 150		B22J201	25-Oct-22	0.249 L	28-Oct-22 02:20	1
13C3-PFPeA	IS	93.9	25 - 150		B22J201	25-Oct-22	0.249 L	28-Oct-22 02:20	1
13C3-PFBS	IS	101	25 - 150		B22J201	25-Oct-22	0.249 L	28-Oct-22 02:20	1
13C2-4:2 FTS	IS	91.6	25 - 150		B22J201	25-Oct-22	0.249 L	28-Oct-22 02:20	1
13C2-PFHxA	IS	112	25 - 150		B22J201	25-Oct-22	0.249 L	28-Oct-22 02:20	1
13C4-PFHpA	IS	102	25 - 150		B22J201	25-Oct-22	0.249 L	28-Oct-22 02:20	1
13C3-PFHxS	IS	93.4	25 - 150		B22J201	25-Oct-22	0.249 L	28-Oct-22 02:20	1
13C2-6:2 FTS	IS	102	25 - 150		B22J201	25-Oct-22	0.249 L	28-Oct-22 02:20	1
13C2-PFOA	IS	96.4	25 - 150		B22J201	25-Oct-22	0.249 L	28-Oct-22 02:20	1
13C5-PFNA	IS	104	25 - 150		B22J201	25-Oct-22	0.249 L	28-Oct-22 02:20	1
13C8-PFOSA	IS	67.1	10 - 150		B22J201	25-Oct-22	0.249 L	28-Oct-22 02:20	1
13C8-PFOS	IS	102	25 - 150		B22J201	25-Oct-22	0.249 L	28-Oct-22 02:20	1

Sample ID: OW-63

PFAS Isotope Dilution Method

Client Data

Name: Hall Environmental Analytical Laboratory
Project: 2209A41
Location: 2209A1-003G
Matrix: Aqueous
Date Collected: 20-Sep-22 10:15

Laboratory Data

Lab Sample: 2209182-02
Date Received: 22-Sep-22 09:49
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFDA	IS	100	25 - 150		B22J201	25-Oct-22	0.249 L	28-Oct-22 02:20	1
13C2-8:2 FTS	IS	83.4	25 - 150		B22J201	25-Oct-22	0.249 L	28-Oct-22 02:20	1
d3-MeFOSAA	IS	85.0	25 - 150		B22J201	25-Oct-22	0.249 L	28-Oct-22 02:20	1
d5-EtFOSAA	IS	80.1	25 - 150		B22J201	25-Oct-22	0.249 L	28-Oct-22 02:20	1
13C2-PFUnA	IS	84.6	25 - 150		B22J201	25-Oct-22	0.249 L	28-Oct-22 02:20	1
13C2-PFDoA	IS	73.8	25 - 150		B22J201	25-Oct-22	0.249 L	28-Oct-22 02:20	1
13C2-PFTeDA	IS	47.5	20 - 150		B22J201	25-Oct-22	0.249 L	28-Oct-22 02:20	1

RL - Reporting limit

Results reported to RL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank
Conc.	Concentration
CRS	Cleanup Recovery Standard
D	Dilution
DL	Detection Limit
E	The associated compound concentration exceeded the calibration range of the instrument
H	Recovery and/or RPD was outside laboratory acceptance limits
I	Chemical Interference
IS	Internal Standard
J	The amount detected is below the Reporting Limit/LOQ
LOD	Limit of Detection
LOQ	Limit of Quantitation
M	Estimated Maximum Possible Concentration (CA Region 2 projects only)
MDL	Method Detection Limit
NA	Not applicable
ND	Not Detected
OPR	Ongoing Precision and Recovery sample
P	The reported concentration may include contribution from chlorinated diphenyl ether(s).
Q	The ion transition ratio is outside of the acceptance criteria.
RL	Reporting Limit
RL	For 537.1, the reported RLs are the MRLs.
TEQ	Toxic Equivalency, sum of the toxic equivalency factors (TEF) multiplied by the sample concentrations.
TEQMax	TEQ calculation that uses the detection limit as the concentration for non-detects
TEQMin	TEQ calculation that uses zero as the concentration for non-detects
TEQRisk	TEQ calculation that uses ½ the detection limit as the concentration for non-detects
U	Not Detected (specific projects only)
*	See Cover Letter

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

Vista Analytical Laboratory Certifications

Accrediting Authority	Certificate Number
Alaska Department of Environmental Conservation	17-013
Arkansas Department of Environmental Quality	21-023-0
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Department of Health	E87777
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2020018
Massachusetts Department of Environmental Protection	M-CA413
Michigan Department of Environmental Quality	9932
Minnesota Department of Health	2211390
New Hampshire Environmental Accreditation Program	207721
New Jersey Department of Environmental Protection	CA003
New York Department of Health	11411
Ohio Environmental Protection Agency	87778
Oregon Laboratory Accreditation Program	4042-021
Pennsylvania Department of Environmental Protection	018
Texas Commission on Environmental Quality	T104704189-22-13
Vermont Department of Health	VT-4042
Virginia Department of General Services	11276
Washington Department of Ecology	C584
Wisconsin Department of Natural Resources	998036160

Current certificates and lists of licensed parameters are located in the Quality Assurance office and are available upon request.

NELAP Accredited Test Methods

MATRIX: Air	
Description of Test	**Method**
Determination of Polychlorinated p- Dioxins & Polychlorinated Dibenzofurans	EPA 23
Polychlorinated Dibenzodioxins in Ambient Air by GC/HRMS	EPA TO-9A

MATRIX: Biological Tissue	
Description of Test	**Method**
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	PFAS Isotope Dilution
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Drinking Water	
Description of Test	**Method**
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613/1613B
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	PFAS Isotope Dilution
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537.1
Determination of Per- and Polyfluoroalkyl Substances in Drinking Water by Isotope Dilution Anion Exchange Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry	EPA 533
Perfluorooctanesulonate (PFOS) and Perfluorooctanoate (PFOA) - Method for Unfiltered Samples Using Solid Phase Extraction and Liquid Chromatography/Mass Spectrometry	ISO 25101 2009

MATRIX: Non-Potable Water	
Description of Test	**Method**
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	PFAS Isotope Dilution
Dioxin by GC/HRMS	EPA 613
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Solids	
Description of Test	**Method**
Tetra-Octa Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	PFAS Isotope Dilution
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

2209182

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

CLIENT:	Vista Analytical Labor	Vista Analytical Laboratory	PHONE: (916) 673-1520
ADDRESS:	1104 Windfield Way		ACCOUNT #:
CITY, STATE, ZIP:	El Dorado Hills, CA 95762		EMAIL:

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	HOLD	ANALYTICAL COMMENTS
1	2209441-002A	EB-09-20-22	250HDPE	Groundw	9/20/2022 12:40:00 PM	2	24 Coumpound PFAS Testing Unchlorinated Sample 3 and MDL
2	2209441-003G	OW-63	250HDPE	Groundw	9/20/2022 10:15:00 AM	2	24 Coumpound PFAS Testing Unchlorinated Sample 3 and MDL

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By:	Date: 9/22/22	Time: 9:07 AM	Received By: Cyra Cloud	Date: 09/22/22	Time: 09:49
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard RUSH 1st RH 2nd RH 3rd RH

REPORT TRANSMITTAL DESIRED:

FOR LAB USE ONLY

Temp of samples: °F Attempt to Cool ?

Condition:

Vista Analytical Laboratory

Sample Log-In Checklist

Page # 1 of 1

Vista Work Order #: 22-4182 TAT Std

Samples Arrival:	Date/Time 09:49 09/22/22		Initials: BAC		Location: WA-2 Shelf/Rack: N/A		
Delivered By:	(FedEx)	UPS	On Trac	GLS	DHL	Hand Delivered	Other
Preservation:	Ice		(Blue Ice)		Techni Ice	Dry Ice	None
Temp °C: 1.6 (uncorrected) Temp °C: 1.4 (corrected)	Probe used: Y / (N)				Thermometer ID: IR-4		

	YES	NO	NA
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Airbill Trk # 777999572702	✓		
Shipping Documentation Present?	✓		
Shipping Container: Vista, (Client), Retain, (Return), Dispose			
Chain of Custody / Sample Documentation Present?	✓		
Chain of Custody / Sample Documentation Complete?	✓		
Holding Time Acceptable?	✓		

Logged In:	Date/Time 09/22/22 13:40	Initials: KA	Location: A-1, WA-2 Shelf/Rack: A-1 #-4
COC Anomaly/Sample Acceptance Form completed?			✓ ✓

Comments:

ID.: LIT – SLC Rev No.: 6 Rev Date: 07/16/2020 Page: 1 of 1

CoC/Label Reconciliation Report WO# 2209182

Lab Number	CoC Sample ID		Sample Acc	Sample Date/Time		Container	Boss Matrix	Sample Comments
2209182-01	A BB-09-20-22	☑	2209A1-001A	20-Sep-22 12:40	☑	HDPE Bottle, 250 mL	Aqueous	
2209182-01	B BB-09-20-22	☑	2209A1-002A	20-Sep-22 12:40	☑	HDPE Bottle, 250 mL	Aqueous	
2209182-02	A DW-03	☑ ①	2209A1-003G	20-Sep-22 10:15	☑	HDPE Bottle, 250 mL	Aqueous	
2209182-02	B DW-03	☑ ①	2209A1-004G	20-Sep-22 10:15	☑	HDPE Bottle, 250 mL	Aqueous	

Checkmarks indicate that information on the COC reconciled with the sample label.
Any discrepancies are noted in the following columns.

	Yes	No	NA
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Adequate Sample Volume?	✓		
Container Type Appropriate for Analysis(es)	✓		

Comments: ① ESS Prism Label.
② Sample contains light rusty tint.

Preservation Documented: Na2S2O3 (Zn Acet) NH4CH3CO2 None Other

Verified by/Date: EA 9/22/22

Released to Imaging: 4/21/2023 9:40:26 AM

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209A41**

04-Nov-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70359**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **70359**	RunNo: **91277**
Prep Date: **9/22/2022**	Analysis Date: **9/23/2022**	SeqNo: **3266355** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LCSLL-70359**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **70359**	RunNo: **91277**
Prep Date: **9/22/2022**	Analysis Date: **9/23/2022**	SeqNo: **3266356** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0021	0.0030	0.002000	0	106	50	150			J
Beryllium	0.0019	0.0020	0.002000	0	93.0	50	150			J
Cadmium	0.0019	0.0020	0.002000	0	95.5	50	150			J
Chromium	0.0055	0.0060	0.006000	0	91.6	50	150			J
Cobalt	0.0063	0.0060	0.006000	0	105	50	150			
Silver	0.0050	0.0050	0.005000	0	99.8	50	150			J
Vanadium	0.0093	0.050	0.01000	0	92.6	50	150			J
Zinc	0.0097	0.010	0.01000	0	97.0	50	150			J

Sample ID: **LCS-70359**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **70359**	RunNo: **91277**
Prep Date: **9/22/2022**	Analysis Date: **9/23/2022**	SeqNo: **3266357** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0030	0.5000	0	96.3	85	115			
Beryllium	0.49	0.0020	0.5000	0	98.5	85	115			
Cadmium	0.48	0.0020	0.5000	0	95.4	85	115			
Chromium	0.48	0.0060	0.5000	0	97.0	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.2	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			
Vanadium	0.49	0.050	0.5000	0	97.4	85	115			
Zinc	0.47	0.010	0.5000	0	93.4	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209A41**

04-Nov-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70359**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **70359**	RunNo: **91312**
Prep Date: **9/22/2022**	Analysis Date: **9/26/2022**	SeqNo: **3268088** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nickel	ND	0.010								

Sample ID: **LCSLL-70359**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **70359**	RunNo: **91312**
Prep Date: **9/22/2022**	Analysis Date: **9/26/2022**	SeqNo: **3268089** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nickel	0.0044	0.010	0.005000	0	87.9	50	150			J

Sample ID: **LCS-70359**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **70359**	RunNo: **91312**
Prep Date: **9/22/2022**	Analysis Date: **9/26/2022**	SeqNo: **3268090** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nickel	0.48	0.010	0.5000	0	95.7	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209A41**

04-Nov-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-B**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B91392**	RunNo: **91392**
Prep Date:	Analysis Date: **9/28/2022**	SeqNo: **3271802** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS-B**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B91392**	RunNo: **91392**
Prep Date:	Analysis Date: **9/28/2022**	SeqNo: **3271803** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0020	0.0020	0.002000	0	101	50	150			
Beryllium	0.0022	0.0020	0.002000	0	111	50	150			
Cadmium	0.0026	0.0020	0.002000	0	128	50	150			
Chromium	0.0062	0.0060	0.006000	0	103	50	150			
Cobalt	0.0061	0.0060	0.006000	0	101	50	150			
Nickel	0.0058	0.010	0.005000	0	115	50	150			J
Vanadium	0.011	0.050	0.01000	0	111	50	150			J
Zinc	0.010	0.010	0.01000	0	101	50	150			

Sample ID: **LCS-B**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B91392**	RunNo: **91392**
Prep Date:	Analysis Date: **9/28/2022**	SeqNo: **3271810** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	98.1	85	115			
Beryllium	0.51	0.0020	0.5000	0	101	85	115			
Cadmium	0.50	0.0020	0.5000	0	100	85	115			
Chromium	0.49	0.0060	0.5000	0	99.0	85	115			
Cobalt	0.49	0.0060	0.5000	0	97.1	85	115			
Nickel	0.49	0.010	0.5000	0	97.4	85	115			
Vanadium	0.50	0.050	0.5000	0	101	85	115			
Zinc	0.50	0.010	0.5000	0	99.2	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209A41**

04-Nov-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-A**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A91423**	RunNo: **91423**
Prep Date:	Analysis Date: **9/29/2022**	SeqNo: **3273040** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	ND	0.0050								

Sample ID: **LLLCS-A**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A91423**	RunNo: **91423**
Prep Date:	Analysis Date: **9/29/2022**	SeqNo: **3273041** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.0053	0.0050	0.005000	0	107	50	150			

Sample ID: **LCS-A**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A91423**	RunNo: **91423**
Prep Date:	Analysis Date: **9/29/2022**	SeqNo: **3273042** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.099	0.0050	0.1000	0	99.1	85	115			

Sample ID: **2209A41-012EMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **DUP 9-20-22**	Batch ID: **A91423**	RunNo: **91423**
Prep Date:	Analysis Date: **9/29/2022**	SeqNo: **3273073** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.095	0.0050	0.1000	0.001612	92.9	70	130			

Sample ID: **2209A41-012EMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **DUP 9-20-22**	Batch ID: **A91423**	RunNo: **91423**
Prep Date:	Analysis Date: **9/29/2022**	SeqNo: **3273075** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.096	0.0050	0.1000	0.001612	94.7	70	130	1.81	20	

Sample ID: **MB-A**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A91594**	RunNo: **91594**
Prep Date:	Analysis Date: **10/5/2022**	SeqNo: **3281370** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	ND	0.0050								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209A41**

04-Nov-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **LLLCS-A**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A91594**	RunNo: **91594**
Prep Date:	Analysis Date: **10/5/2022**	SeqNo: **3281371** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.0049	0.0050	0.005000	0	97.4	50	150			J

Sample ID: **LCS-A**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A91594**	RunNo: **91594**
Prep Date:	Analysis Date: **10/5/2022**	SeqNo: **3281372** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.099	0.0050	0.1000	0	99.1	85	115			

Sample ID: **2209A41-001EMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB-09-20-22**	Batch ID: **A91594**	RunNo: **91594**
Prep Date:	Analysis Date: **10/5/2022**	SeqNo: **3281374** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.094	0.0050	0.1000	0	93.6	70	130			

Sample ID: **2209A41-001EMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB-09-20-22**	Batch ID: **A91594**	RunNo: **91594**
Prep Date:	Analysis Date: **10/5/2022**	SeqNo: **3281375** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.094	0.0050	0.1000	0	93.8	70	130	0.161	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209A41**

04-Nov-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70359**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **70359**	RunNo: **91299**
Prep Date: **9/22/2022**	Analysis Date: **9/26/2022**	SeqNo: **3267421** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **MSLCSLL-70359**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **70359**	RunNo: **91299**
Prep Date: **9/22/2022**	Analysis Date: **9/26/2022**	SeqNo: **3267422** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0012	0.0010	0.001000	0	118	50	150			
Arsenic	0.00093	0.0010	0.001000	0	92.8	50	150			J
Lead	0.00055	0.00050	0.0005000	0	109	50	150			
Selenium	0.00098	0.0010	0.001000	0	97.6	50	150			J

Sample ID: **MSLCS-70359**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **70359**	RunNo: **91299**
Prep Date: **9/22/2022**	Analysis Date: **9/26/2022**	SeqNo: **3267423** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	101	85	115			
Arsenic	0.024	0.0010	0.02500	0	97.7	85	115			
Lead	0.013	0.00050	0.01250	0	104	85	115			
Selenium	0.026	0.0010	0.02500	0	103	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209A41**

04-Nov-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B91237**	RunNo: **91237**
Prep Date:	Analysis Date: **9/22/2022**	SeqNo: **3264881** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B91237**	RunNo: **91237**
Prep Date:	Analysis Date: **9/22/2022**	SeqNo: **3264882** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00097	0.0010	0.001000	0	96.7	50	150			J
Arsenic	0.0010	0.0010	0.001000	0	102	50	150			
Lead	0.00055	0.00050	0.0005000	0	110	50	150			
Selenium	0.00098	0.0010	0.001000	0	97.6	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B91237**	RunNo: **91237**
Prep Date:	Analysis Date: **9/22/2022**	SeqNo: **3264883** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	102	85	115			
Arsenic	0.026	0.0010	0.02500	0	104	85	115			
Lead	0.013	0.00050	0.01250	0	102	85	115			
Selenium	0.025	0.0010	0.02500	0	99.0	85	115			

Sample ID: **2209A41-001EMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **EB-09-20-22**	Batch ID: **B91237**	RunNo: **91237**
Prep Date:	Analysis Date: **9/22/2022**	SeqNo: **3264908** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	98.5	70	130			
Arsenic	0.026	0.0010	0.02500	0	105	70	130			
Lead	0.012	0.00050	0.01250	0	97.5	70	130			
Selenium	0.025	0.0010	0.02500	0	99.9	70	130			

Sample ID: **2209A41-001EMSDL**	SampType: **MSD**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **EB-09-20-22**	Batch ID: **B91237**	RunNo: **91237**
Prep Date:	Analysis Date: **9/22/2022**	SeqNo: **3264909** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209A41**

04-Nov-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **2209A41-001EMSDL** SampType: **MSD** TestCode: **EPA 200.8: Dissolved Metals**

Client ID: **EB-09-20-22** Batch ID: **B91237** RunNo: **91237**

Prep Date: Analysis Date: **9/22/2022** SeqNo: **3264909** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	99.0	70	130	0.535	20	
Arsenic	0.026	0.0010	0.02500	0	104	70	130	0.455	20	
Lead	0.012	0.00050	0.01250	0	97.9	70	130	0.426	20	
Selenium	0.027	0.0010	0.02500	0	108	70	130	7.47	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209A41**

04-Nov-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70390**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **PBW**	Batch ID: **70390**	RunNo: **91309**							
Prep Date: **9/26/2022**	Analysis Date: **9/26/2022**	SeqNo: **3267752**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-70390**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **BatchQC**	Batch ID: **70390**	RunNo: **91309**							
Prep Date: **9/26/2022**	Analysis Date: **9/26/2022**	SeqNo: **3267753**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00013	0.00020	0.0001500	0	86.7	50	150			J

Sample ID: **LCS-70390**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **LCSW**	Batch ID: **70390**	RunNo: **91309**							
Prep Date: **9/26/2022**	Analysis Date: **9/26/2022**	SeqNo: **3267754**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	101	85	115			

Sample ID: **2209A41-010DMS**	SampType: **MS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **OW-67**	Batch ID: **70390**	RunNo: **91309**							
Prep Date: **9/26/2022**	Analysis Date: **9/26/2022**	SeqNo: **3267816**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0047	0.0010	0.005000	0	94.2	75	125			

Sample ID: **2209A41-010DMSD**	SampType: **MSD**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **OW-67**	Batch ID: **70390**	RunNo: **91309**							
Prep Date: **9/26/2022**	Analysis Date: **9/26/2022**	SeqNo: **3267817**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0042	0.0010	0.005000	0	83.9	75	125	11.5	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209A41**

04-Nov-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **mb-70321**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **70321**	RunNo: **91221**
Prep Date: **9/22/2022**	Analysis Date: **9/22/2022**	SeqNo: **3265488** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **mb-70321**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **70321**	RunNo: **91221**
Prep Date: **9/22/2022**	Analysis Date: **9/22/2022**	SeqNo: **3265489** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **lcs-70321**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW**	Batch ID: **70321**	RunNo: **91221**
Prep Date: **9/22/2022**	Analysis Date: **9/22/2022**	SeqNo: **3265491** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.097	0.010	0.1000	0	96.8	70	130			

Sample ID: **lcsd-70321**	SampType: **LCSD**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSS02**	Batch ID: **70321**	RunNo: **91221**
Prep Date: **9/22/2022**	Analysis Date: **9/22/2022**	SeqNo: **3265492** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.094	0.010	0.1000	0	94.2	70	130	2.71	20	

Sample ID: **2209a41-012bms**	SampType: **MS**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **DUP 9-20-22**	Batch ID: **70321**	RunNo: **91221**
Prep Date: **9/22/2022**	Analysis Date: **9/22/2022**	SeqNo: **3265625** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.065	0.0094	0.09383	0	69.5	65	135			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209A41**

04-Nov-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70323**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **PBW**	Batch ID: **70323**	RunNo: **91330**							
Prep Date: **9/21/2022**	Analysis Date: **9/26/2022**	SeqNo: **3269062**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.021	0.064								J
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.042		0.03750		112	42.2	138			

Sample ID: **LCS-70323**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSW**	Batch ID: **70323**	RunNo: **91330**							
Prep Date: **9/21/2022**	Analysis Date: **9/26/2022**	SeqNo: **3269063**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.12	0.064	0.1875	0	64.3	31.7	75.4			
Surr: DNOP	0.020		0.01875		105	42.2	138			

Sample ID: **LCSD-70323**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSS02**	Batch ID: **70323**	RunNo: **91330**							
Prep Date: **9/21/2022**	Analysis Date: **9/26/2022**	SeqNo: **3269064**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.11	0.064	0.1875	0	57.3	31.7	75.4	11.4	20	
Surr: DNOP	0.018		0.01875		93.7	42.2	138	0	0	

Sample ID: **MB-70376**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **PBW**	Batch ID: **70376**	RunNo: **91332**							
Prep Date: **9/23/2022**	Analysis Date: **9/27/2022**	SeqNo: **3270736**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.025	0.064								J
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.037		0.03750		99.2	42.2	138			

Sample ID: **LCS-70376**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSW**	Batch ID: **70376**	RunNo: **91332**							
Prep Date: **9/23/2022**	Analysis Date: **9/27/2022**	SeqNo: **3270740**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.15	0.064	0.1875	0	77.7	31.7	75.4			S
Surr: DNOP	0.019		0.01875		100	42.2	138			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209A41**

04-Nov-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **LCSD-70376**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02**	Batch ID: **70376**	RunNo: **91332**
Prep Date: **9/23/2022**	Analysis Date: **9/27/2022**	SeqNo: **3270743** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.14	0.064	0.1875	0	76.9	31.7	75.4	0.242	20	S
Surr: DNOP	0.018		0.01875		95.9	42.2	138	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209A41**

04-Nov-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **R91291**	RunNo: **91291**
Prep Date:	Analysis Date: **9/23/2022**	SeqNo: **3266691** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.49	0.050	0.5000	0	97.2	80	120			
Surr: BFB	43		20.00		217	70	130			S

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **R91291**	RunNo: **91291**
Prep Date:	Analysis Date: **9/23/2022**	SeqNo: **3266692** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	21		20.00		104	70	130			

Sample ID: **2209a41-003a ms**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **OW-63**	Batch ID: **R91291**	RunNo: **91291**
Prep Date:	Analysis Date: **9/23/2022**	SeqNo: **3266703** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	52	2.5	25.00	26.30	104	70	130			
Surr: BFB	2300		1000		230	70	130			S

Sample ID: **2209A41-003A MSD**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **OW-63**	Batch ID: **R91291**	RunNo: **91291**
Prep Date:	Analysis Date: **9/23/2022**	SeqNo: **3266704** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	49	2.5	25.00	26.30	91.1	70	130	6.47	20	
Surr: BFB	2300		1000		226	70	130	0	0	S

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **A91300**	RunNo: **91300**
Prep Date:	Analysis Date: **9/26/2022**	SeqNo: **3268135** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.48	0.050	0.5000	0	96.6	80	120			
Surr: BFB	43		20.00		214	70	130			S

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **A91300**	RunNo: **91300**
Prep Date:	Analysis Date: **9/26/2022**	SeqNo: **3268136** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- E Above Quantitation Range/Estimated Value
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- PQL Practical Quanitative Limit
- RL Reporting Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209A41**
04-Nov-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **mb**	SampType: **MBLK**			TestCode: **EPA Method 8015D: Gasoline Range**						
Client ID: **PBW**	Batch ID: **A91300**			RunNo: **91300**						
Prep Date:	Analysis Date: **9/26/2022**			SeqNo: **3268136**		Units: **mg/L**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	21		20.00		107	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209A41**

04-Nov-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R91223**	RunNo: **91223**
Prep Date:	Analysis Date: **9/22/2022**	SeqNo: **3264499** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	107	70	130			
Toluene	20	1.0	20.00	0	98.6	70	130			
Chlorobenzene	20	1.0	20.00	0	101	70	130			
1,1-Dichloroethene	19	1.0	20.00	0	95.2	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	102	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		104	70	130			
Surr: 4-Bromofluorobenzene	9.3		10.00		92.9	70	130			
Surr: Dibromofluoromethane	11		10.00		105	70	130			
Surr: Toluene-d8	8.7		10.00		87.4	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R91223**	RunNo: **91223**
Prep Date:	Analysis Date: **9/22/2022**	SeqNo: **3264500** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209A41**

04-Nov-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R91223**	RunNo: **91223**
Prep Date:	Analysis Date: **9/22/2022**	SeqNo: **3264500** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	8.9		10.00		89.2	70	130			
Surr: Dibromofluoromethane	10		10.00		103	70	130			
Surr: Toluene-d8	8.9		10.00		89.3	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209A41**
04-Nov-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70340**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **70340**	RunNo: **91381**
Prep Date: **9/22/2022**	Analysis Date: **9/28/2022**	SeqNo: **3271745** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Anthracene	ND	10								
Benz(a)anthracene	ND	5.0								
Benzo(b)fluoranthene	ND	10								
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	10								
2,4-Dinitrophenol	ND	20								
Fluoranthene	ND	10								
Fluorene	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
1-Methylnaphthalene	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
Naphthalene	ND	5.0								
Phenanthrene	ND	10								
Phenol	ND	20								
Pyrene	ND	10								
Pyridine	ND	40								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	85		200.0		42.5	15	84.5			
Surr: Phenol-d5	67		200.0		33.3	15	67			
Surr: 2,4,6-Tribromophenol	93		200.0		46.5	15	108			
Surr: Nitrobenzene-d5	51		100.0		50.7	16.8	112			
Surr: 2-Fluorobiphenyl	49		100.0		49.1	15	101			
Surr: 4-Terphenyl-d14	68		100.0		68.0	34.4	134			

Sample ID: **LCS-70340**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **70340**	RunNo: **91381**
Prep Date: **9/22/2022**	Analysis Date: **9/28/2022**	SeqNo: **3271746** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209A41**

04-Nov-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **LCS-70340**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **70340**	RunNo: **91381**
Prep Date: **9/22/2022**	Analysis Date: **9/28/2022**	SeqNo: **3271746** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	60	10	100.0	0	60.0	21.3	104			
1,4-Dichlorobenzene	52	5.0	100.0	0	52.5	15	89.8			
Phenol	77	20	200.0	0	38.3	17	61.1			
Pyrene	71	10	100.0	0	71.3	61	123			
Surr: 2-Fluorophenol	90		200.0		44.9	15	84.5			
Surr: Phenol-d5	70		200.0		35.0	15	67			
Surr: 2,4,6-Tribromophenol	110		200.0		56.8	15	108			
Surr: Nitrobenzene-d5	56		100.0		56.5	16.8	112			
Surr: 2-Fluorobiphenyl	56		100.0		56.3	15	101			
Surr: 4-Terphenyl-d14	73		100.0		72.5	34.4	134			

Sample ID: **LCSD-70340**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **70340**	RunNo: **91381**
Prep Date: **9/22/2022**	Analysis Date: **9/28/2022**	SeqNo: **3271747** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	56	10	100.0	0	55.6	21.3	104	7.66	45.3	
1,4-Dichlorobenzene	51	5.0	100.0	0	51.1	15	89.8	2.61	39.6	
Phenol	72	20	200.0	0	35.9	17	61.1	6.42	42.5	
Pyrene	65	10	100.0	0	65.3	61	123	8.68	11.8	
Surr: 2-Fluorophenol	85		200.0		42.7	15	84.5	0	0	
Surr: Phenol-d5	66		200.0		33.0	15	67	0	0	
Surr: 2,4,6-Tribromophenol	110		200.0		53.8	15	108	0	0	
Surr: Nitrobenzene-d5	59		100.0		59.0	16.8	112	0	0	
Surr: 2-Fluorobiphenyl	55		100.0		55.5	15	101	0	0	
Surr: 4-Terphenyl-d14	72		100.0		72.3	34.4	134	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209A41**

04-Nov-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **mb-70340**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **70340**	RunNo: **91314**
Prep Date: **9/22/2022**	Analysis Date: **9/26/2022**	SeqNo: **3268174** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.30								
1-Methylnaphthalene	ND	0.30								
2-Methylnaphthalene	ND	0.30								
Acenaphthene	ND	0.30								
Fluorene	ND	0.30								
Phenanthrene	ND	0.30								
Anthracene	ND	0.30								
Fluoranthene	ND	0.30								
Pyrene	ND	1.0								
Benz(a)anthracene	ND	0.30								
Chrysene	ND	0.30								
Benzo(b)fluoranthene	ND	0.30								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	50		100.0		49.7	31.6	100			
Surr: 2,4,6-Tribromophenol	63		200.0		31.5	22	101			
Surr: 2-Fluorobiphenyl	50		100.0		49.9	26.7	90.1			
Surr: 4-Terphenyl-d14	64		100.0		64.3	72.3	147			S

Sample ID: **LCS-70340 LF**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **70340**	RunNo: **91314**
Prep Date: **9/22/2022**	Analysis Date: **9/26/2022**	SeqNo: **3268175** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.90	0.10	2.000	0	45.0	15	60.5			
Naphthalene	1.4	0.30	2.000	0	70.0	15	78.3			
1-Methylnaphthalene	1.4	0.30	2.000	0	69.0	15	79.6			
2-Methylnaphthalene	1.4	0.30	2.000	0	68.0	15	78.6			
Acenaphthene	1.6	0.30	2.000	0	78.0	15	92			
Fluorene	1.6	0.30	2.000	0	81.0	15	96			
Phenanthrene	1.7	0.30	2.000	0	85.0	21	103			
Anthracene	1.7	0.30	2.000	0	86.0	21.1	106			
Fluoranthene	1.8	0.30	2.000	0	89.0	32.8	119			
Pyrene	1.7	1.0	2.000	0	87.0	34.1	110			
Benz(a)anthracene	1.8	0.30	2.000	0	92.0	32	132			
Chrysene	1.7	0.30	2.000	0	87.0	31.3	112			
Benzo(b)fluoranthene	1.9	0.30	2.000	0	93.0	34.1	119			
Indeno(1,2,3-cd)pyrene	2.1	0.30	2.000	0	104	24.7	152			
Surr: Nitrobenzene-d5	68		100.0		68.1	31.6	100			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209A41**

04-Nov-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **LCS-70340 LF**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**							
Client ID: **LCSW**	Batch ID: **70340**	RunNo: **91314**							
Prep Date: **9/22/2022**	Analysis Date: **9/26/2022**	SeqNo: **3268175**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	78		200.0		38.9	22	101			
Surr: 2-Fluorobiphenyl	64		100.0		64.2	26.7	90.1			
Surr: 4-Terphenyl-d14	64		100.0		63.9	72.3	147			S

Sample ID: **LCSD-70340 LF**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**							
Client ID: **LCSS02**	Batch ID: **70340**	RunNo: **91314**							
Prep Date: **9/22/2022**	Analysis Date: **9/26/2022**	SeqNo: **3268176**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.90	0.10	2.000	0	45.0	15	60.5	0	29.7	
Naphthalene	1.4	0.30	2.000	0	70.0	15	78.3	0	31.7	
1-Methylnaphthalene	1.4	0.30	2.000	0	69.0	15	79.6	0	31.4	
2-Methylnaphthalene	1.4	0.30	2.000	0	68.0	15	78.6	0	30.5	
Acenaphthene	1.5	0.30	2.000	0	77.0	15	92	1.29	30.5	
Fluorene	1.6	0.30	2.000	0	80.0	15	96	1.24	25.1	
Phenanthrene	1.7	0.30	2.000	0	84.0	21	103	1.18	26.4	
Anthracene	1.7	0.30	2.000	0	86.0	21.1	106	0	14.4	
Fluoranthene	1.7	0.30	2.000	0	87.0	32.8	119	2.27	14.8	
Pyrene	1.7	1.0	2.000	0	85.0	34.1	110	2.33	19.2	
Benz(a)anthracene	1.8	0.30	2.000	0	90.0	32	132	2.20	29.3	
Chrysene	1.7	0.30	2.000	0	85.0	31.3	112	2.33	19	
Benzo(b)fluoranthene	1.8	0.30	2.000	0	91.0	34.1	119	2.17	31.6	
Indeno(1,2,3-cd)pyrene	2.1	0.30	2.000	0	104	24.7	152	0	21.3	
Surr: Nitrobenzene-d5	70		100.0		69.8	31.6	100	0	0	
Surr: 2,4,6-Tribromophenol	80		200.0		39.8	22	101	0	0	
Surr: 2-Fluorobiphenyl	65		100.0		65.2	26.7	90.1	0	0	
Surr: 4-Terphenyl-d14	65		100.0		65.0	72.3	147	0	0	S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **Marathon** Work Order Number: **2209A41** RcptNo: 1

Received By: **Cheyenne Cason** **9/21/2022 7:30:00 AM** Chel

Completed By: **Cheyenne Cason** **9/21/2022 8:48:25 AM** Chel

Reviewed By: JR 9.21.22

Chain of Custody

		Yes	No	Not Present
1.	Is Chain of Custody complete?	☑	☐	☐
2.	How was the sample delivered?	Courier		

Log In

		Yes	No	NA
3.	Was an attempt made to cool the samples?	☑	☐	☐
4.	Were all samples received at a temperature of >0° C to 6.0°C	☑	☐	☐
5.	Sample(s) in proper container(s)?	☑	☐	
6.	Sufficient sample volume for indicated test(s)?	☑	☐	
7.	Are samples (except VOA and ONG) properly preserved?	☑	☐	
8.	Was preserved added to bottles?	☑	☑	☐
9.	Received at least 1 vial with headspace <1/4" for AQ VOA?	☑	☐	☐
10.	Were any sample containers received broken?	☐	☑	
11.	Does paperwork match bottle labels? (Note discrepancies on chain of custody)	☑	☐	
12.	Are matrices correctly identified on Chain of Custody?	☑	☐	
13.	Is it clear what analyses were requested?	☑	☐	
14.	Were all holding times able to be met? (If no, notify customer for authorization.)	☑	☐	

JR 9/21/22

# of preserved bottles checked for pH: 20 10 (<2 or >12 unless noted)

Adjusted? yes

Checked by: JR 9/21/22

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks: 0.5ml of HNO3 was added to samples 012D, 008D, 006D, 004D, for pH<2. JR 9/21/22.

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.4	Good	Yes			
2	3.1	Good	Yes			
3	3.3	Good	Yes			
4	4.0	Good	Yes			

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **Marathon** Work Order Number: **2209A41** RcptNo: 1

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
5	4.3	Good	Yes			
6	3.3	Good	Yes			

Released to Imaging: 4/21/2023 9:40:28 AM
Received by OCD: 4/21/2023 9:21:57 AM

Chain-of-Custody Record

t: Marathon Gallup Refinery

ng Address: 92 Giant Crossing Road
Jamestown, NM,87347

e: 808-640-1823

d Fax#:

Package:
ard ☐ Level 4 (Full Validation)

dation: ☐ Az Compliance
LAC ☐ Other
D (Type)

Turn-Around Time:
X Standard Rush

Project Name:
2022 GW Sampling 3rd Quarter

Project #: 697-080-001

Project Manager:
Lesli Alexander/Mackensie Swift

Sampler:
On Ice: ☑ Yes ☐ No
# of Coolers: 6
Cooler Temp(including CF): See Checklist

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2209A411	See Analyte List	8260B: VOC	8270C: SVOC	8270C SIM: PAH, 1,4 Dioxane	8015: TPH GRO/DRO/MRO	E200.7: Metals	E200.7: Dissolved Metals	E245.1 Mercury	E504.1: EDB	E335.4: Cyanide Subbed		537.1: PFAS	SM 5201B: BOD	410.4: COD	SM9223B E. Coli
9/20 8:00		EB-9-20-22	13		001	X	X	X	X	X	X	X	X	X	X					
9/20 12:40		EB-9-20-2022	2		002												X			
9/20 10:15		OW-63	15		003	X	X	X	X	X	X	X	X	X	X		X			
9/20 10:45		OW-58A	13		004	X	X	X	X	X	X	X	X	X	X					
9/20 11:05		OW-58	13		005	X	X	X	X	X	X	X	X	X	X					
9/20 11:30		OW-64	13		006	X	X	X	X	X	X	X	X	X	X					
9/20 11:40		STP-1-NW	13		007	X	X	X	X	X	X	X	X	X	X					
9/20 11:55		OW-60	13		008	X	X	X	X	X	X	X	X	X	X					
9/20 12:10		OW-68	13		009	X	X	X	X	X	X	X	X	X	X					
9/20 12:20		OW-67	13		010	X	X	X	X	X	X	X	X	X	X					
9/20 12:20		FB-9-20-22	3		011	X	X	X												
9/20 —		DUP-9-20-22	13		012	X	X	X	X	X	X	X	X	X	X					

Time:	Relinquished by:	Received by:	Via:	Date	Time
9/20 1:00	Hilario Tapia	CMC	Courier	9/21/22	0730
Time:	Relinquished by:	Received by:	Via:	Date	Time

Trip Blank - 013

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 24, 2022

Lesli Alexander

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX (505) 632-3911

RE: 2022 GW Sampling 3rd Quarter OrderNo.: 2209E92

Dear Lesli Alexander:

Hall Environmental Analysis Laboratory received 13 sample(s) on 9/28/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **2209E92**
Date: **10/24/2022**

CLIENT: Marathon
Project: 2022 GW Sampling 3rd Quarter

Analytical Notes Regarding this Workorder are listed below:

"S" flagged surrogates/spikes denote that the analyte recovery was outstide of the standard limits.

Analytical Notes Regarding EPA Method 8270 SIMS:
1,4-Dioxane is "E" flagged for sample MKTF-32 becuase the result was slightly above the calibration range.

Analytical Notes Regarding EPA Method 8015DRO:
The LCS had slighly elevated recovry. The LCSD had acceptable recoveries.

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-27-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 8:00:00 AM
Lab ID: 2209E92-001A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	9/29/2022 9:38:00 PM	A91419
Surr: BFB	104	0	70-130		%Rec	1	9/29/2022 9:38:00 PM	A91419
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	9/30/2022 4:45:48 PM	B91469
Toluene	ND	0.20	1.0		µg/L	1	9/30/2022 4:45:48 PM	B91469
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/30/2022 4:45:48 PM	B91469
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/30/2022 4:45:48 PM	B91469
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/30/2022 4:45:48 PM	B91469
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/30/2022 4:45:48 PM	B91469
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/30/2022 4:45:48 PM	B91469
Acetone	ND	2.5	10		µg/L	1	9/30/2022 4:45:48 PM	B91469
Bromomethane	ND	0.85	3.0		µg/L	1	9/30/2022 4:45:48 PM	B91469
2-Butanone	ND	2.0	10		µg/L	1	9/30/2022 4:45:48 PM	B91469
Carbon disulfide	ND	0.59	10		µg/L	1	9/30/2022 4:45:48 PM	B91469
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/30/2022 4:45:48 PM	B91469
Chloroform	ND	0.13	1.0		µg/L	1	9/30/2022 4:45:48 PM	B91469
Chloromethane	ND	0.41	3.0		µg/L	1	9/30/2022 4:45:48 PM	B91469
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/30/2022 4:45:48 PM	B91469
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/30/2022 4:45:48 PM	B91469
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/30/2022 4:45:48 PM	B91469
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/30/2022 4:45:48 PM	B91469
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/30/2022 4:45:48 PM	B91469
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/30/2022 4:45:48 PM	B91469
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/30/2022 4:45:48 PM	B91469
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/30/2022 4:45:48 PM	B91469
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/30/2022 4:45:48 PM	B91469
Styrene	ND	0.14	1.0		µg/L	1	9/30/2022 4:45:48 PM	B91469
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/30/2022 4:45:48 PM	B91469
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/30/2022 4:45:48 PM	B91469
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/30/2022 4:45:48 PM	B91469
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/30/2022 4:45:48 PM	B91469
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/30/2022 4:45:48 PM	B91469
Surr: 1,2-Dichloroethane-d4	114	0	70-130		%Rec	1	9/30/2022 4:45:48 PM	B91469
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	9/30/2022 4:45:48 PM	B91469
Surr: Dibromofluoromethane	113	0	70-130		%Rec	1	9/30/2022 4:45:48 PM	B91469
Surr: Toluene-d8	101	0	70-130		%Rec	1	9/30/2022 4:45:48 PM	B91469

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Project: 2022 GW Sampling 3rd Quarter
Lab ID: 2209E92-001B

Client Sample ID: EB-09-27-22
Collection Date: 9/27/2022 8:00:00 AM
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	10/4/2022 12:26:26 AM	70493

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-27-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 8:00:00 AM
Lab ID: 2209E92-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **mb**	
Diesel Range Organics (DRO)	0.039	0.016	0.064	J	mg/L	1	9/29/2022 5:52:10 PM	70480
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	9/29/2022 5:52:10 PM	70480
Surr: DNOP	93.4	0	42.2-138		%Rec	1	9/29/2022 5:52:10 PM	70480
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	10/11/2022 2:48:04 PM	70506
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	10/11/2022 2:48:04 PM	70506
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	10/11/2022 2:48:04 PM	70506
Di-n-octyl phthalate	ND	12	20		µg/L	1	10/11/2022 2:48:04 PM	70506
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	10/11/2022 2:48:04 PM	70506
Diethyl phthalate	ND	6.0	10		µg/L	1	10/11/2022 2:48:04 PM	70506
Dimethyl phthalate	ND	6.0	10		µg/L	1	10/11/2022 2:48:04 PM	70506
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	10/11/2022 2:48:04 PM	70506
2,4-Dinitrophenol	ND	16	20		µg/L	1	10/11/2022 2:48:04 PM	70506
2-Methylphenol	ND	5.0	10		µg/L	1	10/11/2022 2:48:04 PM	70506
3+4-Methylphenol	ND	5.1	10		µg/L	1	10/11/2022 2:48:04 PM	70506
Phenol	ND	18	20		µg/L	1	10/11/2022 2:48:04 PM	70506
Pyridine	ND	14	40		µg/L	1	10/11/2022 2:48:04 PM	70506
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	10/11/2022 2:48:04 PM	70506
Surr: 2-Fluorophenol	39.2	0	15-84.5		%Rec	1	10/11/2022 2:48:04 PM	70506
Surr: Phenol-d5	29.2	0	15-67		%Rec	1	10/11/2022 2:48:04 PM	70506
Surr: 2,4,6-Tribromophenol	55.5	0	15-108		%Rec	1	10/11/2022 2:48:04 PM	70506
Surr: Nitrobenzene-d5	52.1	0	16.8-112		%Rec	1	10/11/2022 2:48:04 PM	70506
Surr: 2-Fluorobiphenyl	49.2	0	15-101		%Rec	1	10/11/2022 2:48:04 PM	70506
Surr: 4-Terphenyl-d14	70.0	0	34.4-134		%Rec	1	10/11/2022 2:48:04 PM	70506
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	10/3/2022 12:48:00 PM	70506
Naphthalene	ND	0.20	0.30		µg/L	1	10/3/2022 12:48:00 PM	70506
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	10/3/2022 12:48:00 PM	70506
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	10/3/2022 12:48:00 PM	70506
Acenaphthene	ND	0.14	0.30		µg/L	1	10/3/2022 12:48:00 PM	70506
Fluorene	ND	0.095	0.30		µg/L	1	10/3/2022 12:48:00 PM	70506
Phenanthrene	ND	0.16	0.30		µg/L	1	10/3/2022 12:48:00 PM	70506
Anthracene	ND	0.14	0.30		µg/L	1	10/3/2022 12:48:00 PM	70506
Fluoranthene	ND	0.14	0.30		µg/L	1	10/3/2022 12:48:00 PM	70506
Pyrene	ND	0.32	1.0		µg/L	1	10/3/2022 12:48:00 PM	70506
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	10/3/2022 12:48:00 PM	70506
Chrysene	ND	0.25	0.30		µg/L	1	10/3/2022 12:48:00 PM	70506
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	10/3/2022 12:48:00 PM	70506
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	10/3/2022 12:48:00 PM	70506

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-27-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 8:00:00 AM
Lab ID: 2209E92-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	45.9	0	15-108		%Rec	1	10/3/2022 12:48:00 PM	70506
Surr: 2-Fluorobiphenyl	39.4	0	15-107		%Rec	1	10/3/2022 12:48:00 PM	70506
Surr: 4-Terphenyl-d14	55.0	0	15-166		%Rec	1	10/3/2022 12:48:00 PM	70506

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-27-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 8:00:00 AM
Lab ID: 2209E92-001D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	ND	0.0016	0.0030		mg/L	1	9/29/2022 1:20:37 PM	70455
Beryllium	ND	0.00088	0.0020		mg/L	1	9/29/2022 1:20:37 PM	70455
Cadmium	ND	0.0018	0.0020		mg/L	1	9/29/2022 1:20:37 PM	70455
Chromium	ND	0.0020	0.0060		mg/L	1	9/29/2022 1:20:37 PM	70455
Cobalt	ND	0.0035	0.0060		mg/L	1	9/29/2022 1:20:37 PM	70455
Nickel	ND	0.0053	0.010		mg/L	1	10/3/2022 10:56:01 AM	70455
Silver	ND	0.0018	0.0050		mg/L	1	9/29/2022 1:20:37 PM	70455
Vanadium	ND	0.0035	0.050		mg/L	1	9/29/2022 1:20:37 PM	70455
Zinc	ND	0.0039	0.010		mg/L	1	10/3/2022 10:56:01 AM	70455
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/30/2022 1:49:46 PM	70455
Arsenic	ND	0.00013	0.0010		mg/L	1	9/30/2022 1:49:46 PM	70455
Lead	ND	0.000061	0.00050		mg/L	1	9/30/2022 1:49:46 PM	70455
Selenium	ND	0.00037	0.0010		mg/L	1	9/30/2022 1:49:46 PM	70455
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/29/2022 11:17:21 AM	70473

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-27-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 8:00:00 AM
Lab ID: 2209E92-001E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	ND	0.0011	0.0020		mg/L	1	10/4/2022 2:03:40 PM	A91551
Beryllium	ND	0.00088	0.0020		mg/L	1	10/4/2022 2:03:40 PM	A91551
Cadmium	ND	0.00098	0.0020		mg/L	1	10/4/2022 2:03:40 PM	A91551
Chromium	ND	0.0020	0.0060		mg/L	1	10/4/2022 2:03:40 PM	A91551
Cobalt	ND	0.0024	0.0060		mg/L	1	10/4/2022 2:03:40 PM	A91551
Nickel	ND	0.0033	0.010		mg/L	1	10/4/2022 2:03:40 PM	A91551
Silver	ND	0.0013	0.0050		mg/L	1	10/4/2022 2:03:40 PM	A91551
Vanadium	ND	0.0017	0.050		mg/L	1	10/4/2022 2:03:40 PM	A91551
Zinc	0.0077	0.0032	0.010	J	mg/L	1	10/4/2022 2:03:40 PM	A91551
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/29/2022 1:43:24 PM	B91411
Arsenic	ND	0.00012	0.0010		mg/L	1	9/29/2022 1:43:24 PM	B91411
Lead	ND	0.000057	0.00050		mg/L	1	9/29/2022 1:43:24 PM	B91411
Selenium	ND	0.00034	0.0010		mg/L	1	9/29/2022 1:43:24 PM	B91411
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/29/2022 11:19:29 AM	70473

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-1
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 8:35:00 AM
Lab ID: 2209E92-002A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	9/29/2022 9:57:00 PM	A91419
Surr: BFB	103	0	70-130		%Rec	1	9/29/2022 9:57:00 PM	A91419
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	9/30/2022 5:12:49 PM	B91469
Toluene	ND	0.20	1.0		µg/L	1	9/30/2022 5:12:49 PM	B91469
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/30/2022 5:12:49 PM	B91469
Methyl tert-butyl ether (MTBE)	2.7	0.39	1.0		µg/L	1	9/30/2022 5:12:49 PM	B91469
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/30/2022 5:12:49 PM	B91469
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/30/2022 5:12:49 PM	B91469
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/30/2022 5:12:49 PM	B91469
Acetone	ND	2.5	10		µg/L	1	9/30/2022 5:12:49 PM	B91469
Bromomethane	ND	0.85	3.0		µg/L	1	9/30/2022 5:12:49 PM	B91469
2-Butanone	ND	2.0	10		µg/L	1	9/30/2022 5:12:49 PM	B91469
Carbon disulfide	ND	0.59	10		µg/L	1	9/30/2022 5:12:49 PM	B91469
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/30/2022 5:12:49 PM	B91469
Chloroform	ND	0.13	1.0		µg/L	1	9/30/2022 5:12:49 PM	B91469
Chloromethane	ND	0.41	3.0		µg/L	1	9/30/2022 5:12:49 PM	B91469
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/30/2022 5:12:49 PM	B91469
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/30/2022 5:12:49 PM	B91469
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/30/2022 5:12:49 PM	B91469
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/30/2022 5:12:49 PM	B91469
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/30/2022 5:12:49 PM	B91469
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/30/2022 5:12:49 PM	B91469
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/30/2022 5:12:49 PM	B91469
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/30/2022 5:12:49 PM	B91469
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/30/2022 5:12:49 PM	B91469
Styrene	ND	0.14	1.0		µg/L	1	9/30/2022 5:12:49 PM	B91469
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/30/2022 5:12:49 PM	B91469
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/30/2022 5:12:49 PM	B91469
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/30/2022 5:12:49 PM	B91469
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/30/2022 5:12:49 PM	B91469
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/30/2022 5:12:49 PM	B91469
Surr: 1,2-Dichloroethane-d4	111	0	70-130		%Rec	1	9/30/2022 5:12:49 PM	B91469
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	9/30/2022 5:12:49 PM	B91469
Surr: Dibromofluoromethane	109	0	70-130		%Rec	1	9/30/2022 5:12:49 PM	B91469
Surr: Toluene-d8	102	0	70-130		%Rec	1	9/30/2022 5:12:49 PM	B91469

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-1
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 8:35:00 AM
Lab ID: 2209E92-002B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	10/4/2022 12:41:30 AM	70493

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-1
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 8:35:00 AM
Lab ID: 2209E92-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **mb**	
Diesel Range Organics (DRO)	0.031	0.016	0.064	J	mg/L	1	9/29/2022 6:16:28 PM	70480
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	9/29/2022 6:16:28 PM	70480
Surr: DNOP	94.9	0	42.2-138		%Rec	1	9/29/2022 6:16:28 PM	70480
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	10/11/2022 3:29:28 PM	70506
Bis(2-ethylhexyl)phthalate	9.0	8.4	10	J	µg/L	1	10/11/2022 3:29:28 PM	70506
Di-n-butyl phthalate	18	7.7	10		µg/L	1	10/11/2022 3:29:28 PM	70506
Di-n-octyl phthalate	ND	12	20		µg/L	1	10/11/2022 3:29:28 PM	70506
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	10/11/2022 3:29:28 PM	70506
Diethyl phthalate	ND	6.0	10		µg/L	1	10/11/2022 3:29:28 PM	70506
Dimethyl phthalate	ND	6.0	10		µg/L	1	10/11/2022 3:29:28 PM	70506
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	10/11/2022 3:29:28 PM	70506
2,4-Dinitrophenol	ND	16	20		µg/L	1	10/11/2022 3:29:28 PM	70506
2-Methylphenol	ND	5.0	10		µg/L	1	10/11/2022 3:29:28 PM	70506
3+4-Methylphenol	ND	5.1	10		µg/L	1	10/11/2022 3:29:28 PM	70506
Phenol	ND	18	20		µg/L	1	10/11/2022 3:29:28 PM	70506
Pyridine	ND	14	40		µg/L	1	10/11/2022 3:29:28 PM	70506
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	10/11/2022 3:29:28 PM	70506
Surr: 2-Fluorophenol	26.9	0	15-84.5		%Rec	1	10/11/2022 3:29:28 PM	70506
Surr: Phenol-d5	20.5	0	15-67		%Rec	1	10/11/2022 3:29:28 PM	70506
Surr: 2,4,6-Tribromophenol	44.7	0	15-108		%Rec	1	10/11/2022 3:29:28 PM	70506
Surr: Nitrobenzene-d5	35.6	0	16.8-112		%Rec	1	10/11/2022 3:29:28 PM	70506
Surr: 2-Fluorobiphenyl	36.2	0	15-101		%Rec	1	10/11/2022 3:29:28 PM	70506
Surr: 4-Terphenyl-d14	48.5	0	34.4-134		%Rec	1	10/11/2022 3:29:28 PM	70506
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	10/3/2022 1:32:00 PM	70506
Naphthalene	ND	0.20	0.30		µg/L	1	10/3/2022 1:32:00 PM	70506
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	10/3/2022 1:32:00 PM	70506
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	10/3/2022 1:32:00 PM	70506
Acenaphthene	ND	0.14	0.30		µg/L	1	10/3/2022 1:32:00 PM	70506
Fluorene	ND	0.095	0.30		µg/L	1	10/3/2022 1:32:00 PM	70506
Phenanthrene	ND	0.16	0.30		µg/L	1	10/3/2022 1:32:00 PM	70506
Anthracene	ND	0.14	0.30		µg/L	1	10/3/2022 1:32:00 PM	70506
Fluoranthene	ND	0.14	0.30		µg/L	1	10/3/2022 1:32:00 PM	70506
Pyrene	0.32	0.32	1.0	J	µg/L	1	10/3/2022 1:32:00 PM	70506
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	10/3/2022 1:32:00 PM	70506
Chrysene	ND	0.25	0.30		µg/L	1	10/3/2022 1:32:00 PM	70506
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	10/3/2022 1:32:00 PM	70506
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	10/3/2022 1:32:00 PM	70506

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-1
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 8:35:00 AM
Lab ID: 2209E92-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	30.3	0	15-108		%Rec	1	10/3/2022 1:32:00 PM	70506
Surr: 2-Fluorobiphenyl	28.3	0	15-107		%Rec	1	10/3/2022 1:32:00 PM	70506
Surr: 4-Terphenyl-d14	33.8	0	15-166		%Rec	1	10/3/2022 1:32:00 PM	70506

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-1
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 8:35:00 AM
Lab ID: 2209E92-002D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.041	0.0016	0.0030		mg/L	1	9/29/2022 1:25:20 PM	70455
Beryllium	ND	0.00088	0.0020		mg/L	1	9/29/2022 1:25:20 PM	70455
Cadmium	ND	0.0018	0.0020		mg/L	1	9/29/2022 1:25:20 PM	70455
Chromium	ND	0.0020	0.0060		mg/L	1	9/29/2022 1:25:20 PM	70455
Cobalt	ND	0.0035	0.0060		mg/L	1	9/29/2022 1:25:20 PM	70455
Nickel	ND	0.0053	0.010		mg/L	1	10/3/2022 10:57:37 AM	70455
Silver	ND	0.0018	0.0050		mg/L	1	9/29/2022 1:25:20 PM	70455
Vanadium	0.041	0.0035	0.050	J	mg/L	1	9/29/2022 1:25:20 PM	70455
Zinc	ND	0.0039	0.010		mg/L	1	10/3/2022 10:57:37 AM	70455
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/30/2022 1:52:12 PM	70455
Arsenic	0.00065	0.00013	0.0010	J	mg/L	1	9/30/2022 1:52:12 PM	70455
Lead	0.00014	0.000061	0.00050	J	mg/L	1	9/30/2022 1:52:12 PM	70455
Selenium	0.0020	0.00037	0.0010		mg/L	1	9/30/2022 1:52:12 PM	70455
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/29/2022 11:21:39 AM	70473

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-1
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 8:35:00 AM
Lab ID: 2209E92-002E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.041	0.0011	0.0020		mg/L	1	10/4/2022 2:14:35 PM	A91551
Beryllium	ND	0.00088	0.0020		mg/L	1	10/4/2022 2:14:35 PM	A91551
Cadmium	ND	0.00098	0.0020		mg/L	1	10/4/2022 2:14:35 PM	A91551
Chromium	ND	0.0020	0.0060		mg/L	1	10/4/2022 2:14:35 PM	A91551
Cobalt	ND	0.0024	0.0060		mg/L	1	10/4/2022 2:14:35 PM	A91551
Nickel	ND	0.0033	0.010		mg/L	1	10/4/2022 2:14:35 PM	A91551
Silver	ND	0.0013	0.0050		mg/L	1	10/4/2022 2:14:35 PM	A91551
Vanadium	0.036	0.0017	0.050	J	mg/L	1	10/4/2022 2:14:35 PM	A91551
Zinc	0.045	0.0032	0.010		mg/L	1	10/4/2022 2:14:35 PM	A91551
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/29/2022 1:46:05 PM	B91411
Arsenic	0.00060	0.00012	0.0010	J	mg/L	1	9/29/2022 1:46:05 PM	B91411
Lead	ND	0.000057	0.00050		mg/L	1	9/29/2022 1:46:05 PM	B91411
Selenium	0.0025	0.00034	0.0010		mg/L	1	10/3/2022 2:08:20 PM	B91488
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/29/2022 11:23:49 AM	70473

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-4B
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 9:20:00 AM
Lab ID: 2209E92-003A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	9/29/2022 10:17:00 PM	A91419
Surr: BFB	104	0	70-130		%Rec	1	9/29/2022 10:17:00 PM	A91419
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	9/30/2022 5:39:50 PM	B91469
Toluene	ND	0.20	1.0		µg/L	1	9/30/2022 5:39:50 PM	B91469
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/30/2022 5:39:50 PM	B91469
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/30/2022 5:39:50 PM	B91469
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/30/2022 5:39:50 PM	B91469
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/30/2022 5:39:50 PM	B91469
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/30/2022 5:39:50 PM	B91469
Acetone	ND	2.5	10		µg/L	1	9/30/2022 5:39:50 PM	B91469
Bromomethane	ND	0.85	3.0		µg/L	1	9/30/2022 5:39:50 PM	B91469
2-Butanone	ND	2.0	10		µg/L	1	9/30/2022 5:39:50 PM	B91469
Carbon disulfide	ND	0.59	10		µg/L	1	9/30/2022 5:39:50 PM	B91469
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/30/2022 5:39:50 PM	B91469
Chloroform	ND	0.13	1.0		µg/L	1	9/30/2022 5:39:50 PM	B91469
Chloromethane	ND	0.41	3.0		µg/L	1	9/30/2022 5:39:50 PM	B91469
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/30/2022 5:39:50 PM	B91469
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/30/2022 5:39:50 PM	B91469
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/30/2022 5:39:50 PM	B91469
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/30/2022 5:39:50 PM	B91469
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/30/2022 5:39:50 PM	B91469
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/30/2022 5:39:50 PM	B91469
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/30/2022 5:39:50 PM	B91469
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/30/2022 5:39:50 PM	B91469
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/30/2022 5:39:50 PM	B91469
Styrene	ND	0.14	1.0		µg/L	1	9/30/2022 5:39:50 PM	B91469
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/30/2022 5:39:50 PM	B91469
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/30/2022 5:39:50 PM	B91469
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/30/2022 5:39:50 PM	B91469
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/30/2022 5:39:50 PM	B91469
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/30/2022 5:39:50 PM	B91469
Surr: 1,2-Dichloroethane-d4	115	0	70-130		%Rec	1	9/30/2022 5:39:50 PM	B91469
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	9/30/2022 5:39:50 PM	B91469
Surr: Dibromofluoromethane	111	0	70-130		%Rec	1	9/30/2022 5:39:50 PM	B91469
Surr: Toluene-d8	97.9	0	70-130		%Rec	1	9/30/2022 5:39:50 PM	B91469

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-4B
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 9:20:00 AM
Lab ID: 2209E92-003B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	10/4/2022 1:11:41 AM	70493

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-4B
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 9:20:00 AM
Lab ID: 2209E92-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **mb**	
Diesel Range Organics (DRO)	0.041	0.016	0.064	J	mg/L	1	9/29/2022 6:40:46 PM	70480
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	9/29/2022 6:40:46 PM	70480
Surr: DNOP	99.2	0	42.2-138		%Rec	1	9/29/2022 6:40:46 PM	70480
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	10/11/2022 4:10:50 PM	70506
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	10/11/2022 4:10:50 PM	70506
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	10/11/2022 4:10:50 PM	70506
Di-n-octyl phthalate	ND	12	20		µg/L	1	10/11/2022 4:10:50 PM	70506
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	10/11/2022 4:10:50 PM	70506
Diethyl phthalate	ND	6.0	10		µg/L	1	10/11/2022 4:10:50 PM	70506
Dimethyl phthalate	ND	6.0	10		µg/L	1	10/11/2022 4:10:50 PM	70506
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	10/11/2022 4:10:50 PM	70506
2,4-Dinitrophenol	ND	16	20		µg/L	1	10/11/2022 4:10:50 PM	70506
2-Methylphenol	ND	5.0	10		µg/L	1	10/11/2022 4:10:50 PM	70506
3+4-Methylphenol	ND	5.1	10		µg/L	1	10/11/2022 4:10:50 PM	70506
Phenol	ND	18	20		µg/L	1	10/11/2022 4:10:50 PM	70506
Pyridine	ND	14	40		µg/L	1	10/11/2022 4:10:50 PM	70506
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	10/11/2022 4:10:50 PM	70506
Surr: 2-Fluorophenol	44.4	0	15-84.5		%Rec	1	10/11/2022 4:10:50 PM	70506
Surr: Phenol-d5	33.0	0	15-67		%Rec	1	10/11/2022 4:10:50 PM	70506
Surr: 2,4,6-Tribromophenol	71.8	0	15-108		%Rec	1	10/11/2022 4:10:50 PM	70506
Surr: Nitrobenzene-d5	56.5	0	16.8-112		%Rec	1	10/11/2022 4:10:50 PM	70506
Surr: 2-Fluorobiphenyl	54.1	0	15-101		%Rec	1	10/11/2022 4:10:50 PM	70506
Surr: 4-Terphenyl-d14	79.2	0	34.4-134		%Rec	1	10/11/2022 4:10:50 PM	70506
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	10/3/2022 2:17:00 PM	70506
Naphthalene	ND	0.20	0.30		µg/L	1	10/3/2022 2:17:00 PM	70506
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	10/3/2022 2:17:00 PM	70506
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	10/3/2022 2:17:00 PM	70506
Acenaphthene	ND	0.14	0.30		µg/L	1	10/3/2022 2:17:00 PM	70506
Fluorene	ND	0.095	0.30		µg/L	1	10/3/2022 2:17:00 PM	70506
Phenanthrene	ND	0.16	0.30		µg/L	1	10/3/2022 2:17:00 PM	70506
Anthracene	ND	0.14	0.30		µg/L	1	10/3/2022 2:17:00 PM	70506
Fluoranthene	ND	0.14	0.30		µg/L	1	10/3/2022 2:17:00 PM	70506
Pyrene	ND	0.32	1.0		µg/L	1	10/3/2022 2:17:00 PM	70506
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	10/3/2022 2:17:00 PM	70506
Chrysene	ND	0.25	0.30		µg/L	1	10/3/2022 2:17:00 PM	70506
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	10/3/2022 2:17:00 PM	70506
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	10/3/2022 2:17:00 PM	70506

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-4B
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 9:20:00 AM
Lab ID: 2209E92-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	50.2	0	15-108		%Rec	1	10/3/2022 2:17:00 PM	70506
Surr: 2-Fluorobiphenyl	43.9	0	15-107		%Rec	1	10/3/2022 2:17:00 PM	70506
Surr: 4-Terphenyl-d14	55.2	0	15-166		%Rec	1	10/3/2022 2:17:00 PM	70506

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-4B
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 9:20:00 AM
Lab ID: 2209E92-003D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.10	0.0016	0.0030		mg/L	1	9/29/2022 1:29:53 PM	70455
Beryllium	ND	0.00088	0.0020		mg/L	1	9/29/2022 1:29:53 PM	70455
Cadmium	ND	0.0018	0.0020		mg/L	1	9/29/2022 1:29:53 PM	70455
Chromium	0.021	0.0020	0.0060		mg/L	1	9/29/2022 1:29:53 PM	70455
Cobalt	ND	0.0035	0.0060		mg/L	1	9/29/2022 1:29:53 PM	70455
Nickel	0.0069	0.0053	0.010	J	mg/L	1	10/3/2022 10:59:11 AM	70455
Silver	ND	0.0018	0.0050		mg/L	1	9/29/2022 1:29:53 PM	70455
Vanadium	0.11	0.0035	0.050		mg/L	1	9/29/2022 1:29:53 PM	70455
Zinc	0.014	0.0039	0.010		mg/L	1	10/3/2022 10:59:11 AM	70455
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/30/2022 1:54:39 PM	70455
Arsenic	0.0099	0.00013	0.0010		mg/L	1	9/30/2022 1:54:39 PM	70455
Lead	0.0023	0.000061	0.00050		mg/L	1	9/30/2022 1:54:39 PM	70455
Selenium	0.00046	0.00037	0.0010	J	mg/L	1	9/30/2022 1:54:39 PM	70455
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/29/2022 11:25:59 AM	70473

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-4B
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 9:20:00 AM
Lab ID: 2209E92-003E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.041	0.0011	0.0020		mg/L	1	10/4/2022 2:18:49 PM	A91551
Beryllium	ND	0.00088	0.0020		mg/L	1	10/4/2022 2:18:49 PM	A91551
Cadmium	ND	0.00098	0.0020		mg/L	1	10/4/2022 2:18:49 PM	A91551
Chromium	ND	0.0020	0.0060		mg/L	1	10/4/2022 2:18:49 PM	A91551
Cobalt	ND	0.0024	0.0060		mg/L	1	10/4/2022 2:18:49 PM	A91551
Nickel	0.016	0.0033	0.010		mg/L	1	10/4/2022 2:18:49 PM	A91551
Silver	ND	0.0013	0.0050		mg/L	1	10/4/2022 2:18:49 PM	A91551
Vanadium	0.0094	0.0017	0.050	J	mg/L	1	10/4/2022 2:18:49 PM	A91551
Zinc	0.014	0.0032	0.010		mg/L	1	10/4/2022 2:18:49 PM	A91551
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/29/2022 1:48:46 PM	B91411
Arsenic	0.0062	0.00012	0.0010		mg/L	1	9/29/2022 1:48:46 PM	B91411
Lead	ND	0.000057	0.00050		mg/L	1	9/29/2022 1:48:46 PM	B91411
Selenium	ND	0.00034	0.0010		mg/L	1	9/29/2022 1:48:46 PM	B91411
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/29/2022 11:28:07 AM	70473

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5C
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 9:45:00 AM
Lab ID: 2209E92-004A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.023	0.0090	0.050	J	mg/L	1	9/29/2022 10:37:00 PM	A91419
Surr: BFB	103	0	70-130		%Rec	1	9/29/2022 10:37:00 PM	A91419
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	9/30/2022 6:06:51 PM	B91469
Toluene	ND	0.20	1.0		µg/L	1	9/30/2022 6:06:51 PM	B91469
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/30/2022 6:06:51 PM	B91469
Methyl tert-butyl ether (MTBE)	22	0.39	1.0		µg/L	1	9/30/2022 6:06:51 PM	B91469
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/30/2022 6:06:51 PM	B91469
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/30/2022 6:06:51 PM	B91469
1,2-Dichloroethane (EDC)	0.59	0.25	1.0	J	µg/L	1	9/30/2022 6:06:51 PM	B91469
Acetone	ND	2.5	10		µg/L	1	9/30/2022 6:06:51 PM	B91469
Bromomethane	ND	0.85	3.0		µg/L	1	9/30/2022 6:06:51 PM	B91469
2-Butanone	ND	2.0	10		µg/L	1	9/30/2022 6:06:51 PM	B91469
Carbon disulfide	ND	0.59	10		µg/L	1	9/30/2022 6:06:51 PM	B91469
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/30/2022 6:06:51 PM	B91469
Chloroform	ND	0.13	1.0		µg/L	1	9/30/2022 6:06:51 PM	B91469
Chloromethane	ND	0.41	3.0		µg/L	1	9/30/2022 6:06:51 PM	B91469
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/30/2022 6:06:51 PM	B91469
1,1-Dichloroethane	0.76	0.27	1.0	J	µg/L	1	9/30/2022 6:06:51 PM	B91469
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/30/2022 6:06:51 PM	B91469
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/30/2022 6:06:51 PM	B91469
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/30/2022 6:06:51 PM	B91469
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/30/2022 6:06:51 PM	B91469
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/30/2022 6:06:51 PM	B91469
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/30/2022 6:06:51 PM	B91469
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/30/2022 6:06:51 PM	B91469
Styrene	ND	0.14	1.0		µg/L	1	9/30/2022 6:06:51 PM	B91469
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/30/2022 6:06:51 PM	B91469
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/30/2022 6:06:51 PM	B91469
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/30/2022 6:06:51 PM	B91469
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/30/2022 6:06:51 PM	B91469
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/30/2022 6:06:51 PM	B91469
Surr: 1,2-Dichloroethane-d4	116	0	70-130		%Rec	1	9/30/2022 6:06:51 PM	B91469
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	9/30/2022 6:06:51 PM	B91469
Surr: Dibromofluoromethane	118	0	70-130		%Rec	1	9/30/2022 6:06:51 PM	B91469
Surr: Toluene-d8	101	0	70-130		%Rec	1	9/30/2022 6:06:51 PM	B91469

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5C
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 9:45:00 AM
Lab ID: 2209E92-004B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	10/4/2022 1:26:44 AM	70493

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5C
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 9:45:00 AM
Lab ID: 2209E92-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **mb**	
Diesel Range Organics (DRO)	0.064	0.016	0.064	J	mg/L	1	9/29/2022 7:05:08 PM	70480
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	9/29/2022 7:05:08 PM	70480
Surr: DNOP	73.9	0	42.2-138		%Rec	1	9/29/2022 7:05:08 PM	70480
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	10/11/2022 4:52:40 PM	70506
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	10/11/2022 4:52:40 PM	70506
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	10/11/2022 4:52:40 PM	70506
Di-n-octyl phthalate	ND	12	20		µg/L	1	10/11/2022 4:52:40 PM	70506
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	10/11/2022 4:52:40 PM	70506
Diethyl phthalate	ND	6.0	10		µg/L	1	10/11/2022 4:52:40 PM	70506
Dimethyl phthalate	ND	6.0	10		µg/L	1	10/11/2022 4:52:40 PM	70506
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	10/11/2022 4:52:40 PM	70506
2,4-Dinitrophenol	ND	16	20		µg/L	1	10/11/2022 4:52:40 PM	70506
2-Methylphenol	ND	5.0	10		µg/L	1	10/11/2022 4:52:40 PM	70506
3+4-Methylphenol	ND	5.1	10		µg/L	1	10/11/2022 4:52:40 PM	70506
Phenol	ND	18	20		µg/L	1	10/11/2022 4:52:40 PM	70506
Pyridine	ND	14	40		µg/L	1	10/11/2022 4:52:40 PM	70506
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	10/11/2022 4:52:40 PM	70506
Surr: 2-Fluorophenol	49.4	0	15-84.5		%Rec	1	10/11/2022 4:52:40 PM	70506
Surr: Phenol-d5	35.6	0	15-67		%Rec	1	10/11/2022 4:52:40 PM	70506
Surr: 2,4,6-Tribromophenol	69.6	0	15-108		%Rec	1	10/11/2022 4:52:40 PM	70506
Surr: Nitrobenzene-d5	61.5	0	16.8-112		%Rec	1	10/11/2022 4:52:40 PM	70506
Surr: 2-Fluorobiphenyl	55.7	0	15-101		%Rec	1	10/11/2022 4:52:40 PM	70506
Surr: 4-Terphenyl-d14	79.4	0	34.4-134		%Rec	1	10/11/2022 4:52:40 PM	70506
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	3.5	0.11	1.0		µg/L	1	10/3/2022 3:02:00 PM	70506
Naphthalene	ND	0.20	0.30		µg/L	1	10/3/2022 3:02:00 PM	70506
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	10/3/2022 3:02:00 PM	70506
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	10/3/2022 3:02:00 PM	70506
Acenaphthene	ND	0.14	0.30		µg/L	1	10/3/2022 3:02:00 PM	70506
Fluorene	ND	0.095	0.30		µg/L	1	10/3/2022 3:02:00 PM	70506
Phenanthrene	ND	0.16	0.30		µg/L	1	10/3/2022 3:02:00 PM	70506
Anthracene	ND	0.14	0.30		µg/L	1	10/3/2022 3:02:00 PM	70506
Fluoranthene	ND	0.14	0.30		µg/L	1	10/3/2022 3:02:00 PM	70506
Pyrene	ND	0.32	1.0		µg/L	1	10/3/2022 3:02:00 PM	70506
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	10/3/2022 3:02:00 PM	70506
Chrysene	ND	0.25	0.30		µg/L	1	10/3/2022 3:02:00 PM	70506
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	10/3/2022 3:02:00 PM	70506
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	10/3/2022 3:02:00 PM	70506

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5C
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 9:45:00 AM
Lab ID: 2209E92-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	65.1	0	15-108		%Rec	1	10/3/2022 3:02:00 PM	70506
Surr: 2-Fluorobiphenyl	53.5	0	15-107		%Rec	1	10/3/2022 3:02:00 PM	70506
Surr: 4-Terphenyl-d14	67.6	0	15-166		%Rec	1	10/3/2022 3:02:00 PM	70506

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5C
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 9:45:00 AM
Lab ID: 2209E92-004D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.62	0.0016	0.0030		mg/L	1	9/29/2022 1:38:56 PM	70455
Beryllium	ND	0.00088	0.0020		mg/L	1	9/29/2022 1:38:56 PM	70455
Cadmium	ND	0.0018	0.0020		mg/L	1	9/29/2022 1:38:56 PM	70455
Chromium	0.030	0.0020	0.0060		mg/L	1	9/29/2022 1:38:56 PM	70455
Cobalt	0.0062	0.0035	0.0060		mg/L	1	9/29/2022 1:38:56 PM	70455
Nickel	0.013	0.0053	0.010		mg/L	1	10/3/2022 11:00:28 AM	70455
Silver	ND	0.0018	0.0050		mg/L	1	10/3/2022 11:00:28 AM	70455
Vanadium	0.036	0.0035	0.050	J	mg/L	1	9/29/2022 1:38:56 PM	70455
Zinc	0.037	0.0039	0.010		mg/L	1	10/3/2022 11:00:28 AM	70455
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/30/2022 1:57:06 PM	70455
Arsenic	0.0018	0.00013	0.0010		mg/L	1	9/30/2022 1:57:06 PM	70455
Lead	0.0077	0.000061	0.00050		mg/L	1	9/30/2022 1:57:06 PM	70455
Selenium	0.0022	0.00037	0.0010		mg/L	1	9/30/2022 1:57:06 PM	70455
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00030	0.000091	0.00020		mg/L	1	9/29/2022 11:30:15 AM	70473

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5C
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 9:45:00 AM
Lab ID: 2209E92-004E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.093	0.0011	0.0020		mg/L	1	10/4/2022 2:22:50 PM	A91551
Beryllium	ND	0.00088	0.0020		mg/L	1	10/4/2022 2:22:50 PM	A91551
Cadmium	ND	0.00098	0.0020		mg/L	1	10/4/2022 2:22:50 PM	A91551
Chromium	ND	0.0020	0.0060		mg/L	1	10/4/2022 2:22:50 PM	A91551
Cobalt	ND	0.0024	0.0060		mg/L	1	10/4/2022 2:22:50 PM	A91551
Nickel	ND	0.0033	0.010		mg/L	1	10/4/2022 2:22:50 PM	A91551
Silver	0.0022	0.0013	0.0050	J	mg/L	1	10/4/2022 2:22:50 PM	A91551
Vanadium	ND	0.0017	0.050		mg/L	1	10/4/2022 2:22:50 PM	A91551
Zinc	0.036	0.0032	0.010		mg/L	1	10/4/2022 2:22:50 PM	A91551
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/29/2022 1:56:53 PM	B91411
Arsenic	0.00031	0.00012	0.0010	J	mg/L	1	9/29/2022 1:56:53 PM	B91411
Lead	ND	0.000057	0.00050		mg/L	1	9/29/2022 1:56:53 PM	B91411
Selenium	0.00036	0.00034	0.0010	J	mg/L	1	9/29/2022 1:56:53 PM	B91411
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/29/2022 11:36:38 AM	70473

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5B
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 10:00:00 AM
Lab ID: 2209E92-005A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.013	0.0090	0.050	J	mg/L	1	9/29/2022 10:56:00 PM	A91419
Surr: BFB	104	0	70-130		%Rec	1	9/29/2022 10:56:00 PM	A91419
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	9/30/2022 6:33:53 PM	B91469
Toluene	ND	0.20	1.0		µg/L	1	9/30/2022 6:33:53 PM	B91469
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/30/2022 6:33:53 PM	B91469
Methyl tert-butyl ether (MTBE)	13	0.39	1.0		µg/L	1	9/30/2022 6:33:53 PM	B91469
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/30/2022 6:33:53 PM	B91469
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/30/2022 6:33:53 PM	B91469
1,2-Dichloroethane (EDC)	0.37	0.25	1.0	J	µg/L	1	9/30/2022 6:33:53 PM	B91469
Acetone	4.3	2.5	10	J	µg/L	1	9/30/2022 6:33:53 PM	B91469
Bromomethane	ND	0.85	3.0		µg/L	1	9/30/2022 6:33:53 PM	B91469
2-Butanone	ND	2.0	10		µg/L	1	9/30/2022 6:33:53 PM	B91469
Carbon disulfide	ND	0.59	10		µg/L	1	9/30/2022 6:33:53 PM	B91469
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/30/2022 6:33:53 PM	B91469
Chloroform	ND	0.13	1.0		µg/L	1	9/30/2022 6:33:53 PM	B91469
Chloromethane	ND	0.41	3.0		µg/L	1	9/30/2022 6:33:53 PM	B91469
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/30/2022 6:33:53 PM	B91469
1,1-Dichloroethane	0.42	0.27	1.0	J	µg/L	1	9/30/2022 6:33:53 PM	B91469
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/30/2022 6:33:53 PM	B91469
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/30/2022 6:33:53 PM	B91469
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/30/2022 6:33:53 PM	B91469
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/30/2022 6:33:53 PM	B91469
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/30/2022 6:33:53 PM	B91469
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/30/2022 6:33:53 PM	B91469
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/30/2022 6:33:53 PM	B91469
Styrene	ND	0.14	1.0		µg/L	1	9/30/2022 6:33:53 PM	B91469
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/30/2022 6:33:53 PM	B91469
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/30/2022 6:33:53 PM	B91469
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/30/2022 6:33:53 PM	B91469
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/30/2022 6:33:53 PM	B91469
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/30/2022 6:33:53 PM	B91469
Surr: 1,2-Dichloroethane-d4	113	0	70-130		%Rec	1	9/30/2022 6:33:53 PM	B91469
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	1	9/30/2022 6:33:53 PM	B91469
Surr: Dibromofluoromethane	114	0	70-130		%Rec	1	9/30/2022 6:33:53 PM	B91469
Surr: Toluene-d8	102	0	70-130		%Rec	1	9/30/2022 6:33:53 PM	B91469

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5B
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 10:00:00 AM
Lab ID: 2209E92-005B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	10/4/2022 1:41:45 AM	70493

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5B
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 10:00:00 AM
Lab ID: 2209E92-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **mb**	
Diesel Range Organics (DRO)	0.060	0.016	0.064	J	mg/L	1	9/29/2022 7:29:21 PM	70480
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	9/29/2022 7:29:21 PM	70480
Surr: DNOP	95.7	0	42.2-138		%Rec	1	9/29/2022 7:29:21 PM	70480
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	10/11/2022 5:34:18 PM	70506
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	10/11/2022 5:34:18 PM	70506
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	10/11/2022 5:34:18 PM	70506
Di-n-octyl phthalate	ND	12	20		µg/L	1	10/11/2022 5:34:18 PM	70506
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	10/11/2022 5:34:18 PM	70506
Diethyl phthalate	ND	6.0	10		µg/L	1	10/11/2022 5:34:18 PM	70506
Dimethyl phthalate	ND	6.0	10		µg/L	1	10/11/2022 5:34:18 PM	70506
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	10/11/2022 5:34:18 PM	70506
2,4-Dinitrophenol	ND	16	20		µg/L	1	10/11/2022 5:34:18 PM	70506
2-Methylphenol	ND	5.0	10		µg/L	1	10/11/2022 5:34:18 PM	70506
3+4-Methylphenol	ND	5.1	10		µg/L	1	10/11/2022 5:34:18 PM	70506
Phenol	ND	18	20		µg/L	1	10/11/2022 5:34:18 PM	70506
Pyridine	ND	14	40		µg/L	1	10/11/2022 5:34:18 PM	70506
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	10/11/2022 5:34:18 PM	70506
Surr: 2-Fluorophenol	65.4	0	15-84.5		%Rec	1	10/11/2022 5:34:18 PM	70506
Surr: Phenol-d5	46.7	0	15-67		%Rec	1	10/11/2022 5:34:18 PM	70506
Surr: 2,4,6-Tribromophenol	83.3	0	15-108		%Rec	1	10/11/2022 5:34:18 PM	70506
Surr: Nitrobenzene-d5	72.9	0	16.8-112		%Rec	1	10/11/2022 5:34:18 PM	70506
Surr: 2-Fluorobiphenyl	67.1	0	15-101		%Rec	1	10/11/2022 5:34:18 PM	70506
Surr: 4-Terphenyl-d14	93.1	0	34.4-134		%Rec	1	10/11/2022 5:34:18 PM	70506
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	0.96	0.11	1.0	J	µg/L	1	10/3/2022 3:47:00 PM	70506
Naphthalene	ND	0.20	0.30		µg/L	1	10/3/2022 3:47:00 PM	70506
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	10/3/2022 3:47:00 PM	70506
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	10/3/2022 3:47:00 PM	70506
Acenaphthene	ND	0.14	0.30		µg/L	1	10/3/2022 3:47:00 PM	70506
Fluorene	ND	0.095	0.30		µg/L	1	10/3/2022 3:47:00 PM	70506
Phenanthrene	ND	0.16	0.30		µg/L	1	10/3/2022 3:47:00 PM	70506
Anthracene	ND	0.14	0.30		µg/L	1	10/3/2022 3:47:00 PM	70506
Fluoranthene	ND	0.14	0.30		µg/L	1	10/3/2022 3:47:00 PM	70506
Pyrene	ND	0.32	1.0		µg/L	1	10/3/2022 3:47:00 PM	70506
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	10/3/2022 3:47:00 PM	70506
Chrysene	ND	0.25	0.30		µg/L	1	10/3/2022 3:47:00 PM	70506
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	10/3/2022 3:47:00 PM	70506
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	10/3/2022 3:47:00 PM	70506

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5B
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 10:00:00 AM
Lab ID: 2209E92-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	68.9	0	15-108		%Rec	1	10/3/2022 3:47:00 PM	70506
Surr: 2-Fluorobiphenyl	56.5	0	15-107		%Rec	1	10/3/2022 3:47:00 PM	70506
Surr: 4-Terphenyl-d14	67.0	0	15-166		%Rec	1	10/3/2022 3:47:00 PM	70506

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5B
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 10:00:00 AM
Lab ID: 2209E92-005D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.29	0.0016	0.0030		mg/L	1	9/29/2022 1:43:08 PM	70455
Beryllium	ND	0.00088	0.0020		mg/L	1	9/29/2022 1:43:08 PM	70455
Cadmium	ND	0.0018	0.0020		mg/L	1	9/29/2022 1:43:08 PM	70455
Chromium	ND	0.0020	0.0060		mg/L	1	9/29/2022 1:43:08 PM	70455
Cobalt	ND	0.0035	0.0060		mg/L	1	9/29/2022 1:43:08 PM	70455
Nickel	ND	0.0053	0.010		mg/L	1	10/3/2022 11:01:46 AM	70455
Silver	ND	0.0018	0.0050		mg/L	1	10/3/2022 11:01:46 AM	70455
Vanadium	0.013	0.0035	0.050	J	mg/L	1	9/29/2022 1:43:08 PM	70455
Zinc	ND	0.0039	0.010		mg/L	1	10/3/2022 11:01:46 AM	70455
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/30/2022 1:59:32 PM	70455
Arsenic	0.00094	0.00013	0.0010	J	mg/L	1	9/30/2022 1:59:32 PM	70455
Lead	0.00021	0.000061	0.00050	J	mg/L	1	9/30/2022 1:59:32 PM	70455
Selenium	0.00057	0.00037	0.0010	J	mg/L	1	9/30/2022 1:59:32 PM	70455
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/29/2022 11:38:46 AM	70473

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5B
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 10:00:00 AM
Lab ID: 2209E92-005E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.29	0.0011	0.0020		mg/L	1	10/4/2022 2:27:14 PM	A91551
Beryllium	ND	0.00088	0.0020		mg/L	1	10/4/2022 2:27:14 PM	A91551
Cadmium	ND	0.00098	0.0020		mg/L	1	10/4/2022 2:27:14 PM	A91551
Chromium	ND	0.0020	0.0060		mg/L	1	10/4/2022 2:27:14 PM	A91551
Cobalt	ND	0.0024	0.0060		mg/L	1	10/4/2022 2:27:14 PM	A91551
Nickel	ND	0.0033	0.010		mg/L	1	10/4/2022 2:27:14 PM	A91551
Silver	ND	0.0013	0.0050		mg/L	1	10/4/2022 2:27:14 PM	A91551
Vanadium	0.0070	0.0017	0.050	J	mg/L	1	10/4/2022 2:27:14 PM	A91551
Zinc	0.048	0.0032	0.010		mg/L	1	10/4/2022 2:27:14 PM	A91551
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/29/2022 1:59:34 PM	B91411
Arsenic	0.00085	0.00012	0.0010	J	mg/L	1	9/29/2022 1:59:34 PM	B91411
Lead	ND	0.000057	0.00050		mg/L	1	9/29/2022 1:59:34 PM	B91411
Selenium	0.00081	0.00034	0.0010	J	mg/L	1	9/29/2022 1:59:34 PM	B91411
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/29/2022 11:40:54 AM	70473

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-44
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 10:20:00 AM
Lab ID: 2209E92-006A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	9/29/2022 11:16:00 PM	A91419
Surr: BFB	108	0	70-130		%Rec	1	9/29/2022 11:16:00 PM	A91419
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	9/30/2022 7:00:49 PM	B91469
Toluene	ND	0.20	1.0		µg/L	1	9/30/2022 7:00:49 PM	B91469
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/30/2022 7:00:49 PM	B91469
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/30/2022 7:00:49 PM	B91469
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/30/2022 7:00:49 PM	B91469
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/30/2022 7:00:49 PM	B91469
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/30/2022 7:00:49 PM	B91469
Acetone	ND	2.5	10		µg/L	1	9/30/2022 7:00:49 PM	B91469
Bromomethane	ND	0.85	3.0		µg/L	1	9/30/2022 7:00:49 PM	B91469
2-Butanone	ND	2.0	10		µg/L	1	9/30/2022 7:00:49 PM	B91469
Carbon disulfide	ND	0.59	10		µg/L	1	9/30/2022 7:00:49 PM	B91469
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/30/2022 7:00:49 PM	B91469
Chloroform	ND	0.13	1.0		µg/L	1	9/30/2022 7:00:49 PM	B91469
Chloromethane	ND	0.41	3.0		µg/L	1	9/30/2022 7:00:49 PM	B91469
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/30/2022 7:00:49 PM	B91469
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/30/2022 7:00:49 PM	B91469
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/30/2022 7:00:49 PM	B91469
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/30/2022 7:00:49 PM	B91469
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/30/2022 7:00:49 PM	B91469
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/30/2022 7:00:49 PM	B91469
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/30/2022 7:00:49 PM	B91469
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/30/2022 7:00:49 PM	B91469
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/30/2022 7:00:49 PM	B91469
Styrene	ND	0.14	1.0		µg/L	1	9/30/2022 7:00:49 PM	B91469
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/30/2022 7:00:49 PM	B91469
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/30/2022 7:00:49 PM	B91469
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/30/2022 7:00:49 PM	B91469
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/30/2022 7:00:49 PM	B91469
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/30/2022 7:00:49 PM	B91469
Surr: 1,2-Dichloroethane-d4	115	0	70-130		%Rec	1	9/30/2022 7:00:49 PM	B91469
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	9/30/2022 7:00:49 PM	B91469
Surr: Dibromofluoromethane	116	0	70-130		%Rec	1	9/30/2022 7:00:49 PM	B91469
Surr: Toluene-d8	101	0	70-130		%Rec	1	9/30/2022 7:00:49 PM	B91469

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-44
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 10:20:00 AM
Lab ID: 2209E92-006B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	10/4/2022 1:56:52 AM	70493

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-44
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 10:20:00 AM
Lab ID: 2209E92-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **mb**	
Diesel Range Organics (DRO)	0.048	0.016	0.064	J	mg/L	1	9/29/2022 7:53:38 PM	70480
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	9/29/2022 7:53:38 PM	70480
Surr: DNOP	91.5	0	42.2-138		%Rec	1	9/29/2022 7:53:38 PM	70480
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	10/11/2022 6:16:25 PM	70506
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	10/11/2022 6:16:25 PM	70506
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	10/11/2022 6:16:25 PM	70506
Di-n-octyl phthalate	ND	12	20		µg/L	1	10/11/2022 6:16:25 PM	70506
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	10/11/2022 6:16:25 PM	70506
Diethyl phthalate	ND	6.0	10		µg/L	1	10/11/2022 6:16:25 PM	70506
Dimethyl phthalate	ND	6.0	10		µg/L	1	10/11/2022 6:16:25 PM	70506
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	10/11/2022 6:16:25 PM	70506
2,4-Dinitrophenol	ND	16	20		µg/L	1	10/11/2022 6:16:25 PM	70506
2-Methylphenol	ND	5.0	10		µg/L	1	10/11/2022 6:16:25 PM	70506
3+4-Methylphenol	ND	5.1	10		µg/L	1	10/11/2022 6:16:25 PM	70506
Phenol	ND	18	20		µg/L	1	10/11/2022 6:16:25 PM	70506
Pyridine	ND	14	40		µg/L	1	10/11/2022 6:16:25 PM	70506
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	10/11/2022 6:16:25 PM	70506
Surr: 2-Fluorophenol	47.2	0	15-84.5		%Rec	1	10/11/2022 6:16:25 PM	70506
Surr: Phenol-d5	36.2	0	15-67		%Rec	1	10/11/2022 6:16:25 PM	70506
Surr: 2,4,6-Tribromophenol	61.7	0	15-108		%Rec	1	10/11/2022 6:16:25 PM	70506
Surr: Nitrobenzene-d5	60.3	0	16.8-112		%Rec	1	10/11/2022 6:16:25 PM	70506
Surr: 2-Fluorobiphenyl	55.6	0	15-101		%Rec	1	10/11/2022 6:16:25 PM	70506
Surr: 4-Terphenyl-d14	76.0	0	34.4-134		%Rec	1	10/11/2022 6:16:25 PM	70506
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	10/3/2022 4:31:00 PM	70506
Naphthalene	ND	0.20	0.30		µg/L	1	10/3/2022 4:31:00 PM	70506
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	10/3/2022 4:31:00 PM	70506
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	10/3/2022 4:31:00 PM	70506
Acenaphthene	ND	0.14	0.30		µg/L	1	10/3/2022 4:31:00 PM	70506
Fluorene	ND	0.095	0.30		µg/L	1	10/3/2022 4:31:00 PM	70506
Phenanthrene	ND	0.16	0.30		µg/L	1	10/3/2022 4:31:00 PM	70506
Anthracene	ND	0.14	0.30		µg/L	1	10/3/2022 4:31:00 PM	70506
Fluoranthene	ND	0.14	0.30		µg/L	1	10/3/2022 4:31:00 PM	70506
Pyrene	ND	0.32	1.0		µg/L	1	10/3/2022 4:31:00 PM	70506
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	10/3/2022 4:31:00 PM	70506
Chrysene	ND	0.25	0.30		µg/L	1	10/3/2022 4:31:00 PM	70506
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	10/3/2022 4:31:00 PM	70506
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	10/3/2022 4:31:00 PM	70506

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-44
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 10:20:00 AM
Lab ID: 2209E92-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	67.6	0	15-108		%Rec	1	10/3/2022 4:31:00 PM	70506
Surr: 2-Fluorobiphenyl	55.1	0	15-107		%Rec	1	10/3/2022 4:31:00 PM	70506
Surr: 4-Terphenyl-d14	71.7	0	15-166		%Rec	1	10/3/2022 4:31:00 PM	70506

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-44
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 10:20:00 AM
Lab ID: 2209E92-006D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.33	0.0016	0.0030		mg/L	1	9/29/2022 1:47:39 PM	70455
Beryllium	ND	0.00088	0.0020		mg/L	1	9/29/2022 1:47:39 PM	70455
Cadmium	ND	0.0018	0.0020		mg/L	1	9/29/2022 1:47:39 PM	70455
Chromium	0.025	0.0020	0.0060		mg/L	1	9/29/2022 1:47:39 PM	70455
Cobalt	ND	0.0035	0.0060		mg/L	1	9/29/2022 1:47:39 PM	70455
Nickel	ND	0.0053	0.010		mg/L	1	10/3/2022 11:03:16 AM	70455
Silver	ND	0.0018	0.0050		mg/L	1	10/3/2022 11:03:16 AM	70455
Vanadium	0.24	0.0035	0.050		mg/L	1	9/29/2022 1:47:39 PM	70455
Zinc	0.068	0.0039	0.010		mg/L	1	10/3/2022 11:03:16 AM	70455
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/30/2022 2:06:54 PM	70455
Arsenic	0.019	0.00013	0.0010	*	mg/L	1	9/30/2022 2:06:54 PM	70455
Lead	0.024	0.000061	0.00050	*	mg/L	1	9/30/2022 2:06:54 PM	70455
Selenium	0.014	0.00037	0.0010		mg/L	1	9/30/2022 2:06:54 PM	70455
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/29/2022 11:43:01 AM	70473

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-44
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 10:20:00 AM
Lab ID: 2209E92-006E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.033	0.0011	0.0020		mg/L	1	10/4/2022 2:31:32 PM	A91551
Beryllium	ND	0.00088	0.0020		mg/L	1	10/4/2022 2:31:32 PM	A91551
Cadmium	ND	0.00098	0.0020		mg/L	1	10/4/2022 2:31:32 PM	A91551
Chromium	ND	0.0020	0.0060		mg/L	1	10/4/2022 2:31:32 PM	A91551
Cobalt	ND	0.0024	0.0060		mg/L	1	10/4/2022 2:31:32 PM	A91551
Nickel	ND	0.0033	0.010		mg/L	1	10/4/2022 2:31:32 PM	A91551
Silver	ND	0.0013	0.0050		mg/L	1	10/4/2022 2:31:32 PM	A91551
Vanadium	0.13	0.0017	0.050		mg/L	1	10/4/2022 2:31:32 PM	A91551
Zinc	0.014	0.0032	0.010		mg/L	1	10/4/2022 2:31:32 PM	A91551
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	0.00070	0.00044	0.0010	J	mg/L	1	9/29/2022 2:02:16 PM	B91411
Arsenic	0.012	0.00012	0.0010	*	mg/L	1	9/29/2022 2:02:16 PM	B91411
Lead	0.00013	0.000057	0.00050	J	mg/L	1	9/29/2022 2:02:16 PM	B91411
Selenium	0.012	0.00034	0.0010		mg/L	1	10/3/2022 2:16:24 PM	B91488
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/29/2022 11:45:10 AM	70473

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-43
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 10:40:00 AM
Lab ID: 2209E92-007A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	9/29/2022 11:36:00 PM	A91419
Surr: BFB	109	0	70-130		%Rec	1	9/29/2022 11:36:00 PM	A91419
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	9/30/2022 7:28:02 PM	B91469
Toluene	ND	0.20	1.0		µg/L	1	9/30/2022 7:28:02 PM	B91469
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/30/2022 7:28:02 PM	B91469
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/30/2022 7:28:02 PM	B91469
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/30/2022 7:28:02 PM	B91469
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/30/2022 7:28:02 PM	B91469
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/30/2022 7:28:02 PM	B91469
Acetone	ND	2.5	10		µg/L	1	9/30/2022 7:28:02 PM	B91469
Bromomethane	ND	0.85	3.0		µg/L	1	9/30/2022 7:28:02 PM	B91469
2-Butanone	ND	2.0	10		µg/L	1	9/30/2022 7:28:02 PM	B91469
Carbon disulfide	ND	0.59	10		µg/L	1	9/30/2022 7:28:02 PM	B91469
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/30/2022 7:28:02 PM	B91469
Chloroform	ND	0.13	1.0		µg/L	1	9/30/2022 7:28:02 PM	B91469
Chloromethane	ND	0.41	3.0		µg/L	1	9/30/2022 7:28:02 PM	B91469
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/30/2022 7:28:02 PM	B91469
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/30/2022 7:28:02 PM	B91469
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/30/2022 7:28:02 PM	B91469
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/30/2022 7:28:02 PM	B91469
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/30/2022 7:28:02 PM	B91469
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/30/2022 7:28:02 PM	B91469
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/30/2022 7:28:02 PM	B91469
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/30/2022 7:28:02 PM	B91469
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/30/2022 7:28:02 PM	B91469
Styrene	ND	0.14	1.0		µg/L	1	9/30/2022 7:28:02 PM	B91469
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/30/2022 7:28:02 PM	B91469
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/30/2022 7:28:02 PM	B91469
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/30/2022 7:28:02 PM	B91469
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/30/2022 7:28:02 PM	B91469
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/30/2022 7:28:02 PM	B91469
Surr: 1,2-Dichloroethane-d4	117	0	70-130		%Rec	1	9/30/2022 7:28:02 PM	B91469
Surr: 4-Bromofluorobenzene	99.5	0	70-130		%Rec	1	9/30/2022 7:28:02 PM	B91469
Surr: Dibromofluoromethane	120	0	70-130		%Rec	1	9/30/2022 7:28:02 PM	B91469
Surr: Toluene-d8	104	0	70-130		%Rec	1	9/30/2022 7:28:02 PM	B91469

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-43
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 10:40:00 AM
Lab ID: 2209E92-007B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	10/4/2022 2:11:56 AM	70493

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-43
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 10:40:00 AM
Lab ID: 2209E92-007C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **mb**	
Diesel Range Organics (DRO)	0.10	0.016	0.064		mg/L	1	9/29/2022 8:17:46 PM	70480
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	9/29/2022 8:17:46 PM	70480
Surr: DNOP	102	0	42.2-138		%Rec	1	9/29/2022 8:17:46 PM	70480
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	10/11/2022 6:58:26 PM	70506
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	10/11/2022 6:58:26 PM	70506
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	10/11/2022 6:58:26 PM	70506
Di-n-octyl phthalate	ND	12	20		µg/L	1	10/11/2022 6:58:26 PM	70506
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	10/11/2022 6:58:26 PM	70506
Diethyl phthalate	ND	6.0	10		µg/L	1	10/11/2022 6:58:26 PM	70506
Dimethyl phthalate	ND	6.0	10		µg/L	1	10/11/2022 6:58:26 PM	70506
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	10/11/2022 6:58:26 PM	70506
2,4-Dinitrophenol	ND	16	20		µg/L	1	10/11/2022 6:58:26 PM	70506
2-Methylphenol	ND	5.0	10		µg/L	1	10/11/2022 6:58:26 PM	70506
3+4-Methylphenol	ND	5.1	10		µg/L	1	10/11/2022 6:58:26 PM	70506
Phenol	ND	18	20		µg/L	1	10/11/2022 6:58:26 PM	70506
Pyridine	ND	14	40		µg/L	1	10/11/2022 6:58:26 PM	70506
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	10/11/2022 6:58:26 PM	70506
Surr: 2-Fluorophenol	1.82	0	15-84.5	S	%Rec	1	10/11/2022 6:58:26 PM	70506
Surr: Phenol-d5	5.85	0	15-67	S	%Rec	1	10/11/2022 6:58:26 PM	70506
Surr: 2,4,6-Tribromophenol	2.98	0	15-108	S	%Rec	1	10/11/2022 6:58:26 PM	70506
Surr: Nitrobenzene-d5	63.2	0	16.8-112		%Rec	1	10/11/2022 6:58:26 PM	70506
Surr: 2-Fluorobiphenyl	62.9	0	15-101		%Rec	1	10/11/2022 6:58:26 PM	70506
Surr: 4-Terphenyl-d14	82.6	0	34.4-134		%Rec	1	10/11/2022 6:58:26 PM	70506
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	10/3/2022 5:15:00 PM	70506
Naphthalene	ND	0.20	0.30		µg/L	1	10/3/2022 5:15:00 PM	70506
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	10/3/2022 5:15:00 PM	70506
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	10/3/2022 5:15:00 PM	70506
Acenaphthene	ND	0.14	0.30		µg/L	1	10/3/2022 5:15:00 PM	70506
Fluorene	ND	0.095	0.30		µg/L	1	10/3/2022 5:15:00 PM	70506
Phenanthrene	ND	0.16	0.30		µg/L	1	10/3/2022 5:15:00 PM	70506
Anthracene	ND	0.14	0.30		µg/L	1	10/3/2022 5:15:00 PM	70506
Fluoranthene	ND	0.14	0.30		µg/L	1	10/3/2022 5:15:00 PM	70506
Pyrene	ND	0.32	1.0		µg/L	1	10/3/2022 5:15:00 PM	70506
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	10/3/2022 5:15:00 PM	70506
Chrysene	ND	0.25	0.30		µg/L	1	10/3/2022 5:15:00 PM	70506
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	10/3/2022 5:15:00 PM	70506
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	10/3/2022 5:15:00 PM	70506

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-43
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 10:40:00 AM
Lab ID: 2209E92-007C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	69.1	0	15-108		%Rec	1	10/3/2022 5:15:00 PM	70506
Surr: 2-Fluorobiphenyl	56.1	0	15-107		%Rec	1	10/3/2022 5:15:00 PM	70506
Surr: 4-Terphenyl-d14	67.0	0	15-166		%Rec	1	10/3/2022 5:15:00 PM	70506

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-43
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 10:40:00 AM
Lab ID: 2209E92-007D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.085	0.0079	0.015		mg/L	5	9/29/2022 1:58:36 PM	70455
Beryllium	ND	0.0044	0.010		mg/L	5	9/29/2022 1:58:36 PM	70455
Cadmium	ND	0.0088	0.010		mg/L	5	9/29/2022 1:58:36 PM	70455
Chromium	ND	0.0098	0.030		mg/L	5	9/29/2022 1:58:36 PM	70455
Cobalt	0.094	0.018	0.030		mg/L	5	9/29/2022 1:58:36 PM	70455
Nickel	ND	0.027	0.050		mg/L	5	10/3/2022 11:04:24 AM	70455
Silver	0.031	0.0092	0.025		mg/L	5	10/3/2022 11:04:24 AM	70455
Vanadium	ND	0.018	0.25		mg/L	5	9/29/2022 1:58:36 PM	70455
Zinc	ND	0.019	0.050		mg/L	5	10/3/2022 11:04:24 AM	70455
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/30/2022 2:09:20 PM	70455
Arsenic	0.0030	0.00013	0.0010		mg/L	1	9/30/2022 2:09:20 PM	70455
Lead	0.0020	0.00097	0.0025	J	mg/L	5	10/5/2022 3:12:27 PM	70455
Selenium	0.0018	0.00037	0.0010		mg/L	1	9/30/2022 2:09:20 PM	70455
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/29/2022 11:47:18 AM	70473

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-43
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 10:40:00 AM
Lab ID: 2209E92-007E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.055	0.0011	0.0020		mg/L	1	10/4/2022 2:49:16 PM	A91551
Beryllium	ND	0.00088	0.0020		mg/L	1	10/4/2022 2:49:16 PM	A91551
Cadmium	ND	0.00098	0.0020		mg/L	1	10/4/2022 2:49:16 PM	A91551
Chromium	ND	0.0020	0.0060		mg/L	1	10/4/2022 2:49:16 PM	A91551
Cobalt	ND	0.0024	0.0060		mg/L	1	10/4/2022 2:49:16 PM	A91551
Nickel	0.027	0.0033	0.010		mg/L	1	10/4/2022 2:49:16 PM	A91551
Silver	0.039	0.0013	0.0050		mg/L	1	10/4/2022 2:49:16 PM	A91551
Vanadium	0.0081	0.0017	0.050	J	mg/L	1	10/4/2022 2:49:16 PM	A91551
Zinc	0.016	0.0032	0.010		mg/L	1	10/4/2022 2:49:16 PM	A91551
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	0.0040	0.0022	0.0050	J	mg/L	5	9/29/2022 2:47:59 PM	A91411
Arsenic	0.0026	0.00061	0.0050	J	mg/L	5	9/29/2022 2:47:59 PM	A91411
Lead	0.00047	0.00028	0.0025	J	mg/L	5	9/29/2022 2:47:59 PM	A91411
Selenium	ND	0.0017	0.0050		mg/L	5	10/4/2022 11:40:32 AM	A91522
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/29/2022 11:49:27 AM	70473

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-10
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 11:00:00 AM
Lab ID: 2209E92-008A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	9/29/2022 11:55:00 PM	A91419
Surr: BFB	111	0	70-130		%Rec	1	9/29/2022 11:55:00 PM	A91419
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	9/30/2022 7:55:00 PM	B91469
Toluene	ND	0.20	1.0		µg/L	1	9/30/2022 7:55:00 PM	B91469
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/30/2022 7:55:00 PM	B91469
Methyl tert-butyl ether (MTBE)	3.9	0.39	1.0		µg/L	1	9/30/2022 7:55:00 PM	B91469
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/30/2022 7:55:00 PM	B91469
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/30/2022 7:55:00 PM	B91469
1,2-Dichloroethane (EDC)	0.37	0.25	1.0	J	µg/L	1	9/30/2022 7:55:00 PM	B91469
Acetone	ND	2.5	10		µg/L	1	9/30/2022 7:55:00 PM	B91469
Bromomethane	ND	0.85	3.0		µg/L	1	9/30/2022 7:55:00 PM	B91469
2-Butanone	ND	2.0	10		µg/L	1	9/30/2022 7:55:00 PM	B91469
Carbon disulfide	ND	0.59	10		µg/L	1	9/30/2022 7:55:00 PM	B91469
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/30/2022 7:55:00 PM	B91469
Chloroform	ND	0.13	1.0		µg/L	1	9/30/2022 7:55:00 PM	B91469
Chloromethane	ND	0.41	3.0		µg/L	1	9/30/2022 7:55:00 PM	B91469
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/30/2022 7:55:00 PM	B91469
1,1-Dichloroethane	0.55	0.27	1.0	J	µg/L	1	9/30/2022 7:55:00 PM	B91469
1,1-Dichloroethene	0.43	0.20	1.0	J	µg/L	1	9/30/2022 7:55:00 PM	B91469
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/30/2022 7:55:00 PM	B91469
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/30/2022 7:55:00 PM	B91469
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/30/2022 7:55:00 PM	B91469
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/30/2022 7:55:00 PM	B91469
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/30/2022 7:55:00 PM	B91469
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/30/2022 7:55:00 PM	B91469
Styrene	ND	0.14	1.0		µg/L	1	9/30/2022 7:55:00 PM	B91469
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/30/2022 7:55:00 PM	B91469
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/30/2022 7:55:00 PM	B91469
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/30/2022 7:55:00 PM	B91469
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/30/2022 7:55:00 PM	B91469
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/30/2022 7:55:00 PM	B91469
Surr: 1,2-Dichloroethane-d4	112	0	70-130		%Rec	1	9/30/2022 7:55:00 PM	B91469
Surr: 4-Bromofluorobenzene	98.9	0	70-130		%Rec	1	9/30/2022 7:55:00 PM	B91469
Surr: Dibromofluoromethane	115	0	70-130		%Rec	1	9/30/2022 7:55:00 PM	B91469
Surr: Toluene-d8	103	0	70-130		%Rec	1	9/30/2022 7:55:00 PM	B91469

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-10
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 11:00:00 AM
Lab ID: 2209E92-008B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0026	0.0092		µg/L	1	10/4/2022 2:26:55 AM	70493

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-10
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 11:00:00 AM
Lab ID: 2209E92-008C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **mb**	
Diesel Range Organics (DRO)	0.068	0.016	0.064		mg/L	1	9/29/2022 8:42:04 PM	70480
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	9/29/2022 8:42:04 PM	70480
Surr: DNOP	99.4	0	42.2-138		%Rec	1	9/29/2022 8:42:04 PM	70480
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	10/11/2022 7:40:27 PM	70506
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	10/11/2022 7:40:27 PM	70506
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	10/11/2022 7:40:27 PM	70506
Di-n-octyl phthalate	ND	12	20		µg/L	1	10/11/2022 7:40:27 PM	70506
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	10/11/2022 7:40:27 PM	70506
Diethyl phthalate	ND	6.0	10		µg/L	1	10/11/2022 7:40:27 PM	70506
Dimethyl phthalate	ND	6.0	10		µg/L	1	10/11/2022 7:40:27 PM	70506
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	10/11/2022 7:40:27 PM	70506
2,4-Dinitrophenol	ND	16	20		µg/L	1	10/11/2022 7:40:27 PM	70506
2-Methylphenol	ND	5.0	10		µg/L	1	10/11/2022 7:40:27 PM	70506
3+4-Methylphenol	ND	5.1	10		µg/L	1	10/11/2022 7:40:27 PM	70506
Phenol	ND	18	20		µg/L	1	10/11/2022 7:40:27 PM	70506
Pyridine	ND	14	40		µg/L	1	10/11/2022 7:40:27 PM	70506
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	10/11/2022 7:40:27 PM	70506
Surr: 2-Fluorophenol	36.3	0	15-84.5		%Rec	1	10/11/2022 7:40:27 PM	70506
Surr: Phenol-d5	27.2	0	15-67		%Rec	1	10/11/2022 7:40:27 PM	70506
Surr: 2,4,6-Tribromophenol	53.8	0	15-108		%Rec	1	10/11/2022 7:40:27 PM	70506
Surr: Nitrobenzene-d5	45.8	0	16.8-112		%Rec	1	10/11/2022 7:40:27 PM	70506
Surr: 2-Fluorobiphenyl	42.6	0	15-101		%Rec	1	10/11/2022 7:40:27 PM	70506
Surr: 4-Terphenyl-d14	71.0	0	34.4-134		%Rec	1	10/11/2022 7:40:27 PM	70506
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	1.0	0.11	1.0		µg/L	1	10/3/2022 6:01:00 PM	70506
Naphthalene	ND	0.20	0.30		µg/L	1	10/3/2022 6:01:00 PM	70506
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	10/3/2022 6:01:00 PM	70506
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	10/3/2022 6:01:00 PM	70506
Acenaphthene	ND	0.14	0.30		µg/L	1	10/3/2022 6:01:00 PM	70506
Fluorene	ND	0.095	0.30		µg/L	1	10/3/2022 6:01:00 PM	70506
Phenanthrene	ND	0.16	0.30		µg/L	1	10/3/2022 6:01:00 PM	70506
Anthracene	ND	0.14	0.30		µg/L	1	10/3/2022 6:01:00 PM	70506
Fluoranthene	ND	0.14	0.30		µg/L	1	10/3/2022 6:01:00 PM	70506
Pyrene	ND	0.32	1.0		µg/L	1	10/3/2022 6:01:00 PM	70506
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	10/3/2022 6:01:00 PM	70506
Chrysene	ND	0.25	0.30		µg/L	1	10/3/2022 6:01:00 PM	70506
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	10/3/2022 6:01:00 PM	70506
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	10/3/2022 6:01:00 PM	70506

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-10
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 11:00:00 AM
Lab ID: 2209E92-008C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	42.9	0	15-108		%Rec	1	10/3/2022 6:01:00 PM	70506
Surr: 2-Fluorobiphenyl	34.7	0	15-107		%Rec	1	10/3/2022 6:01:00 PM	70506
Surr: 4-Terphenyl-d14	54.4	0	15-166		%Rec	1	10/3/2022 6:01:00 PM	70506

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-10
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 11:00:00 AM
Lab ID: 2209E92-008D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.048	0.0016	0.0030		mg/L	1	9/29/2022 2:01:45 PM	70455
Beryllium	ND	0.00088	0.0020		mg/L	1	9/29/2022 2:01:45 PM	70455
Cadmium	ND	0.0018	0.0020		mg/L	1	9/29/2022 2:01:45 PM	70455
Chromium	ND	0.0020	0.0060		mg/L	1	9/29/2022 2:01:45 PM	70455
Cobalt	0.0042	0.0035	0.0060	J	mg/L	1	9/29/2022 2:01:45 PM	70455
Nickel	ND	0.0053	0.010		mg/L	1	10/3/2022 11:05:54 AM	70455
Silver	ND	0.0018	0.0050		mg/L	1	10/3/2022 11:05:54 AM	70455
Vanadium	0.0072	0.0035	0.050	J	mg/L	1	9/29/2022 2:01:45 PM	70455
Zinc	ND	0.0039	0.010		mg/L	1	10/3/2022 11:05:54 AM	70455
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/30/2022 2:11:47 PM	70455
Arsenic	0.00051	0.00013	0.0010	J	mg/L	1	9/30/2022 2:11:47 PM	70455
Lead	0.000088	0.000061	0.00050	J	mg/L	1	9/30/2022 2:11:47 PM	70455
Selenium	0.011	0.00037	0.0010		mg/L	1	9/30/2022 2:11:47 PM	70455
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/29/2022 11:51:36 AM	70473

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-10
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 11:00:00 AM
Lab ID: 2209E92-008E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.049	0.0011	0.0020		mg/L	1	10/4/2022 2:53:58 PM	A91551
Beryllium	ND	0.00088	0.0020		mg/L	1	10/4/2022 2:53:58 PM	A91551
Cadmium	ND	0.00098	0.0020		mg/L	1	10/4/2022 2:53:58 PM	A91551
Chromium	ND	0.0020	0.0060		mg/L	1	10/4/2022 2:53:58 PM	A91551
Cobalt	ND	0.0024	0.0060		mg/L	1	10/4/2022 2:53:58 PM	A91551
Nickel	ND	0.0033	0.010		mg/L	1	10/4/2022 2:53:58 PM	A91551
Silver	0.0023	0.0013	0.0050	J	mg/L	1	10/4/2022 2:53:58 PM	A91551
Vanadium	0.0055	0.0017	0.050	J	mg/L	1	10/4/2022 2:53:58 PM	A91551
Zinc	0.066	0.0032	0.010		mg/L	1	10/4/2022 2:53:58 PM	A91551
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/29/2022 2:07:38 PM	B91411
Arsenic	0.00058	0.00012	0.0010	J	mg/L	1	9/29/2022 2:07:38 PM	B91411
Lead	0.00010	0.000057	0.00050	J	mg/L	1	9/29/2022 2:07:38 PM	B91411
Selenium	0.0097	0.0017	0.0050		mg/L	5	10/4/2022 11:43:14 AM	A91522
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/29/2022 11:53:46 AM	70473

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-32
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 11:15:00 AM
Lab ID: 2209E92-009A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.74	0.0090	0.050		mg/L	1	9/30/2022 12:15:00 AM	A91419
Surr: BFB	103	0	70-130		%Rec	1	9/30/2022 12:15:00 AM	A91419
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	0.35	0.23	1.0	J	µg/L	1	9/30/2022 8:21:59 PM	B91469
Toluene	ND	0.20	1.0		µg/L	1	9/30/2022 8:21:59 PM	B91469
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/30/2022 8:21:59 PM	B91469
Methyl tert-butyl ether (MTBE)	890	3.9	10		µg/L	10	10/3/2022 3:08:18 PM	A91498
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/30/2022 8:21:59 PM	B91469
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/30/2022 8:21:59 PM	B91469
1,2-Dichloroethane (EDC)	11	0.25	1.0		µg/L	1	9/30/2022 8:21:59 PM	B91469
Acetone	ND	2.5	10		µg/L	1	9/30/2022 8:21:59 PM	B91469
Bromomethane	ND	0.85	3.0		µg/L	1	9/30/2022 8:21:59 PM	B91469
2-Butanone	ND	2.0	10		µg/L	1	9/30/2022 8:21:59 PM	B91469
Carbon disulfide	ND	0.59	10		µg/L	1	9/30/2022 8:21:59 PM	B91469
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/30/2022 8:21:59 PM	B91469
Chloroform	ND	0.13	1.0		µg/L	1	9/30/2022 8:21:59 PM	B91469
Chloromethane	ND	0.41	3.0		µg/L	1	9/30/2022 8:21:59 PM	B91469
cis-1,2-DCE	2.1	0.39	1.0		µg/L	1	9/30/2022 8:21:59 PM	B91469
1,1-Dichloroethane	12	0.27	1.0		µg/L	1	9/30/2022 8:21:59 PM	B91469
1,1-Dichloroethene	18	0.20	1.0		µg/L	1	9/30/2022 8:21:59 PM	B91469
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/30/2022 8:21:59 PM	B91469
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/30/2022 8:21:59 PM	B91469
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/30/2022 8:21:59 PM	B91469
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/30/2022 8:21:59 PM	B91469
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/30/2022 8:21:59 PM	B91469
sec-Butylbenzene	0.41	0.14	1.0	J	µg/L	1	9/30/2022 8:21:59 PM	B91469
Styrene	ND	0.14	1.0		µg/L	1	9/30/2022 8:21:59 PM	B91469
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/30/2022 8:21:59 PM	B91469
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/30/2022 8:21:59 PM	B91469
Trichloroethene (TCE)	0.28	0.20	1.0	J	µg/L	1	9/30/2022 8:21:59 PM	B91469
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/30/2022 8:21:59 PM	B91469
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/30/2022 8:21:59 PM	B91469
Surr: 1,2-Dichloroethane-d4	114	0	70-130		%Rec	1	9/30/2022 8:21:59 PM	B91469
Surr: 4-Bromofluorobenzene	97.3	0	70-130		%Rec	1	9/30/2022 8:21:59 PM	B91469
Surr: Dibromofluoromethane	117	0	70-130		%Rec	1	9/30/2022 8:21:59 PM	B91469
Surr: Toluene-d8	101	0	70-130		%Rec	1	9/30/2022 8:21:59 PM	B91469

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-32
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 11:15:00 AM
Lab ID: 2209E92-009B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	10/4/2022 2:41:55 AM	70493

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-32
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 11:15:00 AM
Lab ID: 2209E92-009C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **mb**	
Diesel Range Organics (DRO)	0.21	0.016	0.064		mg/L	1	9/29/2022 9:06:16 PM	70480
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	9/29/2022 9:06:16 PM	70480
Surr: DNOP	96.4	0	42.2-138		%Rec	1	9/29/2022 9:06:16 PM	70480
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	10/11/2022 8:22:21 PM	70506
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	10/11/2022 8:22:21 PM	70506
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	10/11/2022 8:22:21 PM	70506
Di-n-octyl phthalate	ND	12	20		µg/L	1	10/11/2022 8:22:21 PM	70506
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	10/11/2022 8:22:21 PM	70506
Diethyl phthalate	ND	6.0	10		µg/L	1	10/11/2022 8:22:21 PM	70506
Dimethyl phthalate	ND	6.0	10		µg/L	1	10/11/2022 8:22:21 PM	70506
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	10/11/2022 8:22:21 PM	70506
2,4-Dinitrophenol	ND	16	20		µg/L	1	10/11/2022 8:22:21 PM	70506
2-Methylphenol	ND	5.0	10		µg/L	1	10/11/2022 8:22:21 PM	70506
3+4-Methylphenol	ND	5.1	10		µg/L	1	10/11/2022 8:22:21 PM	70506
Phenol	ND	18	20		µg/L	1	10/11/2022 8:22:21 PM	70506
Pyridine	ND	14	40		µg/L	1	10/11/2022 8:22:21 PM	70506
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	10/11/2022 8:22:21 PM	70506
Surr: 2-Fluorophenol	36.5	0	15-84.5		%Rec	1	10/11/2022 8:22:21 PM	70506
Surr: Phenol-d5	28.1	0	15-67		%Rec	1	10/11/2022 8:22:21 PM	70506
Surr: 2,4,6-Tribromophenol	60.9	0	15-108		%Rec	1	10/11/2022 8:22:21 PM	70506
Surr: Nitrobenzene-d5	46.0	0	16.8-112		%Rec	1	10/11/2022 8:22:21 PM	70506
Surr: 2-Fluorobiphenyl	46.4	0	15-101		%Rec	1	10/11/2022 8:22:21 PM	70506
Surr: 4-Terphenyl-d14	72.5	0	34.4-134		%Rec	1	10/11/2022 8:22:21 PM	70506
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	27	0.11	1.0	E	µg/L	1	10/3/2022 6:48:00 PM	70506
Naphthalene	ND	0.20	0.30		µg/L	1	10/3/2022 6:48:00 PM	70506
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	10/3/2022 6:48:00 PM	70506
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	10/3/2022 6:48:00 PM	70506
Acenaphthene	ND	0.14	0.30		µg/L	1	10/3/2022 6:48:00 PM	70506
Fluorene	ND	0.095	0.30		µg/L	1	10/3/2022 6:48:00 PM	70506
Phenanthrene	ND	0.16	0.30		µg/L	1	10/3/2022 6:48:00 PM	70506
Anthracene	ND	0.14	0.30		µg/L	1	10/3/2022 6:48:00 PM	70506
Fluoranthene	ND	0.14	0.30		µg/L	1	10/3/2022 6:48:00 PM	70506
Pyrene	ND	0.32	1.0		µg/L	1	10/3/2022 6:48:00 PM	70506
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	10/3/2022 6:48:00 PM	70506
Chrysene	ND	0.25	0.30		µg/L	1	10/3/2022 6:48:00 PM	70506
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	10/3/2022 6:48:00 PM	70506
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	10/3/2022 6:48:00 PM	70506

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-32
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 11:15:00 AM
Lab ID: 2209E92-009C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	39.9	0	15-108		%Rec	1	10/3/2022 6:48:00 PM	70506
Surr: 2-Fluorobiphenyl	31.9	0	15-107		%Rec	1	10/3/2022 6:48:00 PM	70506
Surr: 4-Terphenyl-d14	49.5	0	15-166		%Rec	1	10/3/2022 6:48:00 PM	70506

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-32
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 11:15:00 AM
Lab ID: 2209E92-009D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.090	0.0016	0.0030		mg/L	1	9/29/2022 2:06:24 PM	70455
Beryllium	ND	0.00088	0.0020		mg/L	1	9/29/2022 2:06:24 PM	70455
Cadmium	ND	0.0018	0.0020		mg/L	1	9/29/2022 2:06:24 PM	70455
Chromium	ND	0.0020	0.0060		mg/L	1	9/29/2022 2:06:24 PM	70455
Cobalt	ND	0.0035	0.0060		mg/L	1	9/29/2022 2:06:24 PM	70455
Nickel	ND	0.0053	0.010		mg/L	1	10/3/2022 11:07:27 AM	70455
Silver	ND	0.0018	0.0050		mg/L	1	10/3/2022 11:07:27 AM	70455
Vanadium	0.012	0.0035	0.050	J	mg/L	1	9/29/2022 2:06:24 PM	70455
Zinc	ND	0.0039	0.010		mg/L	1	10/3/2022 11:07:27 AM	70455
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/30/2022 2:14:14 PM	70455
Arsenic	0.0031	0.00013	0.0010		mg/L	1	9/30/2022 2:14:14 PM	70455
Lead	0.0020	0.000061	0.00050		mg/L	1	9/30/2022 2:14:14 PM	70455
Selenium	0.00076	0.00037	0.0010	J	mg/L	1	9/30/2022 2:14:14 PM	70455
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/29/2022 11:55:57 AM	70473

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-32
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 11:15:00 AM
Lab ID: 2209E92-009E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.047	0.0011	0.0020		mg/L	1	10/4/2022 2:57:55 PM	A91551
Beryllium	ND	0.00088	0.0020		mg/L	1	10/4/2022 2:57:55 PM	A91551
Cadmium	ND	0.00098	0.0020		mg/L	1	10/4/2022 2:57:55 PM	A91551
Chromium	ND	0.0020	0.0060		mg/L	1	10/4/2022 2:57:55 PM	A91551
Cobalt	ND	0.0024	0.0060		mg/L	1	10/4/2022 2:57:55 PM	A91551
Nickel	0.0033	0.0033	0.010	J	mg/L	1	10/4/2022 2:57:55 PM	A91551
Silver	ND	0.0013	0.0050		mg/L	1	10/4/2022 2:57:55 PM	A91551
Vanadium	0.0042	0.0017	0.050	J	mg/L	1	10/4/2022 2:57:55 PM	A91551
Zinc	0.014	0.0032	0.010		mg/L	1	10/4/2022 2:57:55 PM	A91551
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/29/2022 2:10:20 PM	B91411
Arsenic	0.0025	0.00012	0.0010		mg/L	1	9/29/2022 2:10:20 PM	B91411
Lead	0.000094	0.000057	0.00050	J	mg/L	1	9/29/2022 2:10:20 PM	B91411
Selenium	ND	0.00034	0.0010		mg/L	1	9/29/2022 2:10:20 PM	B91411
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/29/2022 12:02:21 PM	70473

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-41
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 11:35:00 AM
Lab ID: 2209E92-010A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.014	0.0090	0.050	J	mg/L	1	9/30/2022 12:35:00 AM	A91419
Surr: BFB	99.6	0	70-130		%Rec	1	9/30/2022 12:35:00 AM	A91419
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	0.40	0.23	1.0	J	µg/L	1	9/30/2022 8:48:56 PM	B91469
Toluene	ND	0.20	1.0		µg/L	1	9/30/2022 8:48:56 PM	B91469
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/30/2022 8:48:56 PM	B91469
Methyl tert-butyl ether (MTBE)	1.1	0.39	1.0		µg/L	1	9/30/2022 8:48:56 PM	B91469
1,2,4-Trimethylbenzene	0.17	0.12	1.0	J	µg/L	1	9/30/2022 8:48:56 PM	B91469
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/30/2022 8:48:56 PM	B91469
1,2-Dichloroethane (EDC)	2.9	0.25	1.0		µg/L	1	9/30/2022 8:48:56 PM	B91469
Acetone	ND	2.5	10		µg/L	1	9/30/2022 8:48:56 PM	B91469
Bromomethane	ND	0.85	3.0		µg/L	1	9/30/2022 8:48:56 PM	B91469
2-Butanone	ND	2.0	10		µg/L	1	9/30/2022 8:48:56 PM	B91469
Carbon disulfide	ND	0.59	10		µg/L	1	9/30/2022 8:48:56 PM	B91469
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/30/2022 8:48:56 PM	B91469
Chloroform	ND	0.13	1.0		µg/L	1	9/30/2022 8:48:56 PM	B91469
Chloromethane	ND	0.41	3.0		µg/L	1	9/30/2022 8:48:56 PM	B91469
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/30/2022 8:48:56 PM	B91469
1,1-Dichloroethane	2.9	0.27	1.0		µg/L	1	9/30/2022 8:48:56 PM	B91469
1,1-Dichloroethene	4.7	0.20	1.0		µg/L	1	9/30/2022 8:48:56 PM	B91469
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/30/2022 8:48:56 PM	B91469
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/30/2022 8:48:56 PM	B91469
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/30/2022 8:48:56 PM	B91469
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/30/2022 8:48:56 PM	B91469
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/30/2022 8:48:56 PM	B91469
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/30/2022 8:48:56 PM	B91469
Styrene	ND	0.14	1.0		µg/L	1	9/30/2022 8:48:56 PM	B91469
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/30/2022 8:48:56 PM	B91469
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/30/2022 8:48:56 PM	B91469
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/30/2022 8:48:56 PM	B91469
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/30/2022 8:48:56 PM	B91469
Xylenes, Total	0.80	0.37	1.5	J	µg/L	1	9/30/2022 8:48:56 PM	B91469
Surr: 1,2-Dichloroethane-d4	119	0	70-130		%Rec	1	9/30/2022 8:48:56 PM	B91469
Surr: 4-Bromofluorobenzene	96.9	0	70-130		%Rec	1	9/30/2022 8:48:56 PM	B91469
Surr: Dibromofluoromethane	118	0	70-130		%Rec	1	9/30/2022 8:48:56 PM	B91469
Surr: Toluene-d8	99.9	0	70-130		%Rec	1	9/30/2022 8:48:56 PM	B91469

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Estimated value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-41
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 11:35:00 AM
Lab ID: 2209E92-010B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0093		µg/L	1	10/4/2022 2:57:01 AM	70493

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-41
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 11:35:00 AM
Lab ID: 2209E92-010C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **mb**	
Diesel Range Organics (DRO)	1.9	0.016	0.064		mg/L	1	9/29/2022 9:30:23 PM	70480
Motor Oil Range Organics (MRO)	0.061	0.052	0.080	J	mg/L	1	9/29/2022 9:30:23 PM	70480
Surr: DNOP	104	0	42.2-138		%Rec	1	9/29/2022 9:30:23 PM	70480
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	10/12/2022 11:49:02 A	70506
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	10/12/2022 11:49:02 A	70506
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	10/12/2022 11:49:02 A	70506
Di-n-octyl phthalate	ND	12	20		µg/L	1	10/12/2022 11:49:02 A	70506
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	10/12/2022 11:49:02 A	70506
Diethyl phthalate	ND	6.0	10		µg/L	1	10/12/2022 11:49:02 A	70506
Dimethyl phthalate	ND	6.0	10		µg/L	1	10/12/2022 11:49:02 A	70506
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	10/12/2022 11:49:02 A	70506
2,4-Dinitrophenol	ND	16	20		µg/L	1	10/12/2022 11:49:02 A	70506
2-Methylphenol	ND	5.0	10		µg/L	1	10/12/2022 11:49:02 A	70506
3+4-Methylphenol	ND	5.1	10		µg/L	1	10/12/2022 11:49:02 A	70506
Phenol	ND	18	20		µg/L	1	10/12/2022 11:49:02 A	70506
Pyridine	ND	14	40		µg/L	1	10/12/2022 11:49:02 A	70506
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	10/12/2022 11:49:02 A	70506
Surr: 2-Fluorophenol	44.9	0	15-84.5		%Rec	1	10/12/2022 11:49:02 A	70506
Surr: Phenol-d5	33.9	0	15-67		%Rec	1	10/12/2022 11:49:02 A	70506
Surr: 2,4,6-Tribromophenol	66.6	0	15-108		%Rec	1	10/12/2022 11:49:02 A	70506
Surr: Nitrobenzene-d5	57.5	0	16.8-112		%Rec	1	10/12/2022 11:49:02 A	70506
Surr: 2-Fluorobiphenyl	53.2	0	15-101		%Rec	1	10/12/2022 11:49:02 A	70506
Surr: 4-Terphenyl-d14	71.5	0	34.4-134		%Rec	1	10/12/2022 11:49:02 A	70506
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	1.9	0.11	1.0		µg/L	1	10/3/2022 7:37:00 PM	70506
Naphthalene	ND	0.20	0.30		µg/L	1	10/3/2022 7:37:00 PM	70506
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	10/3/2022 7:37:00 PM	70506
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	10/3/2022 7:37:00 PM	70506
Acenaphthene	ND	0.14	0.30		µg/L	1	10/3/2022 7:37:00 PM	70506
Fluorene	ND	0.095	0.30		µg/L	1	10/3/2022 7:37:00 PM	70506
Phenanthrene	0.42	0.16	0.30		µg/L	1	10/3/2022 7:37:00 PM	70506
Anthracene	ND	0.14	0.30		µg/L	1	10/3/2022 7:37:00 PM	70506
Fluoranthene	ND	0.14	0.30		µg/L	1	10/3/2022 7:37:00 PM	70506
Pyrene	ND	0.32	1.0		µg/L	1	10/3/2022 7:37:00 PM	70506
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	10/3/2022 7:37:00 PM	70506
Chrysene	ND	0.25	0.30		µg/L	1	10/3/2022 7:37:00 PM	70506
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	10/3/2022 7:37:00 PM	70506
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	10/3/2022 7:37:00 PM	70506

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-41
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 11:35:00 AM
Lab ID: 2209E92-010C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	51.4	0	15-108		%Rec	1	10/3/2022 7:37:00 PM	70506
Surr: 2-Fluorobiphenyl	39.2	0	15-107		%Rec	1	10/3/2022 7:37:00 PM	70506
Surr: 4-Terphenyl-d14	46.3	0	15-166		%Rec	1	10/3/2022 7:37:00 PM	70506

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-41
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 11:35:00 AM
Lab ID: 2209E92-010D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.075	0.0016	0.0030		mg/L	1	9/29/2022 2:10:52 PM	70455
Beryllium	ND	0.00088	0.0020		mg/L	1	9/29/2022 2:10:52 PM	70455
Cadmium	ND	0.0018	0.0020		mg/L	1	9/29/2022 2:10:52 PM	70455
Chromium	ND	0.0020	0.0060		mg/L	1	9/29/2022 2:10:52 PM	70455
Cobalt	ND	0.0035	0.0060		mg/L	1	9/29/2022 2:10:52 PM	70455
Nickel	ND	0.0053	0.010		mg/L	1	10/3/2022 11:08:48 AM	70455
Silver	ND	0.0018	0.0050		mg/L	1	10/3/2022 11:08:48 AM	70455
Vanadium	0.024	0.0035	0.050	J	mg/L	1	9/29/2022 2:10:52 PM	70455
Zinc	ND	0.0039	0.010		mg/L	1	10/3/2022 11:08:48 AM	70455
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/30/2022 2:16:40 PM	70455
Arsenic	0.0017	0.00013	0.0010		mg/L	1	9/30/2022 2:16:40 PM	70455
Lead	ND	0.000061	0.00050		mg/L	1	9/30/2022 2:16:40 PM	70455
Selenium	0.035	0.00037	0.0010		mg/L	1	9/30/2022 2:16:40 PM	70455
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/29/2022 12:04:29 PM	70473

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-41
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 11:35:00 AM
Lab ID: 2209E92-010E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.070	0.0011	0.0020		mg/L	1	10/4/2022 3:01:38 PM	A91551
Beryllium	ND	0.00088	0.0020		mg/L	1	10/4/2022 3:01:38 PM	A91551
Cadmium	ND	0.00098	0.0020		mg/L	1	10/4/2022 3:01:38 PM	A91551
Chromium	ND	0.0020	0.0060		mg/L	1	10/4/2022 3:01:38 PM	A91551
Cobalt	ND	0.0024	0.0060		mg/L	1	10/4/2022 3:01:38 PM	A91551
Nickel	ND	0.0033	0.010		mg/L	1	10/4/2022 3:01:38 PM	A91551
Silver	ND	0.0013	0.0050		mg/L	1	10/4/2022 3:01:38 PM	A91551
Vanadium	0.024	0.0017	0.050	J	mg/L	1	10/4/2022 3:01:38 PM	A91551
Zinc	0.016	0.0032	0.010		mg/L	1	10/4/2022 3:01:38 PM	A91551
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/29/2022 2:13:01 PM	B91411
Arsenic	0.0019	0.00012	0.0010		mg/L	1	9/29/2022 2:13:01 PM	B91411
Lead	ND	0.000057	0.00050		mg/L	1	9/29/2022 2:13:01 PM	B91411
Selenium	0.031	0.0017	0.0050		mg/L	5	10/4/2022 11:45:55 AM	A91522
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/29/2022 12:10:54 PM	70473

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-9-27-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 11:35:00 AM
Lab ID: 2209E92-011A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	9/30/2022 12:54:00 AM	A91419
Surr: BFB	106	0	70-130		%Rec	1	9/30/2022 12:54:00 AM	A91419
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	10/1/2022 2:12:41 AM	B91469
Toluene	ND	0.20	1.0		µg/L	1	10/1/2022 2:12:41 AM	B91469
Ethylbenzene	ND	0.21	1.0		µg/L	1	10/1/2022 2:12:41 AM	B91469
Methyl tert-butyl ether (MTBE)	3.0	0.39	1.0		µg/L	1	10/1/2022 2:12:41 AM	B91469
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	10/1/2022 2:12:41 AM	B91469
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	10/1/2022 2:12:41 AM	B91469
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	10/1/2022 2:12:41 AM	B91469
Acetone	ND	2.5	10		µg/L	1	10/1/2022 2:12:41 AM	B91469
Bromomethane	ND	0.85	3.0		µg/L	1	10/1/2022 2:12:41 AM	B91469
2-Butanone	ND	2.0	10		µg/L	1	10/1/2022 2:12:41 AM	B91469
Carbon disulfide	ND	0.59	10		µg/L	1	10/1/2022 2:12:41 AM	B91469
Chlorobenzene	ND	0.16	1.0		µg/L	1	10/1/2022 2:12:41 AM	B91469
Chloroform	ND	0.13	1.0		µg/L	1	10/1/2022 2:12:41 AM	B91469
Chloromethane	ND	0.41	3.0		µg/L	1	10/1/2022 2:12:41 AM	B91469
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	10/1/2022 2:12:41 AM	B91469
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	10/1/2022 2:12:41 AM	B91469
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	10/1/2022 2:12:41 AM	B91469
Isopropylbenzene	ND	0.18	1.0		µg/L	1	10/1/2022 2:12:41 AM	B91469
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	10/1/2022 2:12:41 AM	B91469
Methylene Chloride	ND	0.50	3.0		µg/L	1	10/1/2022 2:12:41 AM	B91469
n-Butylbenzene	ND	0.25	3.0		µg/L	1	10/1/2022 2:12:41 AM	B91469
n-Propylbenzene	ND	0.18	1.0		µg/L	1	10/1/2022 2:12:41 AM	B91469
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	10/1/2022 2:12:41 AM	B91469
Styrene	ND	0.14	1.0		µg/L	1	10/1/2022 2:12:41 AM	B91469
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	10/1/2022 2:12:41 AM	B91469
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	10/1/2022 2:12:41 AM	B91469
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	10/1/2022 2:12:41 AM	B91469
Vinyl chloride	ND	0.32	1.0		µg/L	1	10/1/2022 2:12:41 AM	B91469
Xylenes, Total	ND	0.37	1.5		µg/L	1	10/1/2022 2:12:41 AM	B91469
Surr: 1,2-Dichloroethane-d4	115	0	70-130		%Rec	1	10/1/2022 2:12:41 AM	B91469
Surr: 4-Bromofluorobenzene	100	0	70-130		%Rec	1	10/1/2022 2:12:41 AM	B91469
Surr: Dibromofluoromethane	114	0	70-130		%Rec	1	10/1/2022 2:12:41 AM	B91469
Surr: Toluene-d8	96.7	0	70-130		%Rec	1	10/1/2022 2:12:41 AM	B91469

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-9-27-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 11:35:00 AM
Lab ID: 2209E92-011B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	10/4/2022 3:12:00 AM	70493

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-9-27-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 11:35:00 AM
Lab ID: 2209E92-011C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **mb**	
Diesel Range Organics (DRO)	0.045	0.016	0.064	J	mg/L	1	9/29/2022 10:19:08 PM	70480
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	9/29/2022 10:19:08 PM	70480
Surr: DNOP	101	0	42.2-138		%Rec	1	9/29/2022 10:19:08 PM	70480
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	10/12/2022 12:30:23 P	70506
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	10/12/2022 12:30:23 P	70506
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	10/12/2022 12:30:23 P	70506
Di-n-octyl phthalate	ND	12	20		µg/L	1	10/12/2022 12:30:23 P	70506
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	10/12/2022 12:30:23 P	70506
Diethyl phthalate	ND	6.0	10		µg/L	1	10/12/2022 12:30:23 P	70506
Dimethyl phthalate	ND	6.0	10		µg/L	1	10/12/2022 12:30:23 P	70506
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	10/12/2022 12:30:23 P	70506
2,4-Dinitrophenol	ND	16	20		µg/L	1	10/12/2022 12:30:23 P	70506
2-Methylphenol	ND	5.0	10		µg/L	1	10/12/2022 12:30:23 P	70506
3+4-Methylphenol	ND	5.1	10		µg/L	1	10/12/2022 12:30:23 P	70506
Phenol	ND	18	20		µg/L	1	10/12/2022 12:30:23 P	70506
Pyridine	ND	14	40		µg/L	1	10/12/2022 12:30:23 P	70506
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	10/12/2022 12:30:23 P	70506
Surr: 2-Fluorophenol	45.4	0	15-84.5		%Rec	1	10/12/2022 12:30:23 P	70506
Surr: Phenol-d5	33.2	0	15-67		%Rec	1	10/12/2022 12:30:23 P	70506
Surr: 2,4,6-Tribromophenol	59.3	0	15-108		%Rec	1	10/12/2022 12:30:23 P	70506
Surr: Nitrobenzene-d5	59.9	0	16.8-112		%Rec	1	10/12/2022 12:30:23 P	70506
Surr: 2-Fluorobiphenyl	53.9	0	15-101		%Rec	1	10/12/2022 12:30:23 P	70506
Surr: 4-Terphenyl-d14	75.5	0	34.4-134		%Rec	1	10/12/2022 12:30:23 P	70506
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	0.28	0.11	1.0	J	µg/L	1	10/3/2022 8:25:00 PM	70506
Naphthalene	ND	0.20	0.30		µg/L	1	10/3/2022 8:25:00 PM	70506
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	10/3/2022 8:25:00 PM	70506
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	10/3/2022 8:25:00 PM	70506
Acenaphthene	ND	0.14	0.30		µg/L	1	10/3/2022 8:25:00 PM	70506
Fluorene	ND	0.095	0.30		µg/L	1	10/3/2022 8:25:00 PM	70506
Phenanthrene	ND	0.16	0.30		µg/L	1	10/3/2022 8:25:00 PM	70506
Anthracene	ND	0.14	0.30		µg/L	1	10/3/2022 8:25:00 PM	70506
Fluoranthene	ND	0.14	0.30		µg/L	1	10/3/2022 8:25:00 PM	70506
Pyrene	ND	0.32	1.0		µg/L	1	10/3/2022 8:25:00 PM	70506
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	10/3/2022 8:25:00 PM	70506
Chrysene	ND	0.25	0.30		µg/L	1	10/3/2022 8:25:00 PM	70506
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	10/3/2022 8:25:00 PM	70506
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	10/3/2022 8:25:00 PM	70506

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-9-27-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 11:35:00 AM
Lab ID: 2209E92-011C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	52.5	0	15-108		%Rec	1	10/3/2022 8:25:00 PM	70506
Surr: 2-Fluorobiphenyl	41.5	0	15-107		%Rec	1	10/3/2022 8:25:00 PM	70506
Surr: 4-Terphenyl-d14	54.1	0	15-166		%Rec	1	10/3/2022 8:25:00 PM	70506

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-9-27-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 11:35:00 AM
Lab ID: 2209E92-011D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.043	0.0016	0.0030		mg/L	1	9/29/2022 2:21:15 PM	70455
Beryllium	ND	0.00088	0.0020		mg/L	1	9/29/2022 2:21:15 PM	70455
Cadmium	ND	0.0018	0.0020		mg/L	1	9/29/2022 2:21:15 PM	70455
Chromium	ND	0.0020	0.0060		mg/L	1	9/29/2022 2:21:15 PM	70455
Cobalt	ND	0.0035	0.0060		mg/L	1	9/29/2022 2:21:15 PM	70455
Nickel	ND	0.0053	0.010		mg/L	1	10/3/2022 11:15:11 AM	70455
Silver	ND	0.0018	0.0050		mg/L	1	9/29/2022 2:21:15 PM	70455
Vanadium	0.042	0.0035	0.050	J	mg/L	1	9/29/2022 2:21:15 PM	70455
Zinc	ND	0.0039	0.010		mg/L	1	10/3/2022 11:15:11 AM	70455
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/30/2022 2:19:07 PM	70455
Arsenic	0.00065	0.00013	0.0010	J	mg/L	1	9/30/2022 2:19:07 PM	70455
Lead	0.00014	0.000061	0.00050	J	mg/L	1	9/30/2022 2:19:07 PM	70455
Selenium	0.0024	0.00037	0.0010		mg/L	1	9/30/2022 2:19:07 PM	70455
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/29/2022 12:13:03 PM	70474

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-9-27-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022 11:35:00 AM
Lab ID: 2209E92-011E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.041	0.0011	0.0020		mg/L	1	10/4/2022 3:05:44 PM	A91551
Beryllium	ND	0.00088	0.0020		mg/L	1	10/4/2022 3:05:44 PM	A91551
Cadmium	ND	0.00098	0.0020		mg/L	1	10/4/2022 3:05:44 PM	A91551
Chromium	ND	0.0020	0.0060		mg/L	1	10/4/2022 3:05:44 PM	A91551
Cobalt	ND	0.0024	0.0060		mg/L	1	10/4/2022 3:05:44 PM	A91551
Nickel	ND	0.0033	0.010		mg/L	1	10/4/2022 3:05:44 PM	A91551
Silver	ND	0.0013	0.0050		mg/L	1	10/4/2022 3:05:44 PM	A91551
Vanadium	0.037	0.0017	0.050	J	mg/L	1	10/4/2022 3:05:44 PM	A91551
Zinc	0.014	0.0032	0.010		mg/L	1	10/4/2022 3:05:44 PM	A91551
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/29/2022 2:15:43 PM	B91411
Arsenic	0.00064	0.00012	0.0010	J	mg/L	1	9/29/2022 2:15:43 PM	B91411
Lead	ND	0.000057	0.00050		mg/L	1	9/29/2022 2:15:43 PM	B91411
Selenium	0.0025	0.0017	0.0050	J	mg/L	5	10/4/2022 11:48:36 AM	A91522
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/29/2022 12:15:11 PM	70474

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB 9-27-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/27/2022
Lab ID: 2209E92-012A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	10/1/2022 2:39:37 AM	B91469
Toluene	ND	0.20	1.0		µg/L	1	10/1/2022 2:39:37 AM	B91469
Ethylbenzene	ND	0.21	1.0		µg/L	1	10/1/2022 2:39:37 AM	B91469
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	10/1/2022 2:39:37 AM	B91469
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	10/1/2022 2:39:37 AM	B91469
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	10/1/2022 2:39:37 AM	B91469
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	10/1/2022 2:39:37 AM	B91469
Acetone	ND	2.5	10		µg/L	1	10/1/2022 2:39:37 AM	B91469
Bromomethane	ND	0.85	3.0		µg/L	1	10/1/2022 2:39:37 AM	B91469
2-Butanone	7.5	2.0	10	J	µg/L	1	10/1/2022 2:39:37 AM	B91469
Carbon disulfide	ND	0.59	10		µg/L	1	10/1/2022 2:39:37 AM	B91469
Chlorobenzene	ND	0.16	1.0		µg/L	1	10/1/2022 2:39:37 AM	B91469
Chloroform	ND	0.13	1.0		µg/L	1	10/1/2022 2:39:37 AM	B91469
Chloromethane	ND	0.41	3.0		µg/L	1	10/1/2022 2:39:37 AM	B91469
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	10/1/2022 2:39:37 AM	B91469
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	10/1/2022 2:39:37 AM	B91469
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	10/1/2022 2:39:37 AM	B91469
Isopropylbenzene	ND	0.18	1.0		µg/L	1	10/1/2022 2:39:37 AM	B91469
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	10/1/2022 2:39:37 AM	B91469
Methylene Chloride	ND	0.50	3.0		µg/L	1	10/1/2022 2:39:37 AM	B91469
n-Butylbenzene	ND	0.25	3.0		µg/L	1	10/1/2022 2:39:37 AM	B91469
n-Propylbenzene	ND	0.18	1.0		µg/L	1	10/1/2022 2:39:37 AM	B91469
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	10/1/2022 2:39:37 AM	B91469
Styrene	ND	0.14	1.0		µg/L	1	10/1/2022 2:39:37 AM	B91469
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	10/1/2022 2:39:37 AM	B91469
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	10/1/2022 2:39:37 AM	B91469
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	10/1/2022 2:39:37 AM	B91469
Vinyl chloride	ND	0.32	1.0		µg/L	1	10/1/2022 2:39:37 AM	B91469
Xylenes, Total	ND	0.37	1.5		µg/L	1	10/1/2022 2:39:37 AM	B91469
Surr: 1,2-Dichloroethane-d4	117	0	70-130		%Rec	1	10/1/2022 2:39:37 AM	B91469
Surr: 4-Bromofluorobenzene	105	0	70-130		%Rec	1	10/1/2022 2:39:37 AM	B91469
Surr: Dibromofluoromethane	117	0	70-130		%Rec	1	10/1/2022 2:39:37 AM	B91469
Surr: Toluene-d8	103	0	70-130		%Rec	1	10/1/2022 2:39:37 AM	B91469

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 3rd Quarter
Collection Date:
Lab ID: 2209E92-013A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	10/1/2022 1:45:48 AM	B91469
Toluene	ND	0.20	1.0		µg/L	1	10/1/2022 1:45:48 AM	B91469
Ethylbenzene	ND	0.21	1.0		µg/L	1	10/1/2022 1:45:48 AM	B91469
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	10/1/2022 1:45:48 AM	B91469
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	10/1/2022 1:45:48 AM	B91469
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	10/1/2022 1:45:48 AM	B91469
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	10/1/2022 1:45:48 AM	B91469
Acetone	ND	2.5	10		µg/L	1	10/1/2022 1:45:48 AM	B91469
Bromomethane	ND	0.85	3.0		µg/L	1	10/1/2022 1:45:48 AM	B91469
2-Butanone	ND	2.0	10		µg/L	1	10/1/2022 1:45:48 AM	B91469
Carbon disulfide	ND	0.59	10		µg/L	1	10/1/2022 1:45:48 AM	B91469
Chlorobenzene	ND	0.16	1.0		µg/L	1	10/1/2022 1:45:48 AM	B91469
Chloroform	ND	0.13	1.0		µg/L	1	10/1/2022 1:45:48 AM	B91469
Chloromethane	ND	0.41	3.0		µg/L	1	10/1/2022 1:45:48 AM	B91469
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	10/1/2022 1:45:48 AM	B91469
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	10/1/2022 1:45:48 AM	B91469
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	10/1/2022 1:45:48 AM	B91469
Isopropylbenzene	ND	0.18	1.0		µg/L	1	10/1/2022 1:45:48 AM	B91469
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	10/1/2022 1:45:48 AM	B91469
Methylene Chloride	ND	0.50	3.0		µg/L	1	10/1/2022 1:45:48 AM	B91469
n-Butylbenzene	ND	0.25	3.0		µg/L	1	10/1/2022 1:45:48 AM	B91469
n-Propylbenzene	ND	0.18	1.0		µg/L	1	10/1/2022 1:45:48 AM	B91469
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	10/1/2022 1:45:48 AM	B91469
Styrene	ND	0.14	1.0		µg/L	1	10/1/2022 1:45:48 AM	B91469
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	10/1/2022 1:45:48 AM	B91469
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	10/1/2022 1:45:48 AM	B91469
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	10/1/2022 1:45:48 AM	B91469
Vinyl chloride	ND	0.32	1.0		µg/L	1	10/1/2022 1:45:48 AM	B91469
Xylenes, Total	ND	0.37	1.5		µg/L	1	10/1/2022 1:45:48 AM	B91469
Surr: 1,2-Dichloroethane-d4	113	0	70-130		%Rec	1	10/1/2022 1:45:48 AM	B91469
Surr: 4-Bromofluorobenzene	108	0	70-130		%Rec	1	10/1/2022 1:45:48 AM	B91469
Surr: Dibromofluoromethane	114	0	70-130		%Rec	1	10/1/2022 1:45:48 AM	B91469
Surr: Toluene-d8	99.7	0	70-130		%Rec	1	10/1/2022 1:45:48 AM	B91469

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209E92**
Date Reported: **10/24/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 3rd Quarter
Collection Date:
Lab ID: 2209E92-013B
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	10/4/2022 3:27:01 AM	70493

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

ANALYTICAL REPORT

October 06, 2022

Hall Environmental Analysis Laboratory

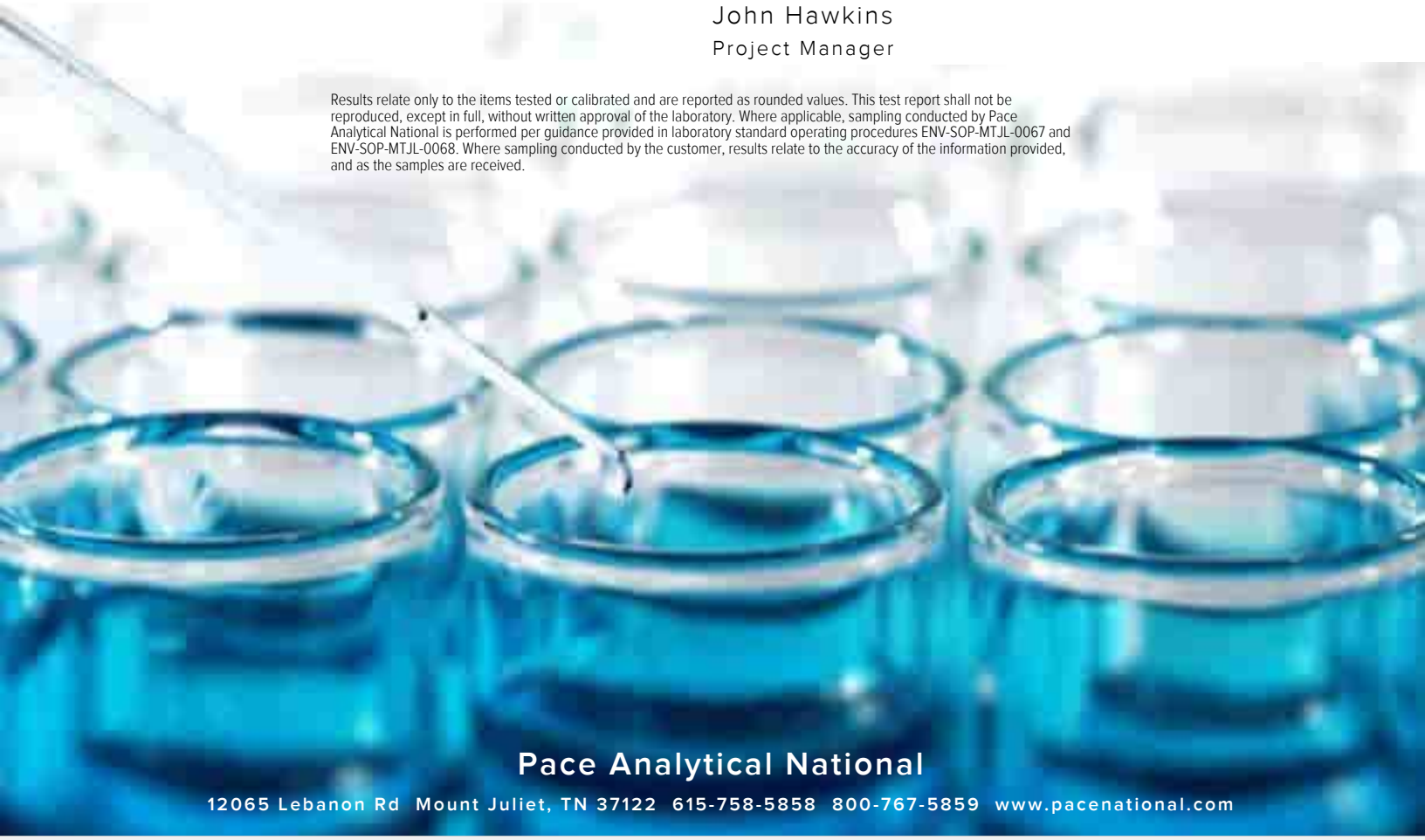
Sample Delivery Group:	L1541103
Samples Received:	09/29/2022
Project Number:	
Description:	

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By: John V Hawkins

John Hawkins
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 5

Sr: Sample Results 6

2209E92-001F EB-09-27-22 L1541103-01 6

2209E92-002F OW-1 L1541103-02 7

2209E92-003F BW-4B L1541103-03 8

2209E92-004F BW-5C L1541103-04 9

2209E92-005F BW-5B L1541103-05 10

2209E92-006F MKTF-44 L1541103-06 11

2209E92-007F MKTF-43 L1541103-07 12

2209E92-008F OW-10 L1541103-08 13

2209E92-009F MKTF-32 L1541103-09 14

2209E92-0010F MKTF-41 L1541103-10 15

2209E92-0011F DUP-9-27-22 L1541103-11 16

Qc: Quality Control Summary 17

Wet Chemistry by Method 4500CN E-2016 17

Gl: Glossary of Terms 19

Al: Accreditations & Locations 20

Sc: Sample Chain of Custody 21

SAMPLE SUMMARY

2209E92-001F EB-09-27-22 L1541103-01 GW

Collected by	Collected date/time	Received date/time
	09/27/22 08:00	09/29/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1935264	1	10/04/22 08:30	10/04/22 19:52	LDT	Mt. Juliet, TN

2209E92-002F OW-1 L1541103-02 GW

Collected by	Collected date/time	Received date/time
	09/27/22 08:35	09/29/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1935264	1	10/04/22 08:30	10/04/22 19:54	LDT	Mt. Juliet, TN

2209E92-003F BW-4B L1541103-03 GW

Collected by	Collected date/time	Received date/time
	09/27/22 09:20	09/29/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1935264	1	10/04/22 08:30	10/04/22 19:58	LDT	Mt. Juliet, TN

2209E92-004F BW-5C L1541103-04 GW

Collected by	Collected date/time	Received date/time
	09/27/22 09:45	09/29/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1935264	1	10/04/22 08:30	10/04/22 20:01	LDT	Mt. Juliet, TN

2209E92-005F BW-5B L1541103-05 GW

Collected by	Collected date/time	Received date/time
	09/27/22 10:00	09/29/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1935876	1	10/05/22 08:50	10/05/22 17:19	LDT	Mt. Juliet, TN

2209E92-006F MKTF-44 L1541103-06 GW

Collected by	Collected date/time	Received date/time
	09/27/22 10:20	09/29/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1935876	1	10/05/22 08:50	10/05/22 17:20	LDT	Mt. Juliet, TN

2209E92-007F MKTF-43 L1541103-07 GW

Collected by	Collected date/time	Received date/time
	09/27/22 10:40	09/29/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1935876	1	10/05/22 08:50	10/05/22 17:21	LDT	Mt. Juliet, TN

2209E92-008F OW-10 L1541103-08 GW

Collected by	Collected date/time	Received date/time
	09/27/22 11:00	09/29/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1935876	1	10/05/22 08:50	10/05/22 17:22	LDT	Mt. Juliet, TN

SAMPLE SUMMARY

2209E92-009F MKTF-32 L1541103-09 GW

Collected by	Collected date/time	Received date/time
	09/27/22 11:15	09/29/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1935876	1	10/05/22 08:50	10/05/22 17:23	LDT	Mt. Juliet, TN

2209E92-0010F MKTF-41 L1541103-10 GW

Collected by	Collected date/time	Received date/time
	09/27/22 11:35	09/29/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1935876	2	10/05/22 08:50	10/05/22 17:24	LDT	Mt. Juliet, TN

2209E92-0011F DUP-9-27-22 L1541103-11 GW

Collected by	Collected date/time	Received date/time
	09/27/22 11:35	09/29/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1935876	1	10/05/22 08:50	10/05/22 17:27	LDT	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Received by OCD: 4/21/2023 9:21:57 AM

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	10/04/2022 19:52	WG1935264

Released to Imaging: 4/21/2023 9:40:26 AM

2209L92-0021 GW-1
Collected date/time: 09/27/22 08:35
L1541103

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	10/04/2022 19:54	WG1935264

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	10/04/2022 19:58	WG1935264

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	10/04/2022 20:01	WG1935264

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	10/05/2022 17:19	WG1935876

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	10/05/2022 17:20	WG1935876

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	10/05/2022 17:21	WG1935876

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	10/05/2022 17:22	WG1935876

Received by OCD: 4/21/2023 9:21:57 AM

SAMPLE RESULTS - 09

2209L92-009F MRTP-32
Collected date/time: 09/27/22 11:15
L1541103

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	10/05/2022 17:23	WG1935876

Released to Imaging: 4/21/2023 9:40:26 AM

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.0100	2	10/05/2022 17:24	WG1935876

Sample Narrative:

L1541103-10 WG1935876: Dilution due to NO2NO3 interference.

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	10/05/2022 17:27	WG1935876

Method Blank (MB)

(MB) R3844690-1 10/04/22 19:32

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1541103-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1541103-01 10/04/22 19:52 • (DUP) R3844690-3 10/04/22 19:53

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

L1541103-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1541103-02 10/04/22 19:54 • (DUP) R3844690-4 10/04/22 19:57

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3844690-2 10/04/22 19:33

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.105	105	87.1-120	

L1541103-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1541103-03 10/04/22 19:58 • (MS) R3844690-5 10/04/22 19:59 • (MSD) R3844690-6 10/04/22 20:00

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0983	0.0956	98.3	95.6	1	90.0-110			2.78	20

Method Blank (MB)

(MB) R3845183-1 10/05/22 17:15

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1541617-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1541617-02 10/05/22 17:30 • (DUP) R3845183-3 10/05/22 17:31

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

L1541658-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1541658-01 10/05/22 17:32 • (DUP) R3845183-4 10/05/22 17:33

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3845183-2 10/05/22 17:16

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.106	106	87.1-120	

L1541658-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1541658-02 10/05/22 17:34 • (MS) R3845183-5 10/05/22 17:35 • (MSD) R3845183-6 10/05/22 17:36

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.103	0.102	103	102	1	90.0-110			0.976	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
	The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Received by OCD: 4/21/2023 9:21:57 AM

ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

J218

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

L154103

SUB CONTRATOR: Pace TN	COMPANY: PACE TN	PHONE: (800) 767-5859	FAX: (615) 758-5859
ADDRESS: 12065 Lebanon Rd		ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: Mt. Juliet, TN 37122			

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS	
1	2209E92-001F	EB-09-27-22	500AMBHDP E-NAOH	Groundwater	9/27/2022 8:00:00 AM	1	Total Cyanide J and MDL	-01
2	2209E92-002F	OW-1	500AMBHDP E-NAOH	Groundwater	9/27/2022 8:35:00 AM	1	Total Cyanide J and MDL	-02
3	2209E92-003F	BW-4B	500AMBHDP E-NAOH	Groundwater	9/27/2022 9:20:00 AM	1	Total Cyanide J and MDL	-03
4	2209E92-004F	BW-5C	500AMBHDP E-NAOH	Groundwater	9/27/2022 9:45:00 AM	1	Total Cyanide J and MDL	-04
5	2209E92-005F	BW-5B	500AMBHDP E-NAOH	Groundwater	9/27/2022 10:00:00 AM	1	Total Cyanide J and MDL	-09
6	2209E92-006F	MKTF-44	500AMBHDP E-NAOH	Groundwater	9/27/2022 10:20:00 AM	1	Total Cyanide J and MDL	-06
7	2209E92-007F	MKTF-43	500AMBHDP E-NAOH	Groundwater	9/27/2022 10:40:00 AM	1	Total Cyanide J and MDL	-07
8	2209E92-008F	OW-10	500AMBHDP E-NAOH	Groundwater	9/27/2022 11:00:00 AM	1	Total Cyanide J and MDL	-08
9	2209E92-009F	MKTF-32	500AMBHDP E-NAOH	Groundwater	9/27/2022 11:15:00 AM	1	Total Cyanide J and MDL	-05
10	2209E92-010F	MKTF-41	500AMBHDP E-NAOH	Groundwater	9/27/2022 11:35:00 AM	1	Total Cyanide J and MDL	-10
11	2209E92-011F	DUP-9-27-22	500AMBHDP E-NAOH	Groundwater	9/27/2022 11:35:00 AM	1	Total Cyanide J and MDL	-11

0221 5755 8093 2518
Cont.-11 TB-0

Sample Receipt Checklist

COC Seal Present/Intact:	Y N		If Applicable
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	Y N	Pres.Correct/Check:	Y N
Correct bottles used:	Y N		
Sufficient volume sent:	Y N		
RAD Screen <0.5 mR/hr:	Y N		

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By: CMC	Date: 9/28/2022	Time: 8:14 AM	Received By: [signature]	Date: 09/29/22	Time: 0930
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☒ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:

☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY

Temp of samples 0.2 (0-0.7) °C Attempt to Cool ?

Comments:

Released to Imaging: 4/21/2023 9:40:26 AM

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209E92**
24-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70455** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **70455** RunNo: **91434**
Prep Date: **9/28/2022** Analysis Date: **9/29/2022** SeqNo: **3273995** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Silver	ND	0.0050								
Vanadium	ND	0.050								

Sample ID: **LCSLL-70455** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **70455** RunNo: **91434**
Prep Date: **9/28/2022** Analysis Date: **9/29/2022** SeqNo: **3273996** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0024	0.0030	0.002000	0	120	50	150			J
Beryllium	0.0020	0.0020	0.002000	0	97.9	50	150			J
Cadmium	0.0027	0.0020	0.002000	0	133	50	150			
Chromium	0.0051	0.0060	0.006000	0	85.1	50	150			J
Cobalt	0.0068	0.0060	0.006000	0	114	50	150			
Silver	0.0044	0.0050	0.005000	0	87.3	50	150			J
Vanadium	0.0096	0.050	0.01000	0	96.3	50	150			J

Sample ID: **LCS-70455** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **70455** RunNo: **91434**
Prep Date: **9/28/2022** Analysis Date: **9/29/2022** SeqNo: **3273997** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0030	0.5000	0	97.3	85	115			
Beryllium	0.51	0.0020	0.5000	0	102	85	115			
Cadmium	0.48	0.0020	0.5000	0	96.7	85	115			
Chromium	0.48	0.0060	0.5000	0	95.9	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.5	85	115			
Silver	0.092	0.0050	0.1000	0	92.0	85	115			
Vanadium	0.50	0.050	0.5000	0	100	85	115			

Sample ID: **MB-70455** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **70455** RunNo: **91484**
Prep Date: **9/28/2022** Analysis Date: **10/3/2022** SeqNo: **3276568** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nickel	ND	0.010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209E92**

24-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70455**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **70455**	RunNo: **91484**
Prep Date: **9/28/2022**	Analysis Date: **10/3/2022**	SeqNo: **3276568** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	ND	0.010								

Sample ID: **LCSLL-70455**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **70455**	RunNo: **91484**
Prep Date: **9/28/2022**	Analysis Date: **10/3/2022**	SeqNo: **3276569** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nickel	0.0035	0.010	0.005000	0	69.1	50	150			J
Zinc	0.0071	0.010	0.01000	0	70.9	50	150			J

Sample ID: **LCS-70455**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **70455**	RunNo: **91484**
Prep Date: **9/28/2022**	Analysis Date: **10/3/2022**	SeqNo: **3276570** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nickel	0.48	0.010	0.5000	0	95.4	85	115			
Zinc	0.50	0.010	0.5000	0	101	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209E92**

24-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-A** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**

Client ID: **PBW** Batch ID: **A91551** RunNo: **91551**

Prep Date: Analysis Date: **10/4/2022** SeqNo: **3279588** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS-A** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**

Client ID: **BatchQC** Batch ID: **A91551** RunNo: **91551**

Prep Date: Analysis Date: **10/4/2022** SeqNo: **3279589** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0019	0.0020	0.002000	0	96.5	50	150			J
Beryllium	0.0013	0.0020	0.002000	0	64.9	50	150			J
Cadmium	0.0022	0.0020	0.002000	0	111	50	150			
Chromium	0.0059	0.0060	0.006000	0	98.2	50	150			J
Cobalt	0.0060	0.0060	0.006000	0	99.8	50	150			J
Nickel	0.0055	0.010	0.005000	0	110	50	150			J
Silver	0.0052	0.0050	0.005000	0	104	50	150			
Vanadium	0.0073	0.050	0.01000	0	72.8	50	150			J
Zinc	0.010	0.010	0.01000	0	103	50	150			

Sample ID: **LCS-A** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**

Client ID: **LCSW** Batch ID: **A91551** RunNo: **91551**

Prep Date: Analysis Date: **10/4/2022** SeqNo: **3279590** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0020	0.5000	0	99.7	85	115			
Beryllium	0.49	0.0020	0.5000	0	98.1	85	115			
Cadmium	0.48	0.0020	0.5000	0	96.8	85	115			
Chromium	0.49	0.0060	0.5000	0	98.8	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.0	85	115			
Nickel	0.49	0.010	0.5000	0	98.4	85	115			
Silver	0.11	0.0050	0.1000	0	107	85	115			
Vanadium	0.49	0.050	0.5000	0	98.2	85	115			
Zinc	0.48	0.010	0.5000	0	96.5	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209E92**
24-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **A91411**	RunNo: **91411**
Prep Date:	Analysis Date: **9/29/2022**	SeqNo: **3272724** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **A91411**	RunNo: **91411**
Prep Date:	Analysis Date: **9/29/2022**	SeqNo: **3272725** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0010	0.0010	0.001000	0	99.9	50	150			J
Arsenic	0.0011	0.0010	0.001000	0	106	50	150			
Lead	0.00054	0.00050	0.0005000	0	108	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **A91411**	RunNo: **91411**
Prep Date:	Analysis Date: **9/29/2022**	SeqNo: **3272726** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.7	85	115			
Arsenic	0.024	0.0010	0.02500	0	97.8	85	115			
Lead	0.012	0.00050	0.01250	0	95.8	85	115			

Sample ID: **MB-70455**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **70455**	RunNo: **91465**
Prep Date: **9/28/2022**	Analysis Date: **9/30/2022**	SeqNo: **3275543** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **MSLCSLL-70455**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **70455**	RunNo: **91465**
Prep Date: **9/28/2022**	Analysis Date: **9/30/2022**	SeqNo: **3275544** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00096	0.0010	0.001000	0	95.7	50	150			J
Arsenic	0.0010	0.0010	0.001000	0	103	50	150			
Lead	0.00049	0.00050	0.0005000	0	99.0	50	150			J

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209E92**

24-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MSLCSLL-70455**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **70455**	RunNo: **91465**
Prep Date: **9/28/2022**	Analysis Date: **9/30/2022**	SeqNo: **3275544** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.00085	0.0010	0.001000	0	84.9	50	150			J

Sample ID: **MSLCS-70455**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **70455**	RunNo: **91465**
Prep Date: **9/28/2022**	Analysis Date: **9/30/2022**	SeqNo: **3275545** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	101	85	115			
Arsenic	0.024	0.0010	0.02500	0	97.0	85	115			
Lead	0.012	0.00050	0.01250	0	99.7	85	115			
Selenium	0.025	0.0010	0.02500	0	98.9	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209E92**
24-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A91411**	RunNo: **91411**
Prep Date:	Analysis Date: **9/29/2022**	SeqNo: **3272668** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A91411**	RunNo: **91411**
Prep Date:	Analysis Date: **9/29/2022**	SeqNo: **3272669** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0010	0.0010	0.001000	0	99.9	50	150			J
Arsenic	0.0011	0.0010	0.001000	0	106	50	150			
Lead	0.00054	0.00050	0.0005000	0	108	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A91411**	RunNo: **91411**
Prep Date:	Analysis Date: **9/29/2022**	SeqNo: **3272670** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.7	85	115			
Arsenic	0.024	0.0010	0.02500	0	97.8	85	115			
Lead	0.012	0.00050	0.01250	0	95.8	85	115			

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B91411**	RunNo: **91411**
Prep Date:	Analysis Date: **9/29/2022**	SeqNo: **3272672** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B91411**	RunNo: **91411**
Prep Date:	Analysis Date: **9/29/2022**	SeqNo: **3272673** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00097	0.0010	0.001000	0	96.9	50	150			J
Arsenic	0.0011	0.0010	0.001000	0	109	50	150			
Lead	0.00050	0.00050	0.0005000	0	99.6	50	150			J

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209E92**
24-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B91411**	RunNo: **91411**
Prep Date:	Analysis Date: **9/29/2022**	SeqNo: **3272673** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.0012	0.0010	0.001000	0	120	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B91411**	RunNo: **91411**
Prep Date:	Analysis Date: **9/29/2022**	SeqNo: **3272674** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.8	85	115			
Arsenic	0.025	0.0010	0.02500	0	98.3	85	115			
Lead	0.012	0.00050	0.01250	0	97.5	85	115			
Selenium	0.027	0.0010	0.02500	0	109	85	115			

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B91488**	RunNo: **91488**
Prep Date:	Analysis Date: **10/3/2022**	SeqNo: **3276766** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B91488**	RunNo: **91488**
Prep Date:	Analysis Date: **10/3/2022**	SeqNo: **3276767** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.00060	0.0010	0.001000	0	59.6	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B91488**	RunNo: **91488**
Prep Date:	Analysis Date: **10/3/2022**	SeqNo: **3276768** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.027	0.0010	0.02500	0	109	85	115			

Sample ID: **2209E92-002EMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **OW-1**	Batch ID: **B91488**	RunNo: **91488**
Prep Date:	Analysis Date: **10/3/2022**	SeqNo: **3276794** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.032	0.0010	0.02500	0.002459	118	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209E92**
24-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **2209E92-002EMSDL**	SampType: **MSD**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **OW-1**	Batch ID: **B91488**	RunNo: **91488**
Prep Date:	Analysis Date: **10/3/2022**	SeqNo: **3276795** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.031	0.0010	0.02500	0.002459	112	70	130	4.34	20	

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A91522**	RunNo: **91522**
Prep Date:	Analysis Date: **10/4/2022**	SeqNo: **3278154** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A91522**	RunNo: **91522**
Prep Date:	Analysis Date: **10/4/2022**	SeqNo: **3278155** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.0012	0.0010	0.001000	0	123	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A91522**	RunNo: **91522**
Prep Date:	Analysis Date: **10/4/2022**	SeqNo: **3278156** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.025	0.0010	0.02500	0	99.0	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209E92**

24-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70473**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **PBW**	Batch ID: **70473**	RunNo: **91412**							
Prep Date: **9/29/2022**	Analysis Date: **9/29/2022**	SeqNo: **3272738**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-70473**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **BatchQC**	Batch ID: **70473**	RunNo: **91412**							
Prep Date: **9/29/2022**	Analysis Date: **9/29/2022**	SeqNo: **3272739**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00014	0.00020	0.0001500	0	91.8	50	150			J

Sample ID: **LCS-70473**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **LCSW**	Batch ID: **70473**	RunNo: **91412**							
Prep Date: **9/29/2022**	Analysis Date: **9/29/2022**	SeqNo: **3272740**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0052	0.00020	0.005000	0	103	85	115			

Sample ID: **MB-70474**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **PBW**	Batch ID: **70474**	RunNo: **91412**							
Prep Date: **9/29/2022**	Analysis Date: **9/29/2022**	SeqNo: **3272741**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-70474**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **BatchQC**	Batch ID: **70474**	RunNo: **91412**							
Prep Date: **9/29/2022**	Analysis Date: **9/29/2022**	SeqNo: **3272742**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00014	0.00020	0.0001500	0	91.7	50	150			J

Sample ID: **LCS-70474**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **LCSW**	Batch ID: **70474**	RunNo: **91412**							
Prep Date: **9/29/2022**	Analysis Date: **9/29/2022**	SeqNo: **3272743**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0053	0.00020	0.005000	0	106	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209E92**
24-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **2209E92-010DMS** SampType: **MS** TestCode: **EPA Method 245.1: Mercury**
Client ID: **MKTF-41** Batch ID: **70473** RunNo: **91412**
Prep Date: **9/29/2022** Analysis Date: **9/29/2022** SeqNo: **3272778** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0044	0.00020	0.005000	0	88.3	75	125			

Sample ID: **2209E92-010DMSD** SampType: **MSD** TestCode: **EPA Method 245.1: Mercury**
Client ID: **MKTF-41** Batch ID: **70473** RunNo: **91412**
Prep Date: **9/29/2022** Analysis Date: **9/29/2022** SeqNo: **3272779** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0044	0.00020	0.005000	0	87.9	75	125	0.447	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209E92**

24-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70493**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **70493**	RunNo: **91564**							
Prep Date: **10/3/2022**	Analysis Date: **10/3/2022**	SeqNo: **3279928**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **MB-70493**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **70493**	RunNo: **91564**							
Prep Date: **10/3/2022**	Analysis Date: **10/3/2022**	SeqNo: **3279929**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-70493**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **LCSW**	Batch ID: **70493**	RunNo: **91564**							
Prep Date: **10/3/2022**	Analysis Date: **10/3/2022**	SeqNo: **3279940**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.098	0.010	0.1000	0	98.0	70	130			

Sample ID: **LCSD-70493**	SampType: **LCSD**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **LCSS02**	Batch ID: **70493**	RunNo: **91564**							
Prep Date: **10/3/2022**	Analysis Date: **10/3/2022**	SeqNo: **3279941**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.091	0.010	0.1000	0	90.7	70	130	7.71	20	

Sample ID: **LCS-70493**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **LCSW**	Batch ID: **70493**	RunNo: **91564**							
Prep Date: **10/3/2022**	Analysis Date: **10/3/2022**	SeqNo: **3285791**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.093	0.010	0.1000	0	93.4	70	130			

Sample ID: **LCSD-70493**	SampType: **LCSD**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **LCSS02**	Batch ID: **70493**	RunNo: **91564**							
Prep Date: **10/3/2022**	Analysis Date: **10/3/2022**	SeqNo: **3285792**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.084	0.010	0.1000	0	84.5	70	130	10.1	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209E92**
24-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70480**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **PBW**	Batch ID: **70480**	RunNo: **91421**
Prep Date: **9/29/2022**	Analysis Date: **9/29/2022**	SeqNo: **3272988** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.043	0.064								J
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.036		0.03750		96.9	42.2	138			

Sample ID: **LCS-70480**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSW**	Batch ID: **70480**	RunNo: **91421**
Prep Date: **9/29/2022**	Analysis Date: **9/29/2022**	SeqNo: **3272989** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.17	0.064	0.1875	0	90.9	31.7	75.4			S
Surr: DNOP	0.020		0.01875		107	42.2	138			

Sample ID: **LCSD-70480**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02**	Batch ID: **70480**	RunNo: **91421**
Prep Date: **9/29/2022**	Analysis Date: **9/29/2022**	SeqNo: **3272990** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.14	0.064	0.1875	0	73.9	31.7	75.4	20.7	20	R
Surr: DNOP	0.018		0.01875		98.4	42.2	138	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209E92**
24-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **A91419**	RunNo: **91419**
Prep Date:	Analysis Date: **9/29/2022**	SeqNo: **3272963** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	92.6	80	120			
Surr: BFB	42		20.00		212	70	130			S

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **A91419**	RunNo: **91419**
Prep Date:	Analysis Date: **9/29/2022**	SeqNo: **3272964** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	21		20.00		104	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209E92**
24-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **B91469**	RunNo: **91469**
Prep Date:	Analysis Date: **9/30/2022**	SeqNo: **3275865** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	23	1.0	20.00	0	113	70	130			
Toluene	19	1.0	20.00	0	96.9	70	130			
Chlorobenzene	19	1.0	20.00	0	95.8	70	130			
1,1-Dichloroethene	20	1.0	20.00	0	101	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	101	70	130			
Surr: 1,2-Dichloroethane-d4	12		10.00		116	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.2	70	130			
Surr: Dibromofluoromethane	11		10.00		115	70	130			
Surr: Toluene-d8	9.6		10.00		96.4	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **B91469**	RunNo: **91469**
Prep Date:	Analysis Date: **9/30/2022**	SeqNo: **3275905** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209E92**
24-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **B91469**	RunNo: **91469**
Prep Date:	Analysis Date: **9/30/2022**	SeqNo: **3275905** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		109	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130			
Surr: Dibromofluoromethane	11		10.00		111	70	130			
Surr: Toluene-d8	10		10.00		104	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **A91498**	RunNo: **91498**
Prep Date:	Analysis Date: **10/3/2022**	SeqNo: **3277302** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	1.0								
Surr: 1,2-Dichloroethane-d4	11		10.00		115	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	12		10.00		116	70	130			
Surr: Toluene-d8	10		10.00		104	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209E92**
24-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70506**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **70506**	RunNo: **91725**
Prep Date: **9/30/2022**	Analysis Date: **10/11/2022**	SeqNo: **3288102** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Anthracene	ND	10								
Benz(a)anthracene	ND	5.0								
Benzo(b)fluoranthene	ND	10								
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	10								
2,4-Dinitrophenol	ND	20								
Fluoranthene	ND	10								
Fluorene	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
1-Methylnaphthalene	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
Naphthalene	ND	5.0								
Phenanthrene	ND	10								
Phenol	ND	20								
Pyrene	ND	10								
Pyridine	ND	40								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	11		200.0		5.66	15	84.5			S
Surr: Phenol-d5	20		200.0		9.97	15	67			S
Surr: 2,4,6-Tribromophenol	16		200.0		7.90	15	108			S
Surr: Nitrobenzene-d5	38		100.0		38.1	16.8	112			
Surr: 2-Fluorobiphenyl	33		100.0		32.9	15	101			
Surr: 4-Terphenyl-d14	69		100.0		68.7	34.4	134			

Sample ID: **LCS-70506**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **70506**	RunNo: **91725**
Prep Date: **9/30/2022**	Analysis Date: **10/11/2022**	SeqNo: **3288103** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209E92**

24-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **LCS-70506**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **70506**	RunNo: **91725**
Prep Date: **9/30/2022**	Analysis Date: **10/11/2022**	SeqNo: **3288103** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	61	10	100.0	0	60.5	21.3	104			
1,4-Dichlorobenzene	47	5.0	100.0	0	46.5	15	89.8			
Phenol	78	20	200.0	0	39.0	17	61.1			
Pyrene	75	10	100.0	0	74.6	61	123			
Surr: 2-Fluorophenol	92		200.0		45.9	15	84.5			
Surr: Phenol-d5	69		200.0		34.5	15	67			
Surr: 2,4,6-Tribromophenol	130		200.0		63.7	15	108			
Surr: Nitrobenzene-d5	62		100.0		62.1	16.8	112			
Surr: 2-Fluorobiphenyl	54		100.0		53.6	15	101			
Surr: 4-Terphenyl-d14	85		100.0		85.2	34.4	134			

Sample ID: **LCSD-70506**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **70506**	RunNo: **91725**
Prep Date: **9/30/2022**	Analysis Date: **10/11/2022**	SeqNo: **3288104** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	49	10	100.0	0	49.3	21.3	104	20.5	45.3	
1,4-Dichlorobenzene	38	5.0	100.0	0	38.0	15	89.8	20.1	39.6	
Phenol	64	20	200.0	0	32.1	17	61.1	19.4	42.5	
Pyrene	73	10	100.0	0	73.4	61	123	1.59	11.8	
Surr: 2-Fluorophenol	79		200.0		39.5	15	84.5	0	0	
Surr: Phenol-d5	59		200.0		29.7	15	67	0	0	
Surr: 2,4,6-Tribromophenol	110		200.0		54.1	15	108	0	0	
Surr: Nitrobenzene-d5	52		100.0		51.8	16.8	112	0	0	
Surr: 2-Fluorobiphenyl	45		100.0		45.4	15	101	0	0	
Surr: 4-Terphenyl-d14	85		100.0		84.8	34.4	134	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209E92**
24-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **mb-70506**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **70506**	RunNo: **91491**
Prep Date: **9/30/2022**	Analysis Date: **10/3/2022**	SeqNo: **3277033** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.30								
1-Methylnaphthalene	ND	0.30								
2-Methylnaphthalene	ND	0.30								
Acenaphthene	ND	0.30								
Fluorene	ND	0.30								
Phenanthrene	ND	0.30								
Anthracene	ND	0.30								
Fluoranthene	ND	0.30								
Pyrene	ND	1.0								
Benz(a)anthracene	ND	0.30								
Chrysene	ND	0.30								
Benzo(b)fluoranthene	ND	0.30								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	31		100.0		31.2	15	108			
Surr: 2,4,6-Tribromophenol	13		200.0		6.32	15	112			S
Surr: 2-Fluorobiphenyl	27		100.0		26.5	15	107			
Surr: 4-Terphenyl-d14	49		100.0		48.8	15	166			

Sample ID: **lcs-70506-lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **70506**	RunNo: **91491**
Prep Date: **9/30/2022**	Analysis Date: **10/3/2022**	SeqNo: **3277034** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.84	0.30	2.000	0	42.0	15	60.5			
Naphthalene	1.2	0.30	2.000	0	61.0	15	78.3			
1-Methylnaphthalene	1.2	0.30	2.000	0	62.0	15	79.6			
2-Methylnaphthalene	1.2	0.30	2.000	0	61.0	15	78.6			
Acenaphthene	1.4	0.30	2.000	0	72.0	15	92			
Fluorene	1.5	0.30	2.000	0	77.0	15	96			
Phenanthrene	1.6	0.30	2.000	0	80.0	21	103			
Anthracene	1.8	0.30	2.000	0	91.0	21.1	106			
Fluoranthene	2.0	0.30	2.000	0	101	32.8	119			
Pyrene	1.8	1.0	2.000	0	90.0	34.1	110			
Benz(a)anthracene	2.3	0.30	2.000	0	113	32	132			
Chrysene	1.7	0.30	2.000	0	86.0	31.3	112			
Benzo(b)fluoranthene	2.0	0.30	2.000	0	100	34.1	119			
Indeno(1,2,3-cd)pyrene	2.2	0.30	2.000	0	110	24.7	152			
Surr: Nitrobenzene-d5	66		100.0		65.8	15	108			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209E92**

24-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **lcs-70506-lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **70506**	RunNo: **91491**
Prep Date: **9/30/2022**	Analysis Date: **10/3/2022**	SeqNo: **3277034** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	77		200.0		38.5	15	112			
Surr: 2-Fluorobiphenyl	56		100.0		55.7	15	107			
Surr: 4-Terphenyl-d14	64		100.0		63.9	15	166			

Sample ID: **lcsd-70506-lf**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02**	Batch ID: **70506**	RunNo: **91491**
Prep Date: **9/30/2022**	Analysis Date: **10/3/2022**	SeqNo: **3277035** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.62	0.30	2.000	0	31.0	15	60.5	30.1	29.7	R
Naphthalene	0.80	0.30	2.000	0	40.0	15	78.3	41.6	31.7	R
1-Methylnaphthalene	0.80	0.30	2.000	0	40.0	15	79.6	43.1	31.4	R
2-Methylnaphthalene	0.78	0.30	2.000	0	39.0	15	78.6	44.0	30.5	R
Acenaphthene	0.98	0.30	2.000	0	49.0	15	92	38.0	30.5	R
Fluorene	1.2	0.30	2.000	0	61.0	15	96	23.2	25.1	
Phenanthrene	1.2	0.30	2.000	0	58.0	21	103	31.9	26.4	R
Anthracene	1.3	0.30	2.000	0	66.0	21.1	106	31.8	14.4	R
Fluoranthene	1.5	0.30	2.000	0	75.0	32.8	119	29.5	14.8	R
Pyrene	1.4	1.0	2.000	0	68.0	34.1	110	27.8	19.2	R
Benz(a)anthracene	1.7	0.30	2.000	0	85.0	32	132	28.3	29.3	
Chrysene	1.3	0.30	2.000	0	66.0	31.3	112	26.3	19	R
Benzo(b)fluoranthene	1.5	0.30	2.000	0	76.0	34.1	119	27.3	31.6	
Indeno(1,2,3-cd)pyrene	1.6	0.30	2.000	0	81.0	24.7	152	30.4	21.3	R
Surr: Nitrobenzene-d5	51		100.0		51.0	15	108	0	0	
Surr: 2,4,6-Tribromophenol	66		200.0		32.8	15	112	0	0	
Surr: 2-Fluorobiphenyl	43		100.0		42.6	15	107	0	0	
Surr: 4-Terphenyl-d14	46		100.0		46.4	15	166	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **Marathon** Work Order Number: **2209E92** RcptNo: 1

Received By: **Juan Rojas** **9/28/2022 7:25:00 AM**

Completed By: **Cheyenne Cason** **9/28/2022 8:05:25 AM**

Reviewed By: JRA 9/28/22

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☑	No ☐	NA ☐
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: 2 2 11 (<2 or >12 unless noted)

Adjusted? NO

Checked by: JRA 9/28/22

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.9	Good	Yes			
2	2.0	Good	Yes			
3	2.2	Good	Yes			
4	1.0	Good	Yes			

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **Marathon** Work Order Number: **2209E92** RcptNo: 1

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
5	3.0	Good	Yes			

Released to Imaging: 4/21/2023 9:40:26 AM
Received by OCD: 4/21/2023 9:21:57 AM

Chain-of-Custody Record

ent: Marathon Gallup Refinery

iling Address: 92 Giant Crossing Road

Jamestown, NM,87347

one #: 808-640-1823

ail or Fax#:

QC Package:

tandard ☐ Level 4 (Full Validation)

reditation: ☐ Az Compliance

NELAC ☐ Other

DD (Type)

Turn-Around Time:

X Standard Rush

Project Name:

2022 GW Sampling 3rd Quarter

Project #: **697-080-001**

Project Manager:

Lesli Alexander/Mackensie Swift

Sampler:

On Ice: ☐ Yes ☐ No

# of Coolers: 5

Cooler Temp(including CF): See Remarks

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

:e	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2209E92	See Analyte List	8260B: VOC	8270C: SVOC	8270C SIM: PAH, 1,4 Dioxane	8015: TPH GRO/DRO/MRO	E200.7: Metals	E200.7: Dissolved Metals	E245.1 Mercury	E504.1: EDB	E335.4: Cyanide Subbed		537.1: PFAS	SM 5201B: BOD	410.4: COD	SM9223B E Coli
9/27	8:00		EB-9-27-22	13		001	X	X	X	X	X	X	X	X	X	X					
9/27	8:35		OW-1	13		002	X	X	X	X	X	X	X	X	X	X					
9/27	9:20		BW-4B	13		003	X	X	X	X	X	X	X	X	X	X					
9/27	9:45		BW-5C	13		004	X	X	X	X	X	X	X	X	X	X					
9/27	10:00		BW5B	13		005	X	X	X	X	X	X	X	X	X	X					
9/27	10:20		MKTF-44	13		006	X	X	X	X	X	X	X	X	X	X					
9/27	10:40		MKTF-43	13		007	X	X	X	X	X	X	X	X	X	X					
9/27	11:00		OW-10	13		008	X	X	X	X	X	X	X	X	X	X					
9/27	11:15		MKTF-32	13		009	X	X	X	X	X	X	X	X	X	X					
9/27	11:35		MKTF-41	13		010	X	X	X	X	X	X	X	X	X	X					
9/27	11:35		DUP-9-27-22	13		011	X	X	X	X	X	X	X	X	X	X					
9/27	—		FD 9-27-22	3		012	X	X	X												

Time:	Relinquished by:	Received by:	Via:	Date	Time
9/27 12:15	H. Jamison Tafoya		courier	9/28/22	7:25
Time:	Relinquished by:	Received by:	Via:	Date	Time

3.8+0.1=3.9
1.9+0.1=2.0
2.1+0.1=2.2
0.9+0.1=1.0

2.9+0.1=3.0
Trip Blank -013

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 17, 2022

Lesli Alexander

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX: (505) 632-3911

RE: 2022 GW Sampling 3rd Quarter OrderNo.: 2209F93

Dear Lesli Alexander:

Hall Environmental Analysis Laboratory received 9 sample(s) on 9/29/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **2209F93**
Date: **10/17/2022**

CLIENT: Marathon
Project: 2022 GW Sampling 3rd Quarter

Analytical Notes Regarding EPA Method 8270SIMS:
The method blank had a low surrogate recovery for 2,4,6-Tribromophenol

Analytical Report
Lab Order: **2209F93**
Date Reported: **10/17/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-28-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/28/2022 9:30:00 AM
Lab ID: 2209F93-001A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	9/30/2022 12:13:00 PM	A91437
Surr: BFB	103	0	70-130		%Rec	1	9/30/2022 12:13:00 PM	A91437
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	10/5/2022 10:33:00 PM	R91553
Toluene	ND	0.20	1.0		µg/L	1	10/5/2022 10:33:00 PM	R91553
Ethylbenzene	ND	0.21	1.0		µg/L	1	10/5/2022 10:33:00 PM	R91553
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	10/5/2022 10:33:00 PM	R91553
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	10/5/2022 10:33:00 PM	R91553
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	10/5/2022 10:33:00 PM	R91553
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	10/5/2022 10:33:00 PM	R91553
Acetone	12	2.5	10		µg/L	1	10/5/2022 10:33:00 PM	R91553
Bromomethane	ND	0.85	3.0		µg/L	1	10/5/2022 10:33:00 PM	R91553
2-Butanone	ND	2.0	10		µg/L	1	10/5/2022 10:33:00 PM	R91553
Carbon disulfide	ND	0.59	10		µg/L	1	10/5/2022 10:33:00 PM	R91553
Chlorobenzene	ND	0.16	1.0		µg/L	1	10/5/2022 10:33:00 PM	R91553
Chloroform	ND	0.13	1.0		µg/L	1	10/5/2022 10:33:00 PM	R91553
Chloromethane	ND	0.41	3.0		µg/L	1	10/5/2022 10:33:00 PM	R91553
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	10/5/2022 10:33:00 PM	R91553
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	10/5/2022 10:33:00 PM	R91553
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	10/5/2022 10:33:00 PM	R91553
Isopropylbenzene	ND	0.18	1.0		µg/L	1	10/5/2022 10:33:00 PM	R91553
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	10/5/2022 10:33:00 PM	R91553
Methylene Chloride	ND	0.50	3.0		µg/L	1	10/5/2022 10:33:00 PM	R91553
n-Butylbenzene	ND	0.25	3.0		µg/L	1	10/5/2022 10:33:00 PM	R91553
n-Propylbenzene	ND	0.18	1.0		µg/L	1	10/5/2022 10:33:00 PM	R91553
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	10/5/2022 10:33:00 PM	R91553
Styrene	ND	0.14	1.0		µg/L	1	10/5/2022 10:33:00 PM	R91553
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	10/5/2022 10:33:00 PM	R91553
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	10/5/2022 10:33:00 PM	R91553
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	10/5/2022 10:33:00 PM	R91553
Vinyl chloride	ND	0.32	1.0		µg/L	1	10/5/2022 10:33:00 PM	R91553
Xylenes, Total	ND	0.37	1.5		µg/L	1	10/5/2022 10:33:00 PM	R91553
Surr: 1,2-Dichloroethane-d4	97.3	0	70-130		%Rec	1	10/5/2022 10:33:00 PM	R91553
Surr: 4-Bromofluorobenzene	97.9	0	70-130		%Rec	1	10/5/2022 10:33:00 PM	R91553
Surr: Dibromofluoromethane	98.1	0	70-130		%Rec	1	10/5/2022 10:33:00 PM	R91553
Surr: Toluene-d8	95.5	0	70-130		%Rec	1	10/5/2022 10:33:00 PM	R91553

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209F93**
Date Reported: **10/17/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-28-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/28/2022 9:30:00 AM
Lab ID: 2209F93-001B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	10/4/2022 3:57:07 AM	70493

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209F93**
Date Reported: **10/17/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-28-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/28/2022 9:30:00 AM
Lab ID: 2209F93-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **mb**	
Diesel Range Organics (DRO)	0.019	0.016	0.064	J	mg/L	1	10/3/2022 9:13:44 PM	70492
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	10/3/2022 9:13:44 PM	70492
Surr: DNOP	102	0	42.2-138		%Rec	1	10/3/2022 9:13:44 PM	70492
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	10/12/2022 1:11:59 PM	70506
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	10/12/2022 1:11:59 PM	70506
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	10/12/2022 1:11:59 PM	70506
Di-n-octyl phthalate	ND	12	20		µg/L	1	10/12/2022 1:11:59 PM	70506
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	10/12/2022 1:11:59 PM	70506
Diethyl phthalate	ND	6.0	10		µg/L	1	10/12/2022 1:11:59 PM	70506
Dimethyl phthalate	ND	6.0	10		µg/L	1	10/12/2022 1:11:59 PM	70506
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	10/12/2022 1:11:59 PM	70506
2,4-Dinitrophenol	ND	16	20		µg/L	1	10/12/2022 1:11:59 PM	70506
2-Methylphenol	ND	5.0	10		µg/L	1	10/12/2022 1:11:59 PM	70506
3+4-Methylphenol	ND	5.1	10		µg/L	1	10/12/2022 1:11:59 PM	70506
Phenol	ND	18	20		µg/L	1	10/12/2022 1:11:59 PM	70506
Pyridine	ND	14	40		µg/L	1	10/12/2022 1:11:59 PM	70506
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	10/12/2022 1:11:59 PM	70506
Surr: 2-Fluorophenol	41.3	0	15-84.5		%Rec	1	10/12/2022 1:11:59 PM	70506
Surr: Phenol-d5	30.4	0	15-67		%Rec	1	10/12/2022 1:11:59 PM	70506
Surr: 2,4,6-Tribromophenol	56.9	0	15-108		%Rec	1	10/12/2022 1:11:59 PM	70506
Surr: Nitrobenzene-d5	52.3	0	16.8-112		%Rec	1	10/12/2022 1:11:59 PM	70506
Surr: 2-Fluorobiphenyl	47.8	0	15-101		%Rec	1	10/12/2022 1:11:59 PM	70506
Surr: 4-Terphenyl-d14	74.0	0	34.4-134		%Rec	1	10/12/2022 1:11:59 PM	70506
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	10/3/2022 9:14:00 PM	70506
Naphthalene	ND	0.20	0.30		µg/L	1	10/3/2022 9:14:00 PM	70506
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	10/3/2022 9:14:00 PM	70506
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	10/3/2022 9:14:00 PM	70506
Acenaphthene	ND	0.14	0.30		µg/L	1	10/3/2022 9:14:00 PM	70506
Fluorene	ND	0.095	0.30		µg/L	1	10/3/2022 9:14:00 PM	70506
Phenanthrene	ND	0.16	0.30		µg/L	1	10/3/2022 9:14:00 PM	70506
Anthracene	ND	0.14	0.30		µg/L	1	10/3/2022 9:14:00 PM	70506
Fluoranthene	ND	0.14	0.30		µg/L	1	10/3/2022 9:14:00 PM	70506
Pyrene	ND	0.32	1.0		µg/L	1	10/3/2022 9:14:00 PM	70506
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	10/3/2022 9:14:00 PM	70506
Chrysene	ND	0.25	0.30		µg/L	1	10/3/2022 9:14:00 PM	70506
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	10/3/2022 9:14:00 PM	70506
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	10/3/2022 9:14:00 PM	70506

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209F93**
Date Reported: **10/17/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-28-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/28/2022 9:30:00 AM
Lab ID: 2209F93-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	49.6	0	15-108		%Rec	1	10/3/2022 9:14:00 PM	70506
Surr: 2-Fluorobiphenyl	40.1	0	15-107		%Rec	1	10/3/2022 9:14:00 PM	70506
Surr: 4-Terphenyl-d14	57.8	0	15-166		%Rec	1	10/3/2022 9:14:00 PM	70506

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209F93**
Date Reported: **10/17/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-28-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/28/2022 9:30:00 AM
Lab ID: 2209F93-001D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	ND	0.0016	0.0030		mg/L	1	10/3/2022 12:38:47 PM	70489
Beryllium	ND	0.00088	0.0020		mg/L	1	10/3/2022 12:38:47 PM	70489
Cadmium	ND	0.0018	0.0020		mg/L	1	10/3/2022 12:38:47 PM	70489
Chromium	ND	0.0020	0.0060		mg/L	1	10/3/2022 12:38:47 PM	70489
Cobalt	ND	0.0035	0.0060		mg/L	1	10/3/2022 12:38:47 PM	70489
Nickel	ND	0.0053	0.010		mg/L	1	10/3/2022 12:38:47 PM	70489
Silver	ND	0.0018	0.0050		mg/L	1	10/3/2022 12:38:47 PM	70489
Vanadium	ND	0.0035	0.050		mg/L	1	10/3/2022 12:38:47 PM	70489
Zinc	ND	0.0039	0.010		mg/L	1	10/3/2022 12:38:47 PM	70489
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/30/2022 2:21:34 PM	70489
Arsenic	ND	0.00013	0.0010		mg/L	1	9/30/2022 2:21:34 PM	70489
Lead	ND	0.000061	0.00050		mg/L	1	9/30/2022 2:21:34 PM	70489
Selenium	ND	0.00037	0.0010		mg/L	1	9/30/2022 2:21:34 PM	70489
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	10/6/2022 11:23:28 AM	70626

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209F93**
Date Reported: **10/17/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-28-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/28/2022 9:30:00 AM
Lab ID: 2209F93-001E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	ND	0.0011	0.0020		mg/L	1	10/4/2022 4:39:43 PM	B91551
Beryllium	ND	0.00088	0.0020		mg/L	1	10/4/2022 4:39:43 PM	B91551
Cadmium	ND	0.00098	0.0020		mg/L	1	10/4/2022 4:39:43 PM	B91551
Chromium	ND	0.0020	0.0060		mg/L	1	10/4/2022 4:39:43 PM	B91551
Cobalt	ND	0.0024	0.0060		mg/L	1	10/4/2022 4:39:43 PM	B91551
Nickel	ND	0.0033	0.010		mg/L	1	10/4/2022 4:39:43 PM	B91551
Silver	ND	0.0013	0.0050		mg/L	1	10/4/2022 4:39:43 PM	B91551
Vanadium	ND	0.0017	0.050		mg/L	1	10/4/2022 4:39:43 PM	B91551
Zinc	0.0048	0.0032	0.010	J	mg/L	1	10/4/2022 4:39:43 PM	B91551
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	10/3/2022 2:50:38 PM	B91488
Arsenic	ND	0.00012	0.0010		mg/L	1	9/29/2022 2:18:24 PM	A91411
Lead	ND	0.000057	0.00050		mg/L	1	9/29/2022 2:18:24 PM	A91411
Selenium	ND	0.00034	0.0010		mg/L	1	9/29/2022 2:18:24 PM	A91411
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	10/6/2022 11:25:36 AM	70626

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209F93**
Date Reported: **10/17/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-1C
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/28/2022 9:35:00 AM
Lab ID: 2209F93-002A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	9/30/2022 12:33:00 PM	A91437
Surr: BFB	102	0	70-130		%Rec	1	9/30/2022 12:33:00 PM	A91437
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	10/5/2022 10:56:00 PM	R91553
Toluene	ND	0.20	1.0		µg/L	1	10/5/2022 10:56:00 PM	R91553
Ethylbenzene	ND	0.21	1.0		µg/L	1	10/5/2022 10:56:00 PM	R91553
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	10/5/2022 10:56:00 PM	R91553
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	10/5/2022 10:56:00 PM	R91553
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	10/5/2022 10:56:00 PM	R91553
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	10/5/2022 10:56:00 PM	R91553
Acetone	7.1	2.5	10	J	µg/L	1	10/5/2022 10:56:00 PM	R91553
Bromomethane	ND	0.85	3.0		µg/L	1	10/5/2022 10:56:00 PM	R91553
2-Butanone	ND	2.0	10		µg/L	1	10/5/2022 10:56:00 PM	R91553
Carbon disulfide	ND	0.59	10		µg/L	1	10/5/2022 10:56:00 PM	R91553
Chlorobenzene	ND	0.16	1.0		µg/L	1	10/5/2022 10:56:00 PM	R91553
Chloroform	ND	0.13	1.0		µg/L	1	10/5/2022 10:56:00 PM	R91553
Chloromethane	ND	0.41	3.0		µg/L	1	10/5/2022 10:56:00 PM	R91553
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	10/5/2022 10:56:00 PM	R91553
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	10/5/2022 10:56:00 PM	R91553
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	10/5/2022 10:56:00 PM	R91553
Isopropylbenzene	ND	0.18	1.0		µg/L	1	10/5/2022 10:56:00 PM	R91553
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	10/5/2022 10:56:00 PM	R91553
Methylene Chloride	ND	0.50	3.0		µg/L	1	10/5/2022 10:56:00 PM	R91553
n-Butylbenzene	ND	0.25	3.0		µg/L	1	10/5/2022 10:56:00 PM	R91553
n-Propylbenzene	ND	0.18	1.0		µg/L	1	10/5/2022 10:56:00 PM	R91553
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	10/5/2022 10:56:00 PM	R91553
Styrene	ND	0.14	1.0		µg/L	1	10/5/2022 10:56:00 PM	R91553
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	10/5/2022 10:56:00 PM	R91553
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	10/5/2022 10:56:00 PM	R91553
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	10/5/2022 10:56:00 PM	R91553
Vinyl chloride	ND	0.32	1.0		µg/L	1	10/5/2022 10:56:00 PM	R91553
Xylenes, Total	ND	0.37	1.5		µg/L	1	10/5/2022 10:56:00 PM	R91553
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%Rec	1	10/5/2022 10:56:00 PM	R91553
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	10/5/2022 10:56:00 PM	R91553
Surr: Dibromofluoromethane	102	0	70-130		%Rec	1	10/5/2022 10:56:00 PM	R91553
Surr: Toluene-d8	95.4	0	70-130		%Rec	1	10/5/2022 10:56:00 PM	R91553

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209F93**
Date Reported: **10/17/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-1C
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/28/2022 9:35:00 AM
Lab ID: 2209F93-002B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0093		µg/L	1	10/4/2022 4:27:10 AM	70493

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209F93**
Date Reported: **10/17/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-1C
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/28/2022 9:35:00 AM
Lab ID: 2209F93-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **mb**	
Diesel Range Organics (DRO)	0.025	0.016	0.064	J	mg/L	1	10/3/2022 9:37:27 PM	70492
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	10/3/2022 9:37:27 PM	70492
Surr: DNOP	87.5	0	42.2-138		%Rec	1	10/3/2022 9:37:27 PM	70492
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	10/12/2022 3:58:09 PM	70536
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	10/12/2022 3:58:09 PM	70536
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	10/12/2022 3:58:09 PM	70536
Di-n-octyl phthalate	ND	12	20		µg/L	1	10/12/2022 3:58:09 PM	70536
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	10/12/2022 3:58:09 PM	70536
Diethyl phthalate	ND	6.0	10		µg/L	1	10/12/2022 3:58:09 PM	70536
Dimethyl phthalate	ND	6.0	10		µg/L	1	10/12/2022 3:58:09 PM	70536
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	10/12/2022 3:58:09 PM	70536
2,4-Dinitrophenol	ND	16	20		µg/L	1	10/12/2022 3:58:09 PM	70536
2-Methylphenol	ND	5.0	10		µg/L	1	10/12/2022 3:58:09 PM	70536
3+4-Methylphenol	ND	5.1	10		µg/L	1	10/12/2022 3:58:09 PM	70536
Phenol	ND	18	20		µg/L	1	10/12/2022 3:58:09 PM	70536
Pyridine	ND	14	40		µg/L	1	10/12/2022 3:58:09 PM	70536
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	10/12/2022 3:58:09 PM	70536
Surr: 2-Fluorophenol	55.9	0	15-84.5		%Rec	1	10/12/2022 3:58:09 PM	70536
Surr: Phenol-d5	40.8	0	15-67		%Rec	1	10/12/2022 3:58:09 PM	70536
Surr: 2,4,6-Tribromophenol	67.9	0	15-108		%Rec	1	10/12/2022 3:58:09 PM	70536
Surr: Nitrobenzene-d5	64.9	0	16.8-112		%Rec	1	10/12/2022 3:58:09 PM	70536
Surr: 2-Fluorobiphenyl	63.1	0	15-101		%Rec	1	10/12/2022 3:58:09 PM	70536
Surr: 4-Terphenyl-d14	78.8	0	34.4-134		%Rec	1	10/12/2022 3:58:09 PM	70536
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	10/4/2022 1:45:00 PM	70536
Naphthalene	ND	0.20	0.30		µg/L	1	10/4/2022 1:45:00 PM	70536
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	10/4/2022 1:45:00 PM	70536
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	10/4/2022 1:45:00 PM	70536
Acenaphthene	ND	0.14	0.30		µg/L	1	10/4/2022 1:45:00 PM	70536
Fluorene	ND	0.095	0.30		µg/L	1	10/4/2022 1:45:00 PM	70536
Phenanthrene	ND	0.16	0.30		µg/L	1	10/4/2022 1:45:00 PM	70536
Anthracene	ND	0.14	0.30		µg/L	1	10/4/2022 1:45:00 PM	70536
Fluoranthene	ND	0.14	0.30		µg/L	1	10/4/2022 1:45:00 PM	70536
Pyrene	ND	0.32	1.0		µg/L	1	10/4/2022 1:45:00 PM	70536
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	10/4/2022 1:45:00 PM	70536
Chrysene	ND	0.25	0.30		µg/L	1	10/4/2022 1:45:00 PM	70536
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	10/4/2022 1:45:00 PM	70536
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	10/4/2022 1:45:00 PM	70536

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209F93**
Date Reported: **10/17/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-1C
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/28/2022 9:35:00 AM
Lab ID: 2209F93-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	73.5	0	15-108		%Rec	1	10/4/2022 1:45:00 PM	70536
Surr: 2-Fluorobiphenyl	62.0	0	15-107		%Rec	1	10/4/2022 1:45:00 PM	70536
Surr: 4-Terphenyl-d14	72.0	0	15-166		%Rec	1	10/4/2022 1:45:00 PM	70536

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209F93**
Date Reported: **10/17/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-1C
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/28/2022 9:35:00 AM
Lab ID: 2209F93-002D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.018	0.0016	0.0030		mg/L	1	10/3/2022 12:43:32 PM	70489
Beryllium	ND	0.00088	0.0020		mg/L	1	10/3/2022 12:43:32 PM	70489
Cadmium	ND	0.0018	0.0020		mg/L	1	10/3/2022 12:43:32 PM	70489
Chromium	ND	0.0020	0.0060		mg/L	1	10/3/2022 12:43:32 PM	70489
Cobalt	ND	0.0035	0.0060		mg/L	1	10/3/2022 12:43:32 PM	70489
Nickel	ND	0.0053	0.010		mg/L	1	10/3/2022 12:43:32 PM	70489
Silver	ND	0.0018	0.0050		mg/L	1	10/3/2022 12:43:32 PM	70489
Vanadium	ND	0.0035	0.050		mg/L	1	10/3/2022 12:43:32 PM	70489
Zinc	ND	0.0039	0.010		mg/L	1	10/3/2022 12:43:32 PM	70489
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/30/2022 2:28:52 PM	70489
Arsenic	0.00015	0.00013	0.0010	J	mg/L	1	9/30/2022 2:28:52 PM	70489
Lead	ND	0.000061	0.00050		mg/L	1	9/30/2022 2:28:52 PM	70489
Selenium	ND	0.00037	0.0010		mg/L	1	9/30/2022 2:28:52 PM	70489
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	10/6/2022 11:27:46 AM	70626

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209F93**
Date Reported: **10/17/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-1C
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/28/2022 9:35:00 AM
Lab ID: 2209F93-002E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.017	0.0011	0.0020		mg/L	1	10/4/2022 4:44:09 PM	B91551
Beryllium	ND	0.00088	0.0020		mg/L	1	10/4/2022 4:44:09 PM	B91551
Cadmium	ND	0.00098	0.0020		mg/L	1	10/4/2022 4:44:09 PM	B91551
Chromium	ND	0.0020	0.0060		mg/L	1	10/4/2022 4:44:09 PM	B91551
Cobalt	ND	0.0024	0.0060		mg/L	1	10/4/2022 4:44:09 PM	B91551
Nickel	0.0077	0.0033	0.010	J	mg/L	1	10/4/2022 4:44:09 PM	B91551
Silver	ND	0.0013	0.0050		mg/L	1	10/4/2022 4:44:09 PM	B91551
Vanadium	ND	0.0017	0.050		mg/L	1	10/4/2022 4:44:09 PM	B91551
Zinc	0.024	0.0032	0.010		mg/L	1	10/4/2022 4:44:09 PM	B91551
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/29/2022 2:21:05 PM	A91411
Arsenic	0.00017	0.00012	0.0010	J	mg/L	1	9/29/2022 2:21:05 PM	A91411
Lead	ND	0.000057	0.00050		mg/L	1	9/29/2022 2:21:05 PM	A91411
Selenium	ND	0.00034	0.0010		mg/L	1	9/29/2022 2:21:05 PM	A91411
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	10/6/2022 11:29:55 AM	70626

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209F93**
Date Reported: **10/17/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-2C
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/28/2022 10:15:00 AM
Lab ID: 2209F93-003A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	9/30/2022 4:19:00 PM	A91437
Surr: BFB	104	0	70-130		%Rec	1	9/30/2022 4:19:00 PM	A91437
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	10/5/2022 11:19:00 PM	R91553
Toluene	ND	0.20	1.0		µg/L	1	10/5/2022 11:19:00 PM	R91553
Ethylbenzene	ND	0.21	1.0		µg/L	1	10/5/2022 11:19:00 PM	R91553
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	10/5/2022 11:19:00 PM	R91553
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	10/5/2022 11:19:00 PM	R91553
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	10/5/2022 11:19:00 PM	R91553
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	10/5/2022 11:19:00 PM	R91553
Acetone	ND	2.5	10		µg/L	1	10/5/2022 11:19:00 PM	R91553
Bromomethane	ND	0.85	3.0		µg/L	1	10/5/2022 11:19:00 PM	R91553
2-Butanone	ND	2.0	10		µg/L	1	10/5/2022 11:19:00 PM	R91553
Carbon disulfide	ND	0.59	10		µg/L	1	10/5/2022 11:19:00 PM	R91553
Chlorobenzene	ND	0.16	1.0		µg/L	1	10/5/2022 11:19:00 PM	R91553
Chloroform	ND	0.13	1.0		µg/L	1	10/5/2022 11:19:00 PM	R91553
Chloromethane	ND	0.41	3.0		µg/L	1	10/5/2022 11:19:00 PM	R91553
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	10/5/2022 11:19:00 PM	R91553
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	10/5/2022 11:19:00 PM	R91553
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	10/5/2022 11:19:00 PM	R91553
Isopropylbenzene	ND	0.18	1.0		µg/L	1	10/5/2022 11:19:00 PM	R91553
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	10/5/2022 11:19:00 PM	R91553
Methylene Chloride	ND	0.50	3.0		µg/L	1	10/5/2022 11:19:00 PM	R91553
n-Butylbenzene	ND	0.25	3.0		µg/L	1	10/5/2022 11:19:00 PM	R91553
n-Propylbenzene	ND	0.18	1.0		µg/L	1	10/5/2022 11:19:00 PM	R91553
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	10/5/2022 11:19:00 PM	R91553
Styrene	ND	0.14	1.0		µg/L	1	10/5/2022 11:19:00 PM	R91553
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	10/5/2022 11:19:00 PM	R91553
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	10/5/2022 11:19:00 PM	R91553
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	10/5/2022 11:19:00 PM	R91553
Vinyl chloride	ND	0.32	1.0		µg/L	1	10/5/2022 11:19:00 PM	R91553
Xylenes, Total	ND	0.37	1.5		µg/L	1	10/5/2022 11:19:00 PM	R91553
Surr: 1,2-Dichloroethane-d4	98.4	0	70-130		%Rec	1	10/5/2022 11:19:00 PM	R91553
Surr: 4-Bromofluorobenzene	98.5	0	70-130		%Rec	1	10/5/2022 11:19:00 PM	R91553
Surr: Dibromofluoromethane	100	0	70-130		%Rec	1	10/5/2022 11:19:00 PM	R91553
Surr: Toluene-d8	95.2	0	70-130		%Rec	1	10/5/2022 11:19:00 PM	R91553

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209F93**
Date Reported: **10/17/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-2C
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/28/2022 10:15:00 AM
Lab ID: 2209F93-003B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	10/4/2022 4:42:09 AM	70493

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209F93**
Date Reported: **10/17/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-2C
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/28/2022 10:15:00 AM
Lab ID: 2209F93-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **mb**	
Diesel Range Organics (DRO)	0.65	0.016	0.064		mg/L	1	10/3/2022 10:01:08 PM	70492
Motor Oil Range Organics (MRO)	0.62	0.052	0.080		mg/L	1	10/3/2022 10:01:08 PM	70492
Surr: DNOP	102	0	42.2-138		%Rec	1	10/3/2022 10:01:08 PM	70492
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	10/12/2022 4:39:34 PM	70536
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	10/12/2022 4:39:34 PM	70536
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	10/12/2022 4:39:34 PM	70536
Di-n-octyl phthalate	ND	12	20		µg/L	1	10/12/2022 4:39:34 PM	70536
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	10/12/2022 4:39:34 PM	70536
Diethyl phthalate	ND	6.0	10		µg/L	1	10/12/2022 4:39:34 PM	70536
Dimethyl phthalate	ND	6.0	10		µg/L	1	10/12/2022 4:39:34 PM	70536
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	10/12/2022 4:39:34 PM	70536
2,4-Dinitrophenol	ND	16	20		µg/L	1	10/12/2022 4:39:34 PM	70536
2-Methylphenol	ND	5.0	10		µg/L	1	10/12/2022 4:39:34 PM	70536
3+4-Methylphenol	ND	5.1	10		µg/L	1	10/12/2022 4:39:34 PM	70536
Phenol	ND	18	20		µg/L	1	10/12/2022 4:39:34 PM	70536
Pyridine	ND	14	40		µg/L	1	10/12/2022 4:39:34 PM	70536
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	10/12/2022 4:39:34 PM	70536
Surr: 2-Fluorophenol	53.4	0	15-84.5		%Rec	1	10/12/2022 4:39:34 PM	70536
Surr: Phenol-d5	40.4	0	15-67		%Rec	1	10/12/2022 4:39:34 PM	70536
Surr: 2,4,6-Tribromophenol	68.1	0	15-108		%Rec	1	10/12/2022 4:39:34 PM	70536
Surr: Nitrobenzene-d5	65.9	0	16.8-112		%Rec	1	10/12/2022 4:39:34 PM	70536
Surr: 2-Fluorobiphenyl	61.6	0	15-101		%Rec	1	10/12/2022 4:39:34 PM	70536
Surr: 4-Terphenyl-d14	77.7	0	34.4-134		%Rec	1	10/12/2022 4:39:34 PM	70536
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	10/4/2022 2:30:00 PM	70536
Naphthalene	ND	0.20	0.30		µg/L	1	10/4/2022 2:30:00 PM	70536
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	10/4/2022 2:30:00 PM	70536
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	10/4/2022 2:30:00 PM	70536
Acenaphthene	ND	0.14	0.30		µg/L	1	10/4/2022 2:30:00 PM	70536
Fluorene	ND	0.095	0.30		µg/L	1	10/4/2022 2:30:00 PM	70536
Phenanthrene	ND	0.16	0.30		µg/L	1	10/4/2022 2:30:00 PM	70536
Anthracene	ND	0.14	0.30		µg/L	1	10/4/2022 2:30:00 PM	70536
Fluoranthene	ND	0.14	0.30		µg/L	1	10/4/2022 2:30:00 PM	70536
Pyrene	ND	0.32	1.0		µg/L	1	10/4/2022 2:30:00 PM	70536
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	10/4/2022 2:30:00 PM	70536
Chrysene	ND	0.25	0.30		µg/L	1	10/4/2022 2:30:00 PM	70536
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	10/4/2022 2:30:00 PM	70536
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	10/4/2022 2:30:00 PM	70536

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209F93**
Date Reported: **10/17/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-2C
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/28/2022 10:15:00 AM
Lab ID: 2209F93-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	74.2	0	15-108		%Rec	1	10/4/2022 2:30:00 PM	70536
Surr: 2-Fluorobiphenyl	62.0	0	15-107		%Rec	1	10/4/2022 2:30:00 PM	70536
Surr: 4-Terphenyl-d14	70.3	0	15-166		%Rec	1	10/4/2022 2:30:00 PM	70536

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209F93**
Date Reported: **10/17/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-2C
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/28/2022 10:15:00 AM
Lab ID: 2209F93-003D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.039	0.0016	0.0030		mg/L	1	10/3/2022 12:52:42 PM	70489
Beryllium	ND	0.00088	0.0020		mg/L	1	10/3/2022 12:52:42 PM	70489
Cadmium	ND	0.0018	0.0020		mg/L	1	10/3/2022 12:52:42 PM	70489
Chromium	0.0062	0.0020	0.0060		mg/L	1	10/3/2022 12:52:42 PM	70489
Cobalt	ND	0.0035	0.0060		mg/L	1	10/3/2022 12:52:42 PM	70489
Nickel	ND	0.0053	0.010		mg/L	1	10/3/2022 12:52:42 PM	70489
Silver	ND	0.0018	0.0050		mg/L	1	10/3/2022 12:52:42 PM	70489
Vanadium	0.0056	0.0035	0.050	J	mg/L	1	10/3/2022 12:52:42 PM	70489
Zinc	ND	0.0039	0.010		mg/L	1	10/3/2022 12:52:42 PM	70489
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	10/5/2022 3:27:06 PM	70489
Arsenic	0.0011	0.00022	0.0010		mg/L	1	10/5/2022 3:27:06 PM	70489
Lead	0.00090	0.00019	0.00050		mg/L	1	10/5/2022 3:27:06 PM	70489
Selenium	ND	0.00089	0.0010		mg/L	1	10/5/2022 3:27:06 PM	70489
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	10/6/2022 11:32:05 AM	70626

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209F93**
Date Reported: **10/17/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-2C
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/28/2022 10:15:00 AM
Lab ID: 2209F93-003E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.016	0.0011	0.0020		mg/L	1	10/4/2022 4:48:09 PM	B91551
Beryllium	ND	0.00088	0.0020		mg/L	1	10/4/2022 4:48:09 PM	B91551
Cadmium	ND	0.00098	0.0020		mg/L	1	10/4/2022 4:48:09 PM	B91551
Chromium	ND	0.0020	0.0060		mg/L	1	10/4/2022 4:48:09 PM	B91551
Cobalt	ND	0.0024	0.0060		mg/L	1	10/4/2022 4:48:09 PM	B91551
Nickel	ND	0.0033	0.010		mg/L	1	10/4/2022 4:48:09 PM	B91551
Silver	ND	0.0013	0.0050		mg/L	1	10/4/2022 4:48:09 PM	B91551
Vanadium	ND	0.0017	0.050		mg/L	1	10/4/2022 4:48:09 PM	B91551
Zinc	0.018	0.0032	0.010		mg/L	1	10/4/2022 4:48:09 PM	B91551
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/29/2022 2:29:10 PM	A91411
Arsenic	0.00080	0.00012	0.0010	J	mg/L	1	9/29/2022 2:29:10 PM	A91411
Lead	ND	0.000057	0.00050		mg/L	1	9/29/2022 2:29:10 PM	A91411
Selenium	ND	0.00034	0.0010		mg/L	1	9/29/2022 2:29:10 PM	A91411
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	10/6/2022 11:34:15 AM	70626

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209F93**
Date Reported: **10/17/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-2B
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/28/2022 10:35:00 AM
Lab ID: 2209F93-004A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	9/30/2022 4:39:00 PM	A91437
Surr: BFB	101	0	70-130		%Rec	1	9/30/2022 4:39:00 PM	A91437
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	10/5/2022 11:42:00 PM	R91553
Toluene	ND	0.20	1.0		µg/L	1	10/5/2022 11:42:00 PM	R91553
Ethylbenzene	ND	0.21	1.0		µg/L	1	10/5/2022 11:42:00 PM	R91553
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	10/5/2022 11:42:00 PM	R91553
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	10/5/2022 11:42:00 PM	R91553
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	10/5/2022 11:42:00 PM	R91553
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	10/5/2022 11:42:00 PM	R91553
Acetone	3.8	2.5	10	J	µg/L	1	10/5/2022 11:42:00 PM	R91553
Bromomethane	ND	0.85	3.0		µg/L	1	10/5/2022 11:42:00 PM	R91553
2-Butanone	ND	2.0	10		µg/L	1	10/5/2022 11:42:00 PM	R91553
Carbon disulfide	ND	0.59	10		µg/L	1	10/5/2022 11:42:00 PM	R91553
Chlorobenzene	ND	0.16	1.0		µg/L	1	10/5/2022 11:42:00 PM	R91553
Chloroform	ND	0.13	1.0		µg/L	1	10/5/2022 11:42:00 PM	R91553
Chloromethane	ND	0.41	3.0		µg/L	1	10/5/2022 11:42:00 PM	R91553
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	10/5/2022 11:42:00 PM	R91553
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	10/5/2022 11:42:00 PM	R91553
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	10/5/2022 11:42:00 PM	R91553
Isopropylbenzene	ND	0.18	1.0		µg/L	1	10/5/2022 11:42:00 PM	R91553
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	10/5/2022 11:42:00 PM	R91553
Methylene Chloride	ND	0.50	3.0		µg/L	1	10/5/2022 11:42:00 PM	R91553
n-Butylbenzene	ND	0.25	3.0		µg/L	1	10/5/2022 11:42:00 PM	R91553
n-Propylbenzene	ND	0.18	1.0		µg/L	1	10/5/2022 11:42:00 PM	R91553
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	10/5/2022 11:42:00 PM	R91553
Styrene	ND	0.14	1.0		µg/L	1	10/5/2022 11:42:00 PM	R91553
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	10/5/2022 11:42:00 PM	R91553
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	10/5/2022 11:42:00 PM	R91553
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	10/5/2022 11:42:00 PM	R91553
Vinyl chloride	ND	0.32	1.0		µg/L	1	10/5/2022 11:42:00 PM	R91553
Xylenes, Total	ND	0.37	1.5		µg/L	1	10/5/2022 11:42:00 PM	R91553
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%Rec	1	10/5/2022 11:42:00 PM	R91553
Surr: 4-Bromofluorobenzene	97.5	0	70-130		%Rec	1	10/5/2022 11:42:00 PM	R91553
Surr: Dibromofluoromethane	101	0	70-130		%Rec	1	10/5/2022 11:42:00 PM	R91553
Surr: Toluene-d8	94.4	0	70-130		%Rec	1	10/5/2022 11:42:00 PM	R91553

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209F93**
Date Reported: **10/17/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-2B
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/28/2022 10:35:00 AM
Lab ID: 2209F93-004B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	10/4/2022 5:35:31 PM	70550

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209F93**
Date Reported: **10/17/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-2B
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/28/2022 10:35:00 AM
Lab ID: 2209F93-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **mb**	
Diesel Range Organics (DRO)	0.049	0.016	0.064	J	mg/L	1	10/3/2022 10:24:48 PM	70492
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	10/3/2022 10:24:48 PM	70492
Surr: DNOP	99.6	0	42.2-138		%Rec	1	10/3/2022 10:24:48 PM	70492
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	10/12/2022 5:20:49 PM	70536
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	10/12/2022 5:20:49 PM	70536
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	10/12/2022 5:20:49 PM	70536
Di-n-octyl phthalate	ND	12	20		µg/L	1	10/12/2022 5:20:49 PM	70536
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	10/12/2022 5:20:49 PM	70536
Diethyl phthalate	ND	6.0	10		µg/L	1	10/12/2022 5:20:49 PM	70536
Dimethyl phthalate	ND	6.0	10		µg/L	1	10/12/2022 5:20:49 PM	70536
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	10/12/2022 5:20:49 PM	70536
2,4-Dinitrophenol	ND	16	20		µg/L	1	10/12/2022 5:20:49 PM	70536
2-Methylphenol	ND	5.0	10		µg/L	1	10/12/2022 5:20:49 PM	70536
3+4-Methylphenol	ND	5.1	10		µg/L	1	10/12/2022 5:20:49 PM	70536
Phenol	ND	18	20		µg/L	1	10/12/2022 5:20:49 PM	70536
Pyridine	ND	14	40		µg/L	1	10/12/2022 5:20:49 PM	70536
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	10/12/2022 5:20:49 PM	70536
Surr: 2-Fluorophenol	58.0	0	15-84.5		%Rec	1	10/12/2022 5:20:49 PM	70536
Surr: Phenol-d5	42.2	0	15-67		%Rec	1	10/12/2022 5:20:49 PM	70536
Surr: 2,4,6-Tribromophenol	72.3	0	15-108		%Rec	1	10/12/2022 5:20:49 PM	70536
Surr: Nitrobenzene-d5	67.2	0	16.8-112		%Rec	1	10/12/2022 5:20:49 PM	70536
Surr: 2-Fluorobiphenyl	62.9	0	15-101		%Rec	1	10/12/2022 5:20:49 PM	70536
Surr: 4-Terphenyl-d14	84.6	0	34.4-134		%Rec	1	10/12/2022 5:20:49 PM	70536
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	10/4/2022 3:15:00 PM	70536
Naphthalene	ND	0.20	0.30		µg/L	1	10/4/2022 3:15:00 PM	70536
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	10/4/2022 3:15:00 PM	70536
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	10/4/2022 3:15:00 PM	70536
Acenaphthene	ND	0.14	0.30		µg/L	1	10/4/2022 3:15:00 PM	70536
Fluorene	ND	0.095	0.30		µg/L	1	10/4/2022 3:15:00 PM	70536
Phenanthrene	ND	0.16	0.30		µg/L	1	10/4/2022 3:15:00 PM	70536
Anthracene	ND	0.14	0.30		µg/L	1	10/4/2022 3:15:00 PM	70536
Fluoranthene	ND	0.14	0.30		µg/L	1	10/4/2022 3:15:00 PM	70536
Pyrene	ND	0.32	1.0		µg/L	1	10/4/2022 3:15:00 PM	70536
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	10/4/2022 3:15:00 PM	70536
Chrysene	ND	0.25	0.30		µg/L	1	10/4/2022 3:15:00 PM	70536
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	10/4/2022 3:15:00 PM	70536
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	10/4/2022 3:15:00 PM	70536

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209F93**
Date Reported: **10/17/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-2B
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/28/2022 10:35:00 AM
Lab ID: 2209F93-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	72.2	0	15-108		%Rec	1	10/4/2022 3:15:00 PM	70536
Surr: 2-Fluorobiphenyl	59.9	0	15-107		%Rec	1	10/4/2022 3:15:00 PM	70536
Surr: 4-Terphenyl-d14	70.3	0	15-166		%Rec	1	10/4/2022 3:15:00 PM	70536

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209F93**
Date Reported: **10/17/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-2B
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/28/2022 10:35:00 AM
Lab ID: 2209F93-004D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.047	0.0016	0.0030		mg/L	1	10/3/2022 12:57:10 PM	70489
Beryllium	ND	0.00088	0.0020		mg/L	1	10/3/2022 12:57:10 PM	70489
Cadmium	ND	0.0018	0.0020		mg/L	1	10/3/2022 12:57:10 PM	70489
Chromium	0.0029	0.0020	0.0060	J	mg/L	1	10/3/2022 12:57:10 PM	70489
Cobalt	0.0063	0.0035	0.0060		mg/L	1	10/3/2022 12:57:10 PM	70489
Nickel	ND	0.0053	0.010		mg/L	1	10/3/2022 12:57:10 PM	70489
Silver	ND	0.0018	0.0050		mg/L	1	10/3/2022 12:57:10 PM	70489
Vanadium	ND	0.0035	0.050		mg/L	1	10/3/2022 12:57:10 PM	70489
Zinc	0.26	0.0039	0.010		mg/L	1	10/3/2022 12:57:10 PM	70489
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	10/6/2022 3:03:46 PM	70489
Arsenic	0.00064	0.00022	0.0010	J	mg/L	1	10/5/2022 3:34:27 PM	70489
Lead	ND	0.00019	0.00050		mg/L	1	10/6/2022 3:03:46 PM	70489
Selenium	ND	0.00089	0.0010		mg/L	1	10/6/2022 3:03:46 PM	70489
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	10/6/2022 11:36:23 AM	70626

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209F93**
Date Reported: **10/17/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-2B
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/28/2022 10:35:00 AM
Lab ID: 2209F93-004E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.039	0.0011	0.0020		mg/L	1	10/4/2022 4:52:09 PM	B91551
Beryllium	ND	0.00088	0.0020		mg/L	1	10/4/2022 4:52:09 PM	B91551
Cadmium	ND	0.00098	0.0020		mg/L	1	10/4/2022 4:52:09 PM	B91551
Chromium	ND	0.0020	0.0060		mg/L	1	10/4/2022 4:52:09 PM	B91551
Cobalt	ND	0.0024	0.0060		mg/L	1	10/4/2022 4:52:09 PM	B91551
Nickel	ND	0.0033	0.010		mg/L	1	10/4/2022 4:52:09 PM	B91551
Silver	ND	0.0013	0.0050		mg/L	1	10/4/2022 4:52:09 PM	B91551
Vanadium	ND	0.0017	0.050		mg/L	1	10/4/2022 4:52:09 PM	B91551
Zinc	0.043	0.0032	0.010		mg/L	1	10/4/2022 4:52:09 PM	B91551
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/29/2022 2:31:51 PM	A91411
Arsenic	0.00053	0.00012	0.0010	J	mg/L	1	9/29/2022 2:31:51 PM	A91411
Lead	ND	0.000057	0.00050		mg/L	1	9/29/2022 2:31:51 PM	A91411
Selenium	ND	0.00034	0.0010		mg/L	1	9/29/2022 2:31:51 PM	A91411
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	10/6/2022 11:42:47 AM	70626

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209F93**
Date Reported: **10/17/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-3C
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/28/2022 11:00:00 AM
Lab ID: 2209F93-005A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	9/30/2022 4:58:00 PM	A91437
Surr: BFB	102	0	70-130		%Rec	1	9/30/2022 4:58:00 PM	A91437
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	10/6/2022 12:05:00 AM	R91553
Toluene	ND	0.20	1.0		µg/L	1	10/6/2022 12:05:00 AM	R91553
Ethylbenzene	ND	0.21	1.0		µg/L	1	10/6/2022 12:05:00 AM	R91553
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	10/6/2022 12:05:00 AM	R91553
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	10/6/2022 12:05:00 AM	R91553
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 12:05:00 AM	R91553
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	10/6/2022 12:05:00 AM	R91553
Acetone	ND	2.5	10		µg/L	1	10/6/2022 12:05:00 AM	R91553
Bromomethane	ND	0.85	3.0		µg/L	1	10/6/2022 12:05:00 AM	R91553
2-Butanone	ND	2.0	10		µg/L	1	10/6/2022 12:05:00 AM	R91553
Carbon disulfide	ND	0.59	10		µg/L	1	10/6/2022 12:05:00 AM	R91553
Chlorobenzene	ND	0.16	1.0		µg/L	1	10/6/2022 12:05:00 AM	R91553
Chloroform	ND	0.13	1.0		µg/L	1	10/6/2022 12:05:00 AM	R91553
Chloromethane	ND	0.41	3.0		µg/L	1	10/6/2022 12:05:00 AM	R91553
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	10/6/2022 12:05:00 AM	R91553
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	10/6/2022 12:05:00 AM	R91553
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	10/6/2022 12:05:00 AM	R91553
Isopropylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 12:05:00 AM	R91553
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	10/6/2022 12:05:00 AM	R91553
Methylene Chloride	ND	0.50	3.0		µg/L	1	10/6/2022 12:05:00 AM	R91553
n-Butylbenzene	ND	0.25	3.0		µg/L	1	10/6/2022 12:05:00 AM	R91553
n-Propylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 12:05:00 AM	R91553
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	10/6/2022 12:05:00 AM	R91553
Styrene	ND	0.14	1.0		µg/L	1	10/6/2022 12:05:00 AM	R91553
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	10/6/2022 12:05:00 AM	R91553
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	10/6/2022 12:05:00 AM	R91553
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	10/6/2022 12:05:00 AM	R91553
Vinyl chloride	ND	0.32	1.0		µg/L	1	10/6/2022 12:05:00 AM	R91553
Xylenes, Total	ND	0.37	1.5		µg/L	1	10/6/2022 12:05:00 AM	R91553
Surr: 1,2-Dichloroethane-d4	102	0	70-130		%Rec	1	10/6/2022 12:05:00 AM	R91553
Surr: 4-Bromofluorobenzene	98.2	0	70-130		%Rec	1	10/6/2022 12:05:00 AM	R91553
Surr: Dibromofluoromethane	98.6	0	70-130		%Rec	1	10/6/2022 12:05:00 AM	R91553
Surr: Toluene-d8	95.5	0	70-130		%Rec	1	10/6/2022 12:05:00 AM	R91553

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209F93**
Date Reported: **10/17/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-3C
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/28/2022 11:00:00 AM
Lab ID: 2209F93-005B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	10/4/2022 6:20:52 PM	70550

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209F93**
Date Reported: **10/17/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-3C
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/28/2022 11:00:00 AM
Lab ID: 2209F93-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **mb**	
Diesel Range Organics (DRO)	ND	0.016	0.064		mg/L	1	10/3/2022 10:48:27 PM	70492
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	10/3/2022 10:48:27 PM	70492
Surr: DNOP	91.6	0	42.2-138		%Rec	1	10/3/2022 10:48:27 PM	70492
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	10/12/2022 6:03:05 PM	70536
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	10/12/2022 6:03:05 PM	70536
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	10/12/2022 6:03:05 PM	70536
Di-n-octyl phthalate	ND	12	20		µg/L	1	10/12/2022 6:03:05 PM	70536
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	10/12/2022 6:03:05 PM	70536
Diethyl phthalate	ND	6.0	10		µg/L	1	10/12/2022 6:03:05 PM	70536
Dimethyl phthalate	ND	6.0	10		µg/L	1	10/12/2022 6:03:05 PM	70536
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	10/12/2022 6:03:05 PM	70536
2,4-Dinitrophenol	ND	16	20		µg/L	1	10/12/2022 6:03:05 PM	70536
2-Methylphenol	ND	5.0	10		µg/L	1	10/12/2022 6:03:05 PM	70536
3+4-Methylphenol	ND	5.1	10		µg/L	1	10/12/2022 6:03:05 PM	70536
Phenol	ND	18	20		µg/L	1	10/12/2022 6:03:05 PM	70536
Pyridine	ND	14	40		µg/L	1	10/12/2022 6:03:05 PM	70536
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	10/12/2022 6:03:05 PM	70536
Surr: 2-Fluorophenol	50.3	0	15-84.5		%Rec	1	10/12/2022 6:03:05 PM	70536
Surr: Phenol-d5	37.3	0	15-67		%Rec	1	10/12/2022 6:03:05 PM	70536
Surr: 2,4,6-Tribromophenol	70.0	0	15-108		%Rec	1	10/12/2022 6:03:05 PM	70536
Surr: Nitrobenzene-d5	60.0	0	16.8-112		%Rec	1	10/12/2022 6:03:05 PM	70536
Surr: 2-Fluorobiphenyl	58.4	0	15-101		%Rec	1	10/12/2022 6:03:05 PM	70536
Surr: 4-Terphenyl-d14	77.6	0	34.4-134		%Rec	1	10/12/2022 6:03:05 PM	70536
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	10/4/2022 4:00:00 PM	70536
Naphthalene	ND	0.20	0.30		µg/L	1	10/4/2022 4:00:00 PM	70536
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	10/4/2022 4:00:00 PM	70536
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	10/4/2022 4:00:00 PM	70536
Acenaphthene	ND	0.14	0.30		µg/L	1	10/4/2022 4:00:00 PM	70536
Fluorene	ND	0.095	0.30		µg/L	1	10/4/2022 4:00:00 PM	70536
Phenanthrene	ND	0.16	0.30		µg/L	1	10/4/2022 4:00:00 PM	70536
Anthracene	ND	0.14	0.30		µg/L	1	10/4/2022 4:00:00 PM	70536
Fluoranthene	ND	0.14	0.30		µg/L	1	10/4/2022 4:00:00 PM	70536
Pyrene	ND	0.32	1.0		µg/L	1	10/4/2022 4:00:00 PM	70536
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	10/4/2022 4:00:00 PM	70536
Chrysene	ND	0.25	0.30		µg/L	1	10/4/2022 4:00:00 PM	70536
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	10/4/2022 4:00:00 PM	70536
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	10/4/2022 4:00:00 PM	70536

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209F93**
Date Reported: **10/17/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-3C
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/28/2022 11:00:00 AM
Lab ID: 2209F93-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	74.2	0	15-108		%Rec	1	10/4/2022 4:00:00 PM	70536
Surr: 2-Fluorobiphenyl	62.2	0	15-107		%Rec	1	10/4/2022 4:00:00 PM	70536
Surr: 4-Terphenyl-d14	74.9	0	15-166		%Rec	1	10/4/2022 4:00:00 PM	70536

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209F93**
Date Reported: **10/17/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-3C
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/28/2022 11:00:00 AM
Lab ID: 2209F93-005D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.036	0.0016	0.0030		mg/L	1	10/3/2022 1:01:51 PM	70489
Beryllium	ND	0.00088	0.0020		mg/L	1	10/3/2022 1:01:51 PM	70489
Cadmium	ND	0.0018	0.0020		mg/L	1	10/3/2022 1:01:51 PM	70489
Chromium	0.0040	0.0020	0.0060	J	mg/L	1	10/3/2022 1:01:51 PM	70489
Cobalt	ND	0.0035	0.0060		mg/L	1	10/3/2022 1:01:51 PM	70489
Nickel	ND	0.0053	0.010		mg/L	1	10/3/2022 1:01:51 PM	70489
Silver	ND	0.0018	0.0050		mg/L	1	10/3/2022 1:01:51 PM	70489
Vanadium	ND	0.0035	0.050		mg/L	1	10/3/2022 1:01:51 PM	70489
Zinc	ND	0.0039	0.010		mg/L	1	10/3/2022 1:01:51 PM	70489
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	10/6/2022 3:06:13 PM	70489
Arsenic	0.00085	0.00022	0.0010	J	mg/L	1	10/5/2022 3:36:53 PM	70489
Lead	0.00037	0.00019	0.00050	J	mg/L	1	10/6/2022 3:06:13 PM	70489
Selenium	ND	0.00089	0.0010		mg/L	1	10/6/2022 3:06:13 PM	70489
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	10/6/2022 11:44:55 AM	70626

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209F93**
Date Reported: **10/17/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-3C
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/28/2022 11:00:00 AM
Lab ID: 2209F93-005E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.023	0.0011	0.0020		mg/L	1	10/4/2022 4:56:17 PM	C91551
Beryllium	ND	0.00088	0.0020		mg/L	1	10/4/2022 4:56:17 PM	C91551
Cadmium	ND	0.00098	0.0020		mg/L	1	10/4/2022 4:56:17 PM	C91551
Chromium	ND	0.0020	0.0060		mg/L	1	10/4/2022 4:56:17 PM	C91551
Cobalt	ND	0.0024	0.0060		mg/L	1	10/4/2022 4:56:17 PM	C91551
Nickel	ND	0.0033	0.010		mg/L	1	10/4/2022 4:56:17 PM	C91551
Silver	ND	0.0013	0.0050		mg/L	1	10/4/2022 4:56:17 PM	C91551
Vanadium	ND	0.0017	0.050		mg/L	1	10/4/2022 4:56:17 PM	C91551
Zinc	0.028	0.0032	0.010		mg/L	1	10/4/2022 4:56:17 PM	C91551
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	0.00057	0.00044	0.0010	J	mg/L	1	9/29/2022 2:34:32 PM	A91411
Arsenic	0.00078	0.00012	0.0010	J	mg/L	1	9/29/2022 2:34:32 PM	A91411
Lead	0.000088	0.000057	0.00050	J	mg/L	1	9/29/2022 2:34:32 PM	A91411
Selenium	0.00067	0.00034	0.0010	J	mg/L	1	9/29/2022 2:34:32 PM	A91411
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	10/6/2022 11:47:04 AM	70626

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209F93**
Date Reported: **10/17/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-3B
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/28/2022 11:30:00 AM
Lab ID: 2209F93-006A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	9/30/2022 5:18:00 PM	A91437
Surr: BFB	104	0	70-130		%Rec	1	9/30/2022 5:18:00 PM	A91437
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	10/6/2022 12:28:00 AM	R91553
Toluene	ND	0.20	1.0		µg/L	1	10/6/2022 12:28:00 AM	R91553
Ethylbenzene	ND	0.21	1.0		µg/L	1	10/6/2022 12:28:00 AM	R91553
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	10/6/2022 12:28:00 AM	R91553
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	10/6/2022 12:28:00 AM	R91553
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 12:28:00 AM	R91553
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	10/6/2022 12:28:00 AM	R91553
Acetone	ND	2.5	10		µg/L	1	10/6/2022 12:28:00 AM	R91553
Bromomethane	ND	0.85	3.0		µg/L	1	10/6/2022 12:28:00 AM	R91553
2-Butanone	ND	2.0	10		µg/L	1	10/6/2022 12:28:00 AM	R91553
Carbon disulfide	ND	0.59	10		µg/L	1	10/6/2022 12:28:00 AM	R91553
Chlorobenzene	ND	0.16	1.0		µg/L	1	10/6/2022 12:28:00 AM	R91553
Chloroform	ND	0.13	1.0		µg/L	1	10/6/2022 12:28:00 AM	R91553
Chloromethane	ND	0.41	3.0		µg/L	1	10/6/2022 12:28:00 AM	R91553
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	10/6/2022 12:28:00 AM	R91553
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	10/6/2022 12:28:00 AM	R91553
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	10/6/2022 12:28:00 AM	R91553
Isopropylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 12:28:00 AM	R91553
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	10/6/2022 12:28:00 AM	R91553
Methylene Chloride	ND	0.50	3.0		µg/L	1	10/6/2022 12:28:00 AM	R91553
n-Butylbenzene	ND	0.25	3.0		µg/L	1	10/6/2022 12:28:00 AM	R91553
n-Propylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 12:28:00 AM	R91553
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	10/6/2022 12:28:00 AM	R91553
Styrene	ND	0.14	1.0		µg/L	1	10/6/2022 12:28:00 AM	R91553
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	10/6/2022 12:28:00 AM	R91553
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	10/6/2022 12:28:00 AM	R91553
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	10/6/2022 12:28:00 AM	R91553
Vinyl chloride	ND	0.32	1.0		µg/L	1	10/6/2022 12:28:00 AM	R91553
Xylenes, Total	ND	0.37	1.5		µg/L	1	10/6/2022 12:28:00 AM	R91553
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%Rec	1	10/6/2022 12:28:00 AM	R91553
Surr: 4-Bromofluorobenzene	99.6	0	70-130		%Rec	1	10/6/2022 12:28:00 AM	R91553
Surr: Dibromofluoromethane	102	0	70-130		%Rec	1	10/6/2022 12:28:00 AM	R91553
Surr: Toluene-d8	95.2	0	70-130		%Rec	1	10/6/2022 12:28:00 AM	R91553

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209F93**
Date Reported: **10/17/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-3B
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/28/2022 11:30:00 AM
Lab ID: 2209F93-006B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	10/4/2022 6:51:04 PM	70550

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209F93**
Date Reported: **10/17/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-3B
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/28/2022 11:30:00 AM
Lab ID: 2209F93-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **mb**	
Diesel Range Organics (DRO)	0.021	0.016	0.064	J	mg/L	1	10/3/2022 11:12:07 PM	70492
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	10/3/2022 11:12:07 PM	70492
Surr: DNOP	77.8	0	42.2-138		%Rec	1	10/3/2022 11:12:07 PM	70492
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	10/12/2022 6:45:19 PM	70536
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	10/12/2022 6:45:19 PM	70536
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	10/12/2022 6:45:19 PM	70536
Di-n-octyl phthalate	ND	12	20		µg/L	1	10/12/2022 6:45:19 PM	70536
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	10/12/2022 6:45:19 PM	70536
Diethyl phthalate	ND	6.0	10		µg/L	1	10/12/2022 6:45:19 PM	70536
Dimethyl phthalate	ND	6.0	10		µg/L	1	10/12/2022 6:45:19 PM	70536
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	10/12/2022 6:45:19 PM	70536
2,4-Dinitrophenol	ND	16	20		µg/L	1	10/12/2022 6:45:19 PM	70536
2-Methylphenol	ND	5.0	10		µg/L	1	10/12/2022 6:45:19 PM	70536
3+4-Methylphenol	ND	5.1	10		µg/L	1	10/12/2022 6:45:19 PM	70536
Phenol	ND	18	20		µg/L	1	10/12/2022 6:45:19 PM	70536
Pyridine	ND	14	40		µg/L	1	10/12/2022 6:45:19 PM	70536
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	10/12/2022 6:45:19 PM	70536
Surr: 2-Fluorophenol	63.3	0	15-84.5		%Rec	1	10/12/2022 6:45:19 PM	70536
Surr: Phenol-d5	45.6	0	15-67		%Rec	1	10/12/2022 6:45:19 PM	70536
Surr: 2,4,6-Tribromophenol	84.0	0	15-108		%Rec	1	10/12/2022 6:45:19 PM	70536
Surr: Nitrobenzene-d5	72.2	0	16.8-112		%Rec	1	10/12/2022 6:45:19 PM	70536
Surr: 2-Fluorobiphenyl	70.8	0	15-101		%Rec	1	10/12/2022 6:45:19 PM	70536
Surr: 4-Terphenyl-d14	86.7	0	34.4-134		%Rec	1	10/12/2022 6:45:19 PM	70536
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	10/4/2022 4:44:00 PM	70536
Naphthalene	ND	0.20	0.30		µg/L	1	10/4/2022 4:44:00 PM	70536
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	10/4/2022 4:44:00 PM	70536
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	10/4/2022 4:44:00 PM	70536
Acenaphthene	ND	0.14	0.30		µg/L	1	10/4/2022 4:44:00 PM	70536
Fluorene	ND	0.095	0.30		µg/L	1	10/4/2022 4:44:00 PM	70536
Phenanthrene	ND	0.16	0.30		µg/L	1	10/4/2022 4:44:00 PM	70536
Anthracene	ND	0.14	0.30		µg/L	1	10/4/2022 4:44:00 PM	70536
Fluoranthene	ND	0.14	0.30		µg/L	1	10/4/2022 4:44:00 PM	70536
Pyrene	ND	0.32	1.0		µg/L	1	10/4/2022 4:44:00 PM	70536
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	10/4/2022 4:44:00 PM	70536
Chrysene	ND	0.25	0.30		µg/L	1	10/4/2022 4:44:00 PM	70536
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	10/4/2022 4:44:00 PM	70536
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	10/4/2022 4:44:00 PM	70536

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209F93**
Date Reported: **10/17/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-3B
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/28/2022 11:30:00 AM
Lab ID: 2209F93-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	75.2	0	15-108		%Rec	1	10/4/2022 4:44:00 PM	70536
Surr: 2-Fluorobiphenyl	63.4	0	15-107		%Rec	1	10/4/2022 4:44:00 PM	70536
Surr: 4-Terphenyl-d14	70.6	0	15-166		%Rec	1	10/4/2022 4:44:00 PM	70536

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209F93**
Date Reported: **10/17/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-3B
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/28/2022 11:30:00 AM
Lab ID: 2209F93-006D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.14	0.0016	0.0030		mg/L	1	10/3/2022 1:06:33 PM	70489
Beryllium	ND	0.00088	0.0020		mg/L	1	10/3/2022 1:06:33 PM	70489
Cadmium	ND	0.0018	0.0020		mg/L	1	10/3/2022 1:06:33 PM	70489
Chromium	0.0078	0.0020	0.0060		mg/L	1	10/3/2022 1:06:33 PM	70489
Cobalt	0.0042	0.0035	0.0060	J	mg/L	1	10/3/2022 1:06:33 PM	70489
Nickel	ND	0.0053	0.010		mg/L	1	10/3/2022 1:06:33 PM	70489
Silver	ND	0.0018	0.0050		mg/L	1	10/3/2022 1:06:33 PM	70489
Vanadium	0.0046	0.0035	0.050	J	mg/L	1	10/3/2022 1:06:33 PM	70489
Zinc	ND	0.0039	0.010		mg/L	1	10/3/2022 1:06:33 PM	70489
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	10/6/2022 3:08:39 PM	70489
Arsenic	0.0051	0.00022	0.0010		mg/L	1	10/5/2022 3:39:20 PM	70489
Lead	0.0012	0.00019	0.00050		mg/L	1	10/6/2022 3:08:39 PM	70489
Selenium	ND	0.00089	0.0010		mg/L	1	10/6/2022 3:08:39 PM	70489
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	10/6/2022 11:49:12 AM	70626

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209F93**
Date Reported: **10/17/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-3B
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/28/2022 11:30:00 AM
Lab ID: 2209F93-006E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.10	0.0011	0.0020		mg/L	1	10/4/2022 5:06:47 PM	C91551
Beryllium	ND	0.00088	0.0020		mg/L	1	10/4/2022 5:06:47 PM	C91551
Cadmium	ND	0.00098	0.0020		mg/L	1	10/4/2022 5:06:47 PM	C91551
Chromium	ND	0.0020	0.0060		mg/L	1	10/4/2022 5:06:47 PM	C91551
Cobalt	0.0025	0.0024	0.0060	J	mg/L	1	10/4/2022 5:06:47 PM	C91551
Nickel	ND	0.0033	0.010		mg/L	1	10/4/2022 5:06:47 PM	C91551
Silver	ND	0.0013	0.0050		mg/L	1	10/4/2022 5:06:47 PM	C91551
Vanadium	ND	0.0017	0.050		mg/L	1	10/4/2022 5:06:47 PM	C91551
Zinc	0.30	0.0032	0.010		mg/L	1	10/4/2022 5:06:47 PM	C91551
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	0.0013	0.00044	0.0010		mg/L	1	9/29/2022 2:37:13 PM	A91411
Arsenic	0.0042	0.00012	0.0010		mg/L	1	9/29/2022 2:37:13 PM	A91411
Lead	0.000070	0.000057	0.00050	J	mg/L	1	9/29/2022 2:37:13 PM	A91411
Selenium	ND	0.00034	0.0010		mg/L	1	9/29/2022 2:37:13 PM	A91411
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	10/6/2022 11:51:20 AM	70626

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209F93**
Date Reported: **10/17/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-9-28-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/28/2022
Lab ID: 2209F93-007A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	9/30/2022 5:37:00 PM	A91437
Surr: BFB	106	0	70-130		%Rec	1	9/30/2022 5:37:00 PM	A91437
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	10/6/2022 12:51:00 AM	R91553
Toluene	ND	0.20	1.0		µg/L	1	10/6/2022 12:51:00 AM	R91553
Ethylbenzene	ND	0.21	1.0		µg/L	1	10/6/2022 12:51:00 AM	R91553
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	10/6/2022 12:51:00 AM	R91553
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	10/6/2022 12:51:00 AM	R91553
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 12:51:00 AM	R91553
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	10/6/2022 12:51:00 AM	R91553
Acetone	11	2.5	10		µg/L	1	10/6/2022 12:51:00 AM	R91553
Bromomethane	ND	0.85	3.0		µg/L	1	10/6/2022 12:51:00 AM	R91553
2-Butanone	ND	2.0	10		µg/L	1	10/6/2022 12:51:00 AM	R91553
Carbon disulfide	ND	0.59	10		µg/L	1	10/6/2022 12:51:00 AM	R91553
Chlorobenzene	ND	0.16	1.0		µg/L	1	10/6/2022 12:51:00 AM	R91553
Chloroform	ND	0.13	1.0		µg/L	1	10/6/2022 12:51:00 AM	R91553
Chloromethane	ND	0.41	3.0		µg/L	1	10/6/2022 12:51:00 AM	R91553
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	10/6/2022 12:51:00 AM	R91553
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	10/6/2022 12:51:00 AM	R91553
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	10/6/2022 12:51:00 AM	R91553
Isopropylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 12:51:00 AM	R91553
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	10/6/2022 12:51:00 AM	R91553
Methylene Chloride	ND	0.50	3.0		µg/L	1	10/6/2022 12:51:00 AM	R91553
n-Butylbenzene	ND	0.25	3.0		µg/L	1	10/6/2022 12:51:00 AM	R91553
n-Propylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 12:51:00 AM	R91553
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	10/6/2022 12:51:00 AM	R91553
Styrene	ND	0.14	1.0		µg/L	1	10/6/2022 12:51:00 AM	R91553
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	10/6/2022 12:51:00 AM	R91553
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	10/6/2022 12:51:00 AM	R91553
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	10/6/2022 12:51:00 AM	R91553
Vinyl chloride	ND	0.32	1.0		µg/L	1	10/6/2022 12:51:00 AM	R91553
Xylenes, Total	ND	0.37	1.5		µg/L	1	10/6/2022 12:51:00 AM	R91553
Surr: 1,2-Dichloroethane-d4	98.1	0	70-130		%Rec	1	10/6/2022 12:51:00 AM	R91553
Surr: 4-Bromofluorobenzene	98.4	0	70-130		%Rec	1	10/6/2022 12:51:00 AM	R91553
Surr: Dibromofluoromethane	100	0	70-130		%Rec	1	10/6/2022 12:51:00 AM	R91553
Surr: Toluene-d8	93.8	0	70-130		%Rec	1	10/6/2022 12:51:00 AM	R91553

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209F93**
Date Reported: **10/17/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-9-28-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/28/2022
Lab ID: 2209F93-007B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	10/4/2022 7:21:18 PM	70550

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209F93**
Date Reported: **10/17/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-9-28-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/28/2022
Lab ID: 2209F93-007C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **mb**	
Diesel Range Organics (DRO)	0.018	0.016	0.064	J	mg/L	1	10/3/2022 11:35:47 PM	70492
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	10/3/2022 11:35:47 PM	70492
Surr: DNOP	101	0	42.2-138		%Rec	1	10/3/2022 11:35:47 PM	70492
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	10/12/2022 7:27:41 PM	70536
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	10/12/2022 7:27:41 PM	70536
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	10/12/2022 7:27:41 PM	70536
Di-n-octyl phthalate	ND	12	20		µg/L	1	10/12/2022 7:27:41 PM	70536
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	10/12/2022 7:27:41 PM	70536
Diethyl phthalate	ND	6.0	10		µg/L	1	10/12/2022 7:27:41 PM	70536
Dimethyl phthalate	ND	6.0	10		µg/L	1	10/12/2022 7:27:41 PM	70536
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	10/12/2022 7:27:41 PM	70536
2,4-Dinitrophenol	ND	16	20		µg/L	1	10/12/2022 7:27:41 PM	70536
2-Methylphenol	ND	5.0	10		µg/L	1	10/12/2022 7:27:41 PM	70536
3+4-Methylphenol	ND	5.1	10		µg/L	1	10/12/2022 7:27:41 PM	70536
Phenol	ND	18	20		µg/L	1	10/12/2022 7:27:41 PM	70536
Pyridine	ND	14	40		µg/L	1	10/12/2022 7:27:41 PM	70536
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	10/12/2022 7:27:41 PM	70536
Surr: 2-Fluorophenol	47.1	0	15-84.5		%Rec	1	10/12/2022 7:27:41 PM	70536
Surr: Phenol-d5	33.9	0	15-67		%Rec	1	10/12/2022 7:27:41 PM	70536
Surr: 2,4,6-Tribromophenol	65.9	0	15-108		%Rec	1	10/12/2022 7:27:41 PM	70536
Surr: Nitrobenzene-d5	54.3	0	16.8-112		%Rec	1	10/12/2022 7:27:41 PM	70536
Surr: 2-Fluorobiphenyl	53.6	0	15-101		%Rec	1	10/12/2022 7:27:41 PM	70536
Surr: 4-Terphenyl-d14	80.0	0	34.4-134		%Rec	1	10/12/2022 7:27:41 PM	70536
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	10/4/2022 5:28:00 PM	70536
Naphthalene	ND	0.20	0.30		µg/L	1	10/4/2022 5:28:00 PM	70536
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	10/4/2022 5:28:00 PM	70536
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	10/4/2022 5:28:00 PM	70536
Acenaphthene	ND	0.14	0.30		µg/L	1	10/4/2022 5:28:00 PM	70536
Fluorene	ND	0.095	0.30		µg/L	1	10/4/2022 5:28:00 PM	70536
Phenanthrene	ND	0.16	0.30		µg/L	1	10/4/2022 5:28:00 PM	70536
Anthracene	ND	0.14	0.30		µg/L	1	10/4/2022 5:28:00 PM	70536
Fluoranthene	ND	0.14	0.30		µg/L	1	10/4/2022 5:28:00 PM	70536
Pyrene	ND	0.32	1.0		µg/L	1	10/4/2022 5:28:00 PM	70536
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	10/4/2022 5:28:00 PM	70536
Chrysene	ND	0.25	0.30		µg/L	1	10/4/2022 5:28:00 PM	70536
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	10/4/2022 5:28:00 PM	70536
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	10/4/2022 5:28:00 PM	70536

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209F93**
Date Reported: **10/17/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-9-28-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/28/2022
Lab ID: 2209F93-007C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	61.6	0	15-108		%Rec	1	10/4/2022 5:28:00 PM	70536
Surr: 2-Fluorobiphenyl	51.3	0	15-107		%Rec	1	10/4/2022 5:28:00 PM	70536
Surr: 4-Terphenyl-d14	66.8	0	15-166		%Rec	1	10/4/2022 5:28:00 PM	70536

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209F93**
Date Reported: **10/17/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-9-28-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/28/2022
Lab ID: 2209F93-007D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.018	0.0016	0.0030		mg/L	1	10/3/2022 1:17:16 PM	70489
Beryllium	ND	0.00088	0.0020		mg/L	1	10/3/2022 1:17:16 PM	70489
Cadmium	ND	0.0018	0.0020		mg/L	1	10/3/2022 1:17:16 PM	70489
Chromium	0.0024	0.0020	0.0060	J	mg/L	1	10/3/2022 1:17:16 PM	70489
Cobalt	ND	0.0035	0.0060		mg/L	1	10/3/2022 1:17:16 PM	70489
Nickel	ND	0.0053	0.010		mg/L	1	10/3/2022 1:17:16 PM	70489
Silver	ND	0.0018	0.0050		mg/L	1	10/3/2022 1:17:16 PM	70489
Vanadium	ND	0.0035	0.050		mg/L	1	10/3/2022 1:17:16 PM	70489
Zinc	ND	0.0039	0.010		mg/L	1	10/3/2022 1:17:16 PM	70489
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	10/6/2022 3:11:06 PM	70489
Arsenic	ND	0.00022	0.0010		mg/L	1	10/5/2022 3:41:46 PM	70489
Lead	ND	0.00019	0.00050		mg/L	1	10/6/2022 3:11:06 PM	70489
Selenium	ND	0.00089	0.0010		mg/L	1	10/6/2022 3:11:06 PM	70489
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	10/6/2022 11:53:28 AM	70626

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209F93**
Date Reported: **10/17/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-9-28-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/28/2022
Lab ID: 2209F93-007E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.017	0.0011	0.0020		mg/L	1	10/4/2022 5:10:50 PM	C91551
Beryllium	ND	0.00088	0.0020		mg/L	1	10/4/2022 5:10:50 PM	C91551
Cadmium	ND	0.00098	0.0020		mg/L	1	10/4/2022 5:10:50 PM	C91551
Chromium	ND	0.0020	0.0060		mg/L	1	10/4/2022 5:10:50 PM	C91551
Cobalt	ND	0.0024	0.0060		mg/L	1	10/4/2022 5:10:50 PM	C91551
Nickel	ND	0.0033	0.010		mg/L	1	10/4/2022 5:10:50 PM	C91551
Silver	ND	0.0013	0.0050		mg/L	1	10/4/2022 5:10:50 PM	C91551
Vanadium	ND	0.0017	0.050		mg/L	1	10/4/2022 5:10:50 PM	C91551
Zinc	0.026	0.0032	0.010		mg/L	1	10/4/2022 5:10:50 PM	C91551
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	0.00055	0.00044	0.0010	J	mg/L	1	9/29/2022 2:39:55 PM	A91411
Arsenic	0.00015	0.00012	0.0010	J	mg/L	1	9/29/2022 2:39:55 PM	A91411
Lead	ND	0.000057	0.00050		mg/L	1	9/29/2022 2:39:55 PM	A91411
Selenium	ND	0.00034	0.0010		mg/L	1	9/29/2022 2:39:55 PM	A91411
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	10/6/2022 11:59:55 AM	70626

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209F93**
Date Reported: **10/17/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB 9-28-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/28/2022 11:30:00 AM
Lab ID: 2209F93-008A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	10/6/2022 3:09:00 AM	B91553
Toluene	ND	0.20	1.0		µg/L	1	10/6/2022 3:09:00 AM	B91553
Ethylbenzene	ND	0.21	1.0		µg/L	1	10/6/2022 3:09:00 AM	B91553
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	10/6/2022 3:09:00 AM	B91553
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	10/6/2022 3:09:00 AM	B91553
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 3:09:00 AM	B91553
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	10/6/2022 3:09:00 AM	B91553
Acetone	4.8	2.5	10	J	µg/L	1	10/6/2022 3:09:00 AM	B91553
Bromomethane	ND	0.85	3.0		µg/L	1	10/6/2022 3:09:00 AM	B91553
2-Butanone	16	2.0	10		µg/L	1	10/6/2022 3:09:00 AM	B91553
Carbon disulfide	ND	0.59	10		µg/L	1	10/6/2022 3:09:00 AM	B91553
Chlorobenzene	ND	0.16	1.0		µg/L	1	10/6/2022 3:09:00 AM	B91553
Chloroform	ND	0.13	1.0		µg/L	1	10/6/2022 3:09:00 AM	B91553
Chloromethane	ND	0.41	3.0		µg/L	1	10/6/2022 3:09:00 AM	B91553
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	10/6/2022 3:09:00 AM	B91553
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	10/6/2022 3:09:00 AM	B91553
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	10/6/2022 3:09:00 AM	B91553
Isopropylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 3:09:00 AM	B91553
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	10/6/2022 3:09:00 AM	B91553
Methylene Chloride	ND	0.50	3.0		µg/L	1	10/6/2022 3:09:00 AM	B91553
n-Butylbenzene	ND	0.25	3.0		µg/L	1	10/6/2022 3:09:00 AM	B91553
n-Propylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 3:09:00 AM	B91553
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	10/6/2022 3:09:00 AM	B91553
Styrene	ND	0.14	1.0		µg/L	1	10/6/2022 3:09:00 AM	B91553
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	10/6/2022 3:09:00 AM	B91553
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	10/6/2022 3:09:00 AM	B91553
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	10/6/2022 3:09:00 AM	B91553
Vinyl chloride	ND	0.32	1.0		µg/L	1	10/6/2022 3:09:00 AM	B91553
Xylenes, Total	ND	0.37	1.5		µg/L	1	10/6/2022 3:09:00 AM	B91553
Surr: 1,2-Dichloroethane-d4	98.7	0	70-130		%Rec	1	10/6/2022 3:09:00 AM	B91553
Surr: 4-Bromofluorobenzene	96.8	0	70-130		%Rec	1	10/6/2022 3:09:00 AM	B91553
Surr: Dibromofluoromethane	99.9	0	70-130		%Rec	1	10/6/2022 3:09:00 AM	B91553
Surr: Toluene-d8	94.2	0	70-130		%Rec	1	10/6/2022 3:09:00 AM	B91553

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209F93**
Date Reported: **10/17/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 3rd Quarter
Collection Date:
Lab ID: 2209F93-009A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	10/6/2022 4:18:00 AM	B91553
Toluene	ND	0.20	1.0		µg/L	1	10/6/2022 4:18:00 AM	B91553
Ethylbenzene	ND	0.21	1.0		µg/L	1	10/6/2022 4:18:00 AM	B91553
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	10/6/2022 4:18:00 AM	B91553
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	10/6/2022 4:18:00 AM	B91553
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 4:18:00 AM	B91553
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	10/6/2022 4:18:00 AM	B91553
Acetone	3.4	2.5	10	J	µg/L	1	10/6/2022 4:18:00 AM	B91553
Bromomethane	ND	0.85	3.0		µg/L	1	10/6/2022 4:18:00 AM	B91553
2-Butanone	ND	2.0	10		µg/L	1	10/6/2022 4:18:00 AM	B91553
Carbon disulfide	ND	0.59	10		µg/L	1	10/6/2022 4:18:00 AM	B91553
Chlorobenzene	ND	0.16	1.0		µg/L	1	10/6/2022 4:18:00 AM	B91553
Chloroform	ND	0.13	1.0		µg/L	1	10/6/2022 4:18:00 AM	B91553
Chloromethane	ND	0.41	3.0		µg/L	1	10/6/2022 4:18:00 AM	B91553
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	10/6/2022 4:18:00 AM	B91553
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	10/6/2022 4:18:00 AM	B91553
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	10/6/2022 4:18:00 AM	B91553
Isopropylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 4:18:00 AM	B91553
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	10/6/2022 4:18:00 AM	B91553
Methylene Chloride	ND	0.50	3.0		µg/L	1	10/6/2022 4:18:00 AM	B91553
n-Butylbenzene	ND	0.25	3.0		µg/L	1	10/6/2022 4:18:00 AM	B91553
n-Propylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 4:18:00 AM	B91553
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	10/6/2022 4:18:00 AM	B91553
Styrene	ND	0.14	1.0		µg/L	1	10/6/2022 4:18:00 AM	B91553
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	10/6/2022 4:18:00 AM	B91553
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	10/6/2022 4:18:00 AM	B91553
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	10/6/2022 4:18:00 AM	B91553
Vinyl chloride	ND	0.32	1.0		µg/L	1	10/6/2022 4:18:00 AM	B91553
Xylenes, Total	ND	0.37	1.5		µg/L	1	10/6/2022 4:18:00 AM	B91553
Surr: 1,2-Dichloroethane-d4	99.1	0	70-130		%Rec	1	10/6/2022 4:18:00 AM	B91553
Surr: 4-Bromofluorobenzene	98.4	0	70-130		%Rec	1	10/6/2022 4:18:00 AM	B91553
Surr: Dibromofluoromethane	100	0	70-130		%Rec	1	10/6/2022 4:18:00 AM	B91553
Surr: Toluene-d8	94.5	0	70-130		%Rec	1	10/6/2022 4:18:00 AM	B91553

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209F93**
Date Reported: **10/17/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 3rd Quarter
Collection Date:
Lab ID: 2209F93-009B
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	10/4/2022 7:51:28 PM	70550

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

ANALYTICAL REPORT

October 06, 2022

Hall Environmental Analysis Laboratory

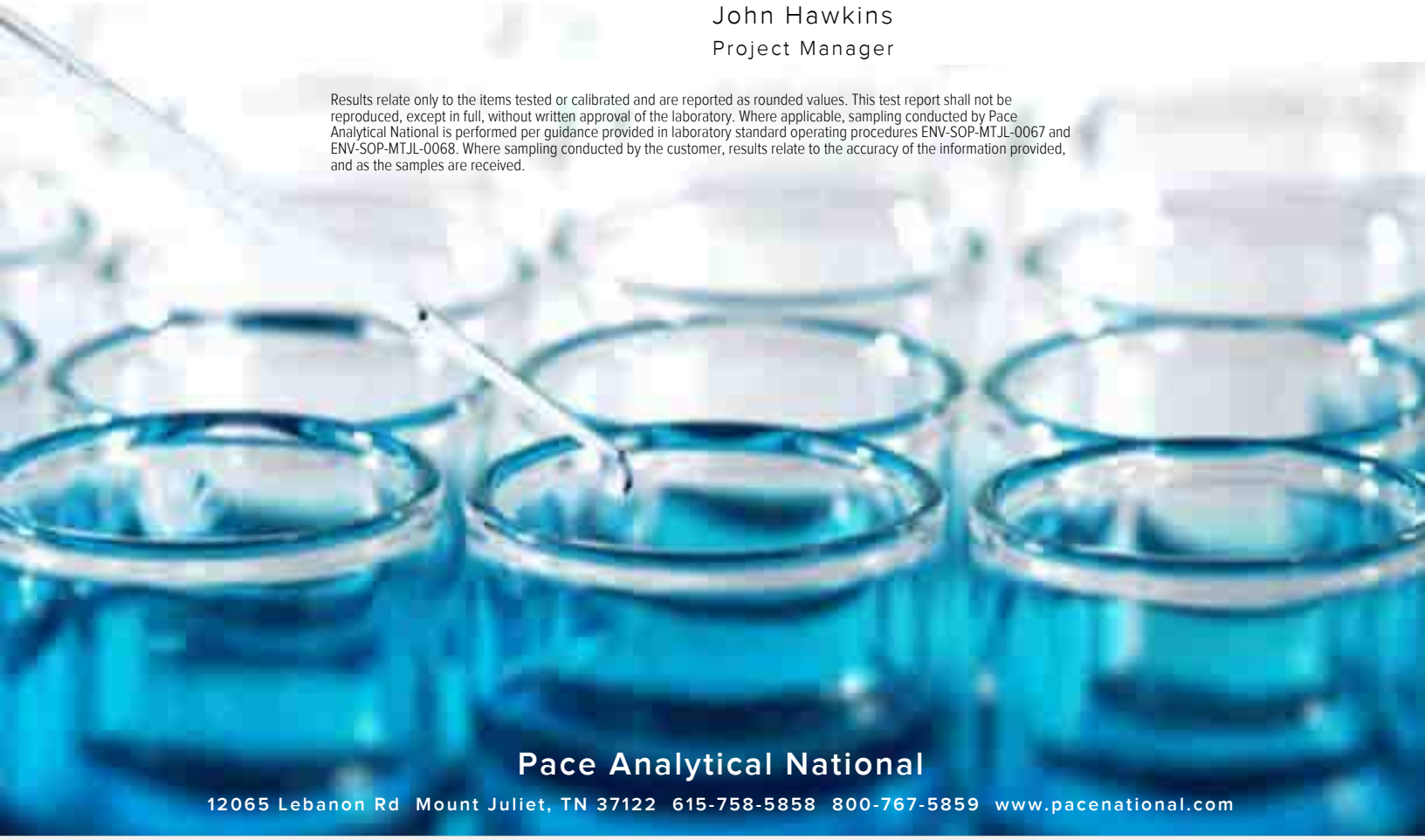
Sample Delivery Group:	L1541658
Samples Received:	09/30/2022
Project Number:	
Description:	

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By:

John Hawkins
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 4

Sr: Sample Results 5

2209F93-001F EB-09-28-22 L1541658-01 5

2209F93-002F BW-1C L1541658-02 6

2209F93-003F BW-2C L1541658-03 7

2209F93-004F BW-2B L1541658-04 8

2209F93-005F BW-3C L1541658-05 9

2209F93-006F BW-3B L1541658-06 10

2209F93-007F DUP-9-28-22 L1541658-07 11

Qc: Quality Control Summary 12

Wet Chemistry by Method 4500CN E-2016 12

Gl: Glossary of Terms 13

Al: Accreditations & Locations 14

Sc: Sample Chain of Custody 15

SAMPLE SUMMARY

2209F93-001F EB-09-28-22 L1541658-01 GW

Collected by	Collected date/time	Received date/time
	09/28/22 09:30	09/30/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1935876	1	10/05/22 08:50	10/05/22 17:32	LDT	Mt. Juliet, TN

2209F93-002F BW-1C L1541658-02 GW

Collected by	Collected date/time	Received date/time
	09/28/22 09:35	09/30/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1935876	1	10/05/22 08:50	10/05/22 17:34	LDT	Mt. Juliet, TN

2209F93-003F BW-2C L1541658-03 GW

Collected by	Collected date/time	Received date/time
	09/28/22 10:15	09/30/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1935876	1	10/05/22 08:50	10/05/22 17:39	LDT	Mt. Juliet, TN

2209F93-004F BW-2B L1541658-04 GW

Collected by	Collected date/time	Received date/time
	09/28/22 10:35	09/30/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1935876	1	10/05/22 08:50	10/05/22 17:40	LDT	Mt. Juliet, TN

2209F93-005F BW-3C L1541658-05 GW

Collected by	Collected date/time	Received date/time
	09/28/22 11:00	09/30/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1935876	1	10/05/22 08:50	10/05/22 17:41	LDT	Mt. Juliet, TN

2209F93-006F BW-3B L1541658-06 GW

Collected by	Collected date/time	Received date/time
	09/28/22 11:30	09/30/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1935876	1	10/05/22 08:50	10/05/22 17:42	LDT	Mt. Juliet, TN

2209F93-007F DUP-9-28-22 L1541658-07 GW

Collected by	Collected date/time	Received date/time
	09/28/22 00:00	09/30/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1935876	1	10/05/22 08:50	10/05/22 17:43	LDT	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	10/05/2022 17:32	WG1935876

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	10/05/2022 17:34	WG1935876

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	10/05/2022 17:39	WG1935876

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	10/05/2022 17:40	WG1935876

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	10/05/2022 17:41	WG1935876

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	10/05/2022 17:42	WG1935876

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	10/05/2022 17:43	WG1935876

Method Blank (MB)

(MB) R3845183-1 10/05/22 17:15

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1541617-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1541617-02 10/05/22 17:30 • (DUP) R3845183-3 10/05/22 17:31

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

L1541658-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1541658-01 10/05/22 17:32 • (DUP) R3845183-4 10/05/22 17:33

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3845183-2 10/05/22 17:16

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.106	106	87.1-120	

L1541658-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1541658-02 10/05/22 17:34 • (MS) R3845183-5 10/05/22 17:35 • (MSD) R3845183-6 10/05/22 17:36

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.103	0.102	103	102	1	90.0-110			0.976	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
	The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Received by OCD: 4/21/2023 9:21:57 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

J106

SUB CONTRATOR: Pace TN	COMPANY: PACE TN	PHONE: (800) 767-5859	FAX: (615) 758-5859
ADDRESS: 12065 Lebanon Rd		ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: Mt. Juliet, TN 37122			

LIS41658

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS	
1	2209F93-001F	EB-09-28-22	500AMBHDP E-NAOH	Groundwater	9/28/2022 9:30:00 AM	1	Total Cyanide J and MDL	-01
2	2209F93-002F	BW-1C	500AMBHDP E-NAOH	Groundwater	9/28/2022 9:35:00 AM	1	Total Cyanide J and MDL	-02
3	2209F93-003F	BW-2C	500AMBHDP E-NAOH	Groundwater	9/28/2022 10:15:00 AM	1	Total Cyanide J and MDL	-03
4	2209F93-004F	BW-2B	500AMBHDP E-NAOH	Groundwater	9/28/2022 10:35:00 AM	1	Total Cyanide J and MDL	-04
5	2209F93-005F	BW-3C	500AMBHDP E-NAOH	Groundwater	9/28/2022 11:00:00 AM	1	Total Cyanide J and MDL	-05
6	2209F93-006F	BW-3B	500AMBHDP E-NAOH	Groundwater	9/28/2022 11:30:00 AM	1	Total Cyanide J and MDL	-06
7	2209F93-007F	DUP-9-28-22	500AMBHDP E-NAOH	Groundwater	9/28/2022	1	Total Cyanide J and MDL	-07

CONT.-7
TB-Ø

9221 5755 8093 7529

Sample Receipt Checklist

COC Seal Present/Intact:	Y N	If Applicable	
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	Y N	Pres.Correct/Check:	Y N
Correct bottles used:	Y N		
Sufficient volume sent:	Y N		
RAD Screen <0.5 mR/hr:	Y N		

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By: CMC	Date: 9/29/2022	Time: 8:07 AM	Received By:	Date: 04/30/22	Time: 1000
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☑ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY
Temp of samples NWG 3.1+0=3.1 °C Attempt to Cool ?
Comments:

Released to Imaging: 4/21/2023 9:40:26 AM

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209F93**

17-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70489**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **70489**	RunNo: **91484**
Prep Date: **9/29/2022**	Analysis Date: **10/3/2022**	SeqNo: **3276571** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LCSLL-70489**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **70489**	RunNo: **91484**
Prep Date: **9/29/2022**	Analysis Date: **10/3/2022**	SeqNo: **3276572** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0021	0.0030	0.002000	0	105	50	150			J
Beryllium	0.0020	0.0020	0.002000	0	101	50	150			
Cadmium	0.0015	0.0020	0.002000	0	77.4	50	150			J
Chromium	0.0066	0.0060	0.006000	0	111	50	150			
Cobalt	0.0081	0.0060	0.006000	0	135	50	150			
Nickel	0.0040	0.010	0.005000	0	80.9	50	150			J
Silver	0.0048	0.0050	0.005000	0	95.7	50	150			J
Vanadium	0.011	0.050	0.01000	0	107	50	150			J
Zinc	0.011	0.010	0.01000	0	113	50	150			

Sample ID: **LCS-70489**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **70489**	RunNo: **91484**
Prep Date: **9/29/2022**	Analysis Date: **10/3/2022**	SeqNo: **3276573** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0030	0.5000	0	99.4	85	115			
Beryllium	0.51	0.0020	0.5000	0	102	85	115			
Cadmium	0.49	0.0020	0.5000	0	97.5	85	115			
Chromium	0.49	0.0060	0.5000	0	97.8	85	115			
Cobalt	0.49	0.0060	0.5000	0	97.2	85	115			
Nickel	0.47	0.010	0.5000	0	94.5	85	115			
Silver	0.094	0.0050	0.1000	0	94.2	85	115			
Vanadium	0.50	0.050	0.5000	0	99.7	85	115			
Zinc	0.49	0.010	0.5000	0	99.0	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209F93**

17-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-B**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B91551**	RunNo: **91551**
Prep Date:	Analysis Date: **10/4/2022**	SeqNo: **3279591** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS-B**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B91551**	RunNo: **91551**
Prep Date:	Analysis Date: **10/4/2022**	SeqNo: **3279592** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0019	0.0020	0.002000	0	93.7	50	150			J
Beryllium	0.0012	0.0020	0.002000	0	61.9	50	150			J
Cadmium	0.0023	0.0020	0.002000	0	113	50	150			
Chromium	0.0061	0.0060	0.006000	0	101	50	150			
Cobalt	0.0071	0.0060	0.006000	0	118	50	150			
Nickel	0.0051	0.010	0.005000	0	103	50	150			J
Silver	0.0049	0.0050	0.005000	0	99.0	50	150			J
Vanadium	0.0076	0.050	0.01000	0	75.6	50	150			J
Zinc	0.010	0.010	0.01000	0	102	50	150			

Sample ID: **LCS-B**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B91551**	RunNo: **91551**
Prep Date:	Analysis Date: **10/4/2022**	SeqNo: **3279593** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.52	0.0020	0.5000	0	103	85	115			
Beryllium	0.50	0.0020	0.5000	0	101	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.6	85	115			
Chromium	0.51	0.0060	0.5000	0	103	85	115			
Cobalt	0.49	0.0060	0.5000	0	97.6	85	115			
Nickel	0.51	0.010	0.5000	0	102	85	115			
Silver	0.11	0.0050	0.1000	0	109	85	115			
Vanadium	0.51	0.050	0.5000	0	101	85	115			
Zinc	0.51	0.010	0.5000	0	101	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209F93**

17-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-C**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **C91551**	RunNo: **91551**
Prep Date:	Analysis Date: **10/4/2022**	SeqNo: **3279594** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS-C**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **C91551**	RunNo: **91551**
Prep Date:	Analysis Date: **10/4/2022**	SeqNo: **3279595** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0019	0.0020	0.002000	0	95.0	50	150			J
Beryllium	0.0013	0.0020	0.002000	0	67.2	50	150			J
Cadmium	0.0025	0.0020	0.002000	0	123	50	150			
Chromium	0.0065	0.0060	0.006000	0	109	50	150			
Cobalt	0.0069	0.0060	0.006000	0	114	50	150			
Nickel	0.0037	0.010	0.005000	0	74.7	50	150			J
Silver	0.0049	0.0050	0.005000	0	97.2	50	150			J
Vanadium	0.0076	0.050	0.01000	0	75.9	50	150			J
Zinc	0.014	0.010	0.01000	0	137	50	150			

Sample ID: **LCS-C**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **C91551**	RunNo: **91551**
Prep Date:	Analysis Date: **10/4/2022**	SeqNo: **3279596** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.52	0.0020	0.5000	0	104	85	115			
Beryllium	0.51	0.0020	0.5000	0	102	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.4	85	115			
Chromium	0.51	0.0060	0.5000	0	102	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.0	85	115			
Nickel	0.51	0.010	0.5000	0	102	85	115			
Silver	0.11	0.0050	0.1000	0	109	85	115			
Vanadium	0.51	0.050	0.5000	0	101	85	115			
Zinc	0.51	0.010	0.5000	0	102	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209F93**

17-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **2209F93-007EMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **DUP-9-28-22**	Batch ID: **C91551**	RunNo: **91551**
Prep Date:	Analysis Date: **10/4/2022**	SeqNo: **3279706** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.52	0.0020	0.5000	0.01735	100	70	130			
Beryllium	0.49	0.0020	0.5000	0	98.0	70	130			
Cadmium	0.48	0.0020	0.5000	0	95.7	70	130			
Chromium	0.49	0.0060	0.5000	0	98.4	70	130			
Cobalt	0.47	0.0060	0.5000	0	93.5	70	130			
Nickel	0.49	0.010	0.5000	0	97.6	70	130			
Silver	0.10	0.0050	0.1000	0	101	70	130			
Vanadium	0.49	0.050	0.5000	0	98.1	70	130			
Zinc	0.51	0.010	0.5000	0.02585	96.7	70	130			

Sample ID: **2209F93-007EMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **DUP-9-28-22**	Batch ID: **C91551**	RunNo: **91551**
Prep Date:	Analysis Date: **10/4/2022**	SeqNo: **3279707** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.52	0.0020	0.5000	0.01735	101	70	130	0.769	20	
Beryllium	0.50	0.0020	0.5000	0	99.0	70	130	1.06	20	
Cadmium	0.48	0.0020	0.5000	0	96.1	70	130	0.407	20	
Chromium	0.50	0.0060	0.5000	0	99.5	70	130	1.07	20	
Cobalt	0.47	0.0060	0.5000	0	93.9	70	130	0.402	20	
Nickel	0.49	0.010	0.5000	0	98.5	70	130	0.835	20	
Silver	0.10	0.0050	0.1000	0	101	70	130	0.215	20	
Vanadium	0.49	0.050	0.5000	0	98.8	70	130	0.671	20	
Zinc	0.51	0.010	0.5000	0.02585	97.5	70	130	0.840	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209F93**

17-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **A91411**	RunNo: **91411**
Prep Date:	Analysis Date: **9/29/2022**	SeqNo: **3272724** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **A91411**	RunNo: **91411**
Prep Date:	Analysis Date: **9/29/2022**	SeqNo: **3272725** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0010	0.0010	0.001000	0	99.9	50	150			J
Arsenic	0.0011	0.0010	0.001000	0	106	50	150			
Lead	0.00054	0.00050	0.0005000	0	108	50	150			
Selenium	0.00084	0.0010	0.001000	0	84.4	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **A91411**	RunNo: **91411**
Prep Date:	Analysis Date: **9/29/2022**	SeqNo: **3272726** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.7	85	115			
Arsenic	0.024	0.0010	0.02500	0	97.8	85	115			
Lead	0.012	0.00050	0.01250	0	95.8	85	115			
Selenium	0.025	0.0010	0.02500	0	102	85	115			

Sample ID: **MB-70489**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **70489**	RunNo: **91465**
Prep Date: **9/29/2022**	Analysis Date: **9/30/2022**	SeqNo: **3275551** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **2209F93-001DMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Metals**
Client ID: **EB-09-28-22**	Batch ID: **70489**	RunNo: **91465**
Prep Date: **9/29/2022**	Analysis Date: **9/30/2022**	SeqNo: **3275628** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209F93**

17-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **2209F93-001DMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Metals**
Client ID: **EB-09-28-22**	Batch ID: **70489**	RunNo: **91465**
Prep Date: **9/29/2022**	Analysis Date: **9/30/2022**	SeqNo: **3275628** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	103	70	130			
Arsenic	0.026	0.0010	0.02500	0	103	70	130			
Lead	0.013	0.00050	0.01250	0	103	70	130			
Selenium	0.026	0.0010	0.02500	0	102	70	130			

Sample ID: **2209F93-001DMSDL**	SampType: **MSD**	TestCode: **EPA 200.8: Metals**
Client ID: **EB-09-28-22**	Batch ID: **70489**	RunNo: **91465**
Prep Date: **9/29/2022**	Analysis Date: **9/30/2022**	SeqNo: **3275629** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	103	70	130	0.796	20	
Arsenic	0.026	0.0010	0.02500	0	106	70	130	2.97	20	
Lead	0.013	0.00050	0.01250	0	104	70	130	1.36	20	
Selenium	0.025	0.0010	0.02500	0	98.7	70	130	3.68	20	

Sample ID: **MSLCSLL-70489**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **70489**	RunNo: **91465**
Prep Date: **9/29/2022**	Analysis Date: **9/30/2022**	SeqNo: **3275643** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00096	0.0010	0.001000	0	95.8	50	150			J
Arsenic	0.00097	0.0010	0.001000	0	97.1	50	150			J
Lead	0.00050	0.00050	0.0005000	0	99.5	50	150			J
Selenium	0.0015	0.0010	0.001000	0	149	50	150			

Sample ID: **MSLCS-70489**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **70489**	RunNo: **91465**
Prep Date: **9/29/2022**	Analysis Date: **9/30/2022**	SeqNo: **3275644** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	99.1	85	115			
Arsenic	0.025	0.0010	0.02500	0	98.7	85	115			
Lead	0.013	0.00050	0.01250	0	101	85	115			
Selenium	0.026	0.0010	0.02500	0	102	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209F93**

17-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A91411**	RunNo: **91411**
Prep Date:	Analysis Date: **9/29/2022**	SeqNo: **3272668** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A91411**	RunNo: **91411**
Prep Date:	Analysis Date: **9/29/2022**	SeqNo: **3272669** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0010	0.0010	0.001000	0	99.9	50	150			J
Arsenic	0.0011	0.0010	0.001000	0	106	50	150			
Lead	0.00054	0.00050	0.0005000	0	108	50	150			
Selenium	0.00084	0.0010	0.001000	0	84.4	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A91411**	RunNo: **91411**
Prep Date:	Analysis Date: **9/29/2022**	SeqNo: **3272670** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.7	85	115			
Arsenic	0.024	0.0010	0.02500	0	97.8	85	115			
Lead	0.012	0.00050	0.01250	0	95.8	85	115			
Selenium	0.025	0.0010	0.02500	0	102	85	115			

Sample ID: **2209F93-007EMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **DUP-9-28-22**	Batch ID: **A91411**	RunNo: **91411**
Prep Date:	Analysis Date: **9/29/2022**	SeqNo: **3272717** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.027	0.0010	0.02500	0.0005509	105	70	130			
Arsenic	0.027	0.0010	0.02500	0.0001504	109	70	130			
Lead	0.011	0.00050	0.01250	0	91.8	70	130			

Sample ID: **2209F93-007EMSDL**	SampType: **MSD**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **DUP-9-28-22**	Batch ID: **A91411**	RunNo: **91411**
Prep Date:	Analysis Date: **9/29/2022**	SeqNo: **3272718** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.027	0.0010	0.02500	0.0005509	104	70	130	0.316	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209F93**

17-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **2209F93-007EMSDL**	SampType: **MSD**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **DUP-9-28-22**	Batch ID: **A91411**	RunNo: **91411**
Prep Date:	Analysis Date: **9/29/2022**	SeqNo: **3272718** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.028	0.0010	0.02500	0.0001504	110	70	130	1.08	20	
Lead	0.012	0.00050	0.01250	0	93.7	70	130	2.02	20	

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B91488**	RunNo: **91488**
Prep Date:	Analysis Date: **10/3/2022**	SeqNo: **3276766** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B91488**	RunNo: **91488**
Prep Date:	Analysis Date: **10/3/2022**	SeqNo: **3276767** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0010	0.0010	0.001000	0	104	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B91488**	RunNo: **91488**
Prep Date:	Analysis Date: **10/3/2022**	SeqNo: **3276768** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	103	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209F93**

17-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70626**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW**	Batch ID: **70626**	RunNo: **91595**
Prep Date: **10/5/2022**	Analysis Date: **10/6/2022**	SeqNo: **3281395** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-70626**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC**	Batch ID: **70626**	RunNo: **91595**
Prep Date: **10/5/2022**	Analysis Date: **10/6/2022**	SeqNo: **3281396** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00014	0.00020	0.0001500	0	93.4	50	150			J

Sample ID: **LCS-70626**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW**	Batch ID: **70626**	RunNo: **91595**
Prep Date: **10/5/2022**	Analysis Date: **10/6/2022**	SeqNo: **3281397** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0053	0.00020	0.005000	0	106	85	115			

Sample ID: **2209F93-007DMS**	SampType: **MS**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **DUP-9-28-22**	Batch ID: **70626**	RunNo: **91595**
Prep Date: **10/5/2022**	Analysis Date: **10/6/2022**	SeqNo: **3281440** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0052	0.00020	0.005000	0	104	75	125			

Sample ID: **2209F93-007DMSD**	SampType: **MSD**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **DUP-9-28-22**	Batch ID: **70626**	RunNo: **91595**
Prep Date: **10/5/2022**	Analysis Date: **10/6/2022**	SeqNo: **3281441** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0053	0.00020	0.005000	0	106	75	125	1.85	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209F93**

17-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70550**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **70550**	RunNo: **91538**
Prep Date: **10/4/2022**	Analysis Date: **10/4/2022**	SeqNo: **3279152** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-70550**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW**	Batch ID: **70550**	RunNo: **91538**
Prep Date: **10/4/2022**	Analysis Date: **10/4/2022**	SeqNo: **3279153** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.12	0.010	0.1000	0	117	70	130			

Sample ID: **LCSD-70550**	SampType: **LCSD**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSS02**	Batch ID: **70550**	RunNo: **91538**
Prep Date: **10/4/2022**	Analysis Date: **10/4/2022**	SeqNo: **3279154** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.10	0.010	0.1000	0	99.8	70	130	16.0	20	

Sample ID: **MB-70550**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **70550**	RunNo: **91538**
Prep Date: **10/4/2022**	Analysis Date: **10/4/2022**	SeqNo: **3279176** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **MB-70493**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **70493**	RunNo: **91564**
Prep Date: **10/3/2022**	Analysis Date: **10/3/2022**	SeqNo: **3279928** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **MB-70493**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **70493**	RunNo: **91564**
Prep Date: **10/3/2022**	Analysis Date: **10/3/2022**	SeqNo: **3279929** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209F93**

17-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **LCS-70493**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW**	Batch ID: **70493**	RunNo: **91564**
Prep Date: **10/3/2022**	Analysis Date: **10/3/2022**	SeqNo: **3279940** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.098	0.010	0.1000	0	98.0	70	130			

Sample ID: **LCSD-70493**	SampType: **LCSD**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSS02**	Batch ID: **70493**	RunNo: **91564**
Prep Date: **10/3/2022**	Analysis Date: **10/3/2022**	SeqNo: **3279941** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.091	0.010	0.1000	0	90.7	70	130	7.71	20	

Sample ID: **2209F93-001BMS**	SampType: **MS**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **EB-09-28-22**	Batch ID: **70493**	RunNo: **91564**
Prep Date: **10/3/2022**	Analysis Date: **10/4/2022**	SeqNo: **3279959** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.080	0.0094	0.09434	0	85.1	65	135			

Sample ID: **LCS-70493**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW**	Batch ID: **70493**	RunNo: **91564**
Prep Date: **10/3/2022**	Analysis Date: **10/3/2022**	SeqNo: **3285791** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.093	0.010	0.1000	0	93.4	70	130			

Sample ID: **LCSD-70493**	SampType: **LCSD**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSS02**	Batch ID: **70493**	RunNo: **91564**
Prep Date: **10/3/2022**	Analysis Date: **10/3/2022**	SeqNo: **3285792** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.084	0.010	0.1000	0	84.5	70	130	10.1	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209F93**

17-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70492**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **PBW**	Batch ID: **70492**	RunNo: **91480**
Prep Date: **9/29/2022**	Analysis Date: **10/3/2022**	SeqNo: **3277573** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.019	0.064								J
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.036		0.03750		95.6	42.2	138			

Sample ID: **LCS-70492**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSW**	Batch ID: **70492**	RunNo: **91480**
Prep Date: **9/29/2022**	Analysis Date: **10/3/2022**	SeqNo: **3277575** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.12	0.064	0.1875	0	62.9	31.7	75.4			
Surr: DNOP	0.017		0.01875		91.7	42.2	138			

Sample ID: **LCSD-70492**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02**	Batch ID: **70492**	RunNo: **91480**
Prep Date: **9/29/2022**	Analysis Date: **10/3/2022**	SeqNo: **3277578** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.14	0.064	0.1875	0	73.8	31.7	75.4	15.9	20	
Surr: DNOP	0.017		0.01875		92.9	42.2	138	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209F93**

17-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **A91437**	RunNo: **91437**
Prep Date:	Analysis Date: **9/30/2022**	SeqNo: **3275406** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.47	0.050	0.5000	0	94.8	80	120			
Surr: BFB	43		20.00		213	70	130			S

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **A91437**	RunNo: **91437**
Prep Date:	Analysis Date: **9/30/2022**	SeqNo: **3275407** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	22		20.00		112	70	130			

Sample ID: **2209f93-001a ms**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **EB-09-28-22**	Batch ID: **A91437**	RunNo: **91437**
Prep Date:	Analysis Date: **9/30/2022**	SeqNo: **3275415** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.45	0.050	0.5000	0	89.1	70	130			
Surr: BFB	43		20.00		214	70	130			S

Sample ID: **2209F93-001A MSD**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **EB-09-28-22**	Batch ID: **A91437**	RunNo: **91437**
Prep Date:	Analysis Date: **9/30/2022**	SeqNo: **3275416** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	92.0	70	130	3.23	20	
Surr: BFB	43		20.00		214	70	130	0	0	S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209F93**

17-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R91553**	RunNo: **91553**
Prep Date:	Analysis Date: **10/5/2022**	SeqNo: **3279783** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	103	70	130			
Toluene	21	1.0	20.00	0	103	70	130			
Chlorobenzene	21	1.0	20.00	0	104	70	130			
1,1-Dichloroethene	19	1.0	20.00	0	95.9	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	99.5	70	130			
Surr: 1,2-Dichloroethane-d4	9.9		10.00		98.7	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		106	70	130			
Surr: Dibromofluoromethane	9.8		10.00		98.0	70	130			
Surr: Toluene-d8	9.5		10.00		95.4	70	130			

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R91553**	RunNo: **91553**
Prep Date:	Analysis Date: **10/5/2022**	SeqNo: **3280459** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209F93**

17-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R91553**	RunNo: **91553**
Prep Date:	Analysis Date: **10/5/2022**	SeqNo: **3280459** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		101	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		100	70	130			
Surr: Dibromofluoromethane	10		10.00		100	70	130			
Surr: Toluene-d8	9.6		10.00		95.7	70	130			

Sample ID: **100ng lcs 2**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **B91553**	RunNo: **91553**
Prep Date:	Analysis Date: **10/6/2022**	SeqNo: **3280489** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	97.3	70	130			
Toluene	20	1.0	20.00	0	101	70	130			
Chlorobenzene	21	1.0	20.00	0	104	70	130			
1,1-Dichloroethene	18	1.0	20.00	0	90.1	70	130			
Trichloroethene (TCE)	19	1.0	20.00	0	93.2	70	130			
Surr: 1,2-Dichloroethane-d4	9.6		10.00		96.1	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	9.5		10.00		95.4	70	130			
Surr: Toluene-d8	9.7		10.00		96.8	70	130			

Sample ID: **mb 2**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **B91553**	RunNo: **91553**
Prep Date:	Analysis Date: **10/6/2022**	SeqNo: **3280490** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209F93**

17-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **mb 2**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **B91553**	RunNo: **91553**
Prep Date:	Analysis Date: **10/6/2022**	SeqNo: **3280490** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.9		10.00		98.7	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.2	70	130			
Surr: Dibromofluoromethane	9.8		10.00		97.6	70	130			
Surr: Toluene-d8	9.5		10.00		95.1	70	130			

Sample ID: **2209F93-008ams**	SampType: **MS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **FB 9-28-22**	Batch ID: **B91553**	RunNo: **91553**
Prep Date:	Analysis Date: **10/6/2022**	SeqNo: **3280492** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	92.5	70	130			
Toluene	19	1.0	20.00	0	93.2	70	130			
Chlorobenzene	19	1.0	20.00	0	95.2	70	130			
1,1-Dichloroethene	17	1.0	20.00	0	82.9	70	130			
Trichloroethene (TCE)	16	1.0	20.00	0	82.3	70	130			
Surr: 1,2-Dichloroethane-d4	9.7		10.00		97.4	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	9.6		10.00		96.4	70	130			
Surr: Toluene-d8	9.7		10.00		96.5	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209F93**

17-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **2209F93-008amsd**	SampType: **MSD**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **FB 9-28-22**	Batch ID: **B91553**	RunNo: **91553**
Prep Date:	Analysis Date: **10/6/2022**	SeqNo: **3280493** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	23	1.0	20.00	0	114	70	130	20.5	20	R
Toluene	22	1.0	20.00	0	111	70	130	17.3	20	
Chlorobenzene	23	1.0	20.00	0	114	70	130	17.7	20	
1,1-Dichloroethene	20	1.0	20.00	0	98.5	70	130	17.2	20	
Trichloroethene (TCE)	20	1.0	20.00	0	100	70	130	19.7	20	
Surr: 1,2-Dichloroethane-d4	10		10.00		101	70	130	0	0	
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130	0	0	
Surr: Dibromofluoromethane	9.9		10.00		98.7	70	130	0	0	
Surr: Toluene-d8	9.5		10.00		94.9	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209F93**

17-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70536**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **70536**	RunNo: **91758**
Prep Date: **10/3/2022**	Analysis Date: **10/12/2022**	SeqNo: **3289568** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Anthracene	ND	10								
Benz(a)anthracene	ND	5.0								
Benzo(b)fluoranthene	ND	10								
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	10								
2,4-Dinitrophenol	ND	20								
Fluoranthene	ND	10								
Fluorene	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
1-Methylnaphthalene	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
Naphthalene	ND	5.0								
Phenanthrene	ND	10								
Phenol	ND	20								
Pyrene	ND	10								
Pyridine	ND	40								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	120		200.0		59.9	15	84.5			
Surr: Phenol-d5	88		200.0		44.2	15	67			
Surr: 2,4,6-Tribromophenol	140		200.0		69.8	15	108			
Surr: Nitrobenzene-d5	71		100.0		71.4	16.8	112			
Surr: 2-Fluorobiphenyl	66		100.0		65.8	15	101			
Surr: 4-Terphenyl-d14	86		100.0		85.7	34.4	134			

Sample ID: **LCS-70536**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **70536**	RunNo: **91758**
Prep Date: **10/3/2022**	Analysis Date: **10/12/2022**	SeqNo: **3289569** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209F93**

17-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **LCS-70536**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **70536**	RunNo: **91758**
Prep Date: **10/3/2022**	Analysis Date: **10/12/2022**	SeqNo: **3289569** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	70	10	100.0	0	69.5	21.3	104			
1,4-Dichlorobenzene	51	5.0	100.0	0	50.6	15	89.8			
Phenol	98	20	200.0	0	48.8	17	61.1			
Pyrene	83	10	100.0	0	83.4	61	123			
Surr: 2-Fluorophenol	120		200.0		60.8	15	84.5			
Surr: Phenol-d5	90		200.0		45.1	15	67			
Surr: 2,4,6-Tribromophenol	160		200.0		79.5	15	108			
Surr: Nitrobenzene-d5	75		100.0		74.6	16.8	112			
Surr: 2-Fluorobiphenyl	67		100.0		66.5	15	101			
Surr: 4-Terphenyl-d14	92		100.0		91.8	34.4	134			

Sample ID: **LCSD-70536**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **70536**	RunNo: **91758**
Prep Date: **10/3/2022**	Analysis Date: **10/12/2022**	SeqNo: **3289570** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	63	10	100.0	0	63.4	21.3	104	9.13	45.3	
1,4-Dichlorobenzene	44	5.0	100.0	0	44.0	15	89.8	14.0	39.6	
Phenol	89	20	200.0	0	44.4	17	61.1	9.52	42.5	
Pyrene	79	10	100.0	0	79.2	61	123	5.22	11.8	
Surr: 2-Fluorophenol	110		200.0		57.3	15	84.5	0	0	
Surr: Phenol-d5	87		200.0		43.4	15	67	0	0	
Surr: 2,4,6-Tribromophenol	150		200.0		75.1	15	108	0	0	
Surr: Nitrobenzene-d5	75		100.0		74.6	16.8	112	0	0	
Surr: 2-Fluorobiphenyl	65		100.0		64.6	15	101	0	0	
Surr: 4-Terphenyl-d14	94		100.0		93.9	34.4	134	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209F93**

17-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **mb-70506**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **70506**	RunNo: **91491**
Prep Date: **9/30/2022**	Analysis Date: **10/3/2022**	SeqNo: **3277033** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.30								
1-Methylnaphthalene	ND	0.30								
2-Methylnaphthalene	ND	0.30								
Acenaphthene	ND	0.30								
Fluorene	ND	0.30								
Phenanthrene	ND	0.30								
Anthracene	ND	0.30								
Fluoranthene	ND	0.30								
Pyrene	ND	1.0								
Benz(a)anthracene	ND	0.30								
Chrysene	ND	0.30								
Benzo(b)fluoranthene	ND	0.30								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	31		100.0		31.2	15	108			
Surr: 2,4,6-Tribromophenol	13		200.0		6.32	15	112			S
Surr: 2-Fluorobiphenyl	27		100.0		26.5	15	107			
Surr: 4-Terphenyl-d14	49		100.0		48.8	15	166			

Sample ID: **lcs-70506-lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **70506**	RunNo: **91491**
Prep Date: **9/30/2022**	Analysis Date: **10/3/2022**	SeqNo: **3277034** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.84	0.30	2.000	0	42.0	15	60.5			
Naphthalene	1.2	0.30	2.000	0	61.0	15	78.3			
1-Methylnaphthalene	1.2	0.30	2.000	0	62.0	15	79.6			
2-Methylnaphthalene	1.2	0.30	2.000	0	61.0	15	78.6			
Acenaphthene	1.4	0.30	2.000	0	72.0	15	92			
Fluorene	1.5	0.30	2.000	0	77.0	15	96			
Phenanthrene	1.6	0.30	2.000	0	80.0	21	103			
Anthracene	1.8	0.30	2.000	0	91.0	21.1	106			
Fluoranthene	2.0	0.30	2.000	0	101	32.8	119			
Pyrene	1.8	1.0	2.000	0	90.0	34.1	110			
Benz(a)anthracene	2.3	0.30	2.000	0	113	32	132			
Chrysene	1.7	0.30	2.000	0	86.0	31.3	112			
Benzo(b)fluoranthene	2.0	0.30	2.000	0	100	34.1	119			
Indeno(1,2,3-cd)pyrene	2.2	0.30	2.000	0	110	24.7	152			
Surr: Nitrobenzene-d5	66		100.0		65.8	15	108			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209F93**

17-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **lcs-70506-lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **70506**	RunNo: **91491**
Prep Date: **9/30/2022**	Analysis Date: **10/3/2022**	SeqNo: **3277034** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	77		200.0		38.5	15	112			
Surr: 2-Fluorobiphenyl	56		100.0		55.7	15	107			
Surr: 4-Terphenyl-d14	64		100.0		63.9	15	166			

Sample ID: **lcsd-70506-lf**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02**	Batch ID: **70506**	RunNo: **91491**
Prep Date: **9/30/2022**	Analysis Date: **10/3/2022**	SeqNo: **3277035** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.62	0.30	2.000	0	31.0	15	60.5	30.1	29.7	R
Naphthalene	0.80	0.30	2.000	0	40.0	15	78.3	41.6	31.7	R
1-Methylnaphthalene	0.80	0.30	2.000	0	40.0	15	79.6	43.1	31.4	R
2-Methylnaphthalene	0.78	0.30	2.000	0	39.0	15	78.6	44.0	30.5	R
Acenaphthene	0.98	0.30	2.000	0	49.0	15	92	38.0	30.5	R
Fluorene	1.2	0.30	2.000	0	61.0	15	96	23.2	25.1	
Phenanthrene	1.2	0.30	2.000	0	58.0	21	103	31.9	26.4	R
Anthracene	1.3	0.30	2.000	0	66.0	21.1	106	31.8	14.4	R
Fluoranthene	1.5	0.30	2.000	0	75.0	32.8	119	29.5	14.8	R
Pyrene	1.4	1.0	2.000	0	68.0	34.1	110	27.8	19.2	R
Benz(a)anthracene	1.7	0.30	2.000	0	85.0	32	132	28.3	29.3	
Chrysene	1.3	0.30	2.000	0	66.0	31.3	112	26.3	19	R
Benzo(b)fluoranthene	1.5	0.30	2.000	0	76.0	34.1	119	27.3	31.6	
Indeno(1,2,3-cd)pyrene	1.6	0.30	2.000	0	81.0	24.7	152	30.4	21.3	R
Surr: Nitrobenzene-d5	51		100.0		51.0	15	108	0	0	
Surr: 2,4,6-Tribromophenol	66		200.0		32.8	15	112	0	0	
Surr: 2-Fluorobiphenyl	43		100.0		42.6	15	107	0	0	
Surr: 4-Terphenyl-d14	46		100.0		46.4	15	166	0	0	

Sample ID: **mb-70536**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **70536**	RunNo: **91528**
Prep Date: **10/3/2022**	Analysis Date: **10/4/2022**	SeqNo: **3278417** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.30								
1-Methylnaphthalene	ND	0.30								
2-Methylnaphthalene	ND	0.30								
Acenaphthene	ND	0.30								
Fluorene	ND	0.30								
Phenanthrene	ND	0.30								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209F93**

17-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **mb-70536**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **70536**	RunNo: **91528**
Prep Date: **10/3/2022**	Analysis Date: **10/4/2022**	SeqNo: **3278417** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Anthracene	ND	0.30								
Fluoranthene	ND	0.30								
Pyrene	ND	1.0								
Benz(a)anthracene	ND	0.30								
Chrysene	ND	0.30								
Benzo(b)fluoranthene	ND	0.30								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	82		100.0		82.1	15	108			
Surr: 2,4,6-Tribromophenol	86		200.0		42.8	15	112			
Surr: 2-Fluorobiphenyl	68		100.0		68.1	15	107			
Surr: 4-Terphenyl-d14	78		100.0		77.5	15	166			

Sample ID: **LCS-70536 LF**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **70536**	RunNo: **91528**
Prep Date: **10/3/2022**	Analysis Date: **10/4/2022**	SeqNo: **3278418** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.50	0.30	2.000	0	25.0	15	60.5			
Naphthalene	0.92	0.30	2.000	0	46.0	15	78.3			
1-Methylnaphthalene	0.96	0.30	2.000	0	48.0	15	79.6			
2-Methylnaphthalene	1.0	0.30	2.000	0	50.0	15	78.6			
Acenaphthene	0.94	0.30	2.000	0	47.0	15	92			
Fluorene	1.2	0.30	2.000	0	58.0	15	96			
Phenanthrene	1.4	0.30	2.000	0	69.0	21	103			
Anthracene	1.8	0.30	2.000	0	89.0	21.1	106			
Fluoranthene	2.1	0.30	2.000	0	105	32.8	119			
Pyrene	1.9	1.0	2.000	0	95.0	34.1	110			
Benz(a)anthracene	2.1	0.30	2.000	0	107	32	132			
Chrysene	1.3	0.30	2.000	0	66.0	31.3	112			
Benzo(b)fluoranthene	1.7	0.30	2.000	0	84.0	34.1	119			
Indeno(1,2,3-cd)pyrene	2.2	0.30	2.000	0	110	24.7	152			
Surr: Nitrobenzene-d5	49		100.0		48.7	15	108			
Surr: 2,4,6-Tribromophenol	79		200.0		39.3	15	112			
Surr: 2-Fluorobiphenyl	44		100.0		43.6	15	107			
Surr: 4-Terphenyl-d14	55		100.0		54.5	15	166			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209F93**

17-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **LCSD-70536 LF**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**							
Client ID: **LCSS02**	Batch ID: **70536**	RunNo: **91528**							
Prep Date: **10/3/2022**	Analysis Date: **10/4/2022**	SeqNo: **3278419**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.88	0.30	2.000	0	44.0	15	60.5	55.1	29.7	R
Naphthalene	1.4	0.30	2.000	0	68.0	15	78.3	38.6	31.7	R
1-Methylnaphthalene	1.4	0.30	2.000	0	69.0	15	79.6	35.9	31.4	R
2-Methylnaphthalene	1.4	0.30	2.000	0	69.0	15	78.6	31.9	30.5	R
Acenaphthene	1.5	0.30	2.000	0	73.0	15	92	43.3	30.5	R
Fluorene	1.6	0.30	2.000	0	78.0	15	96	29.4	25.1	R
Phenanthrene	1.5	0.30	2.000	0	76.0	21	103	9.66	26.4	
Anthracene	1.7	0.30	2.000	0	86.0	21.1	106	3.43	14.4	
Fluoranthene	1.8	0.30	2.000	0	91.0	32.8	119	14.3	14.8	
Pyrene	1.7	1.0	2.000	0	83.0	34.1	110	13.5	19.2	
Benz(a)anthracene	2.2	0.30	2.000	0	111	32	132	3.67	29.3	
Chrysene	1.6	0.30	2.000	0	79.0	31.3	112	17.9	19	
Benzo(b)fluoranthene	2.0	0.30	2.000	0	100	34.1	119	17.4	31.6	
Indeno(1,2,3-cd)pyrene	2.5	0.30	2.000	0	127	24.7	152	14.3	21.3	
Surr: Nitrobenzene-d5	76		100.0		76.5	15	108	0	0	
Surr: 2,4,6-Tribromophenol	87		200.0		43.3	15	112	0	0	
Surr: 2-Fluorobiphenyl	63		100.0		62.9	15	107	0	0	
Surr: 4-Terphenyl-d14	65		100.0		64.7	15	166	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Marathon | Work Order Number: 2209F93 | RcptNo: 1

Received By: Juan Rojas 9/29/2022 7:30:00 AM

Completed By: Cheyenne Cason 9/29/2022 7:59:55 AM

Reviewed By: MRG 9.29.22

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	9 SCL 9/29/22
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	SCL 9/28/22
8. Was preservative added to bottles?	Yes ☑	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☑	No ☐	NA ☐
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: 14 7 (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted? yes
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by: SCL 9/29/22

SCL 9/29/22

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: ____ Date: ____

By Whom: ____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: ____

Client Instructions: ____

16. Additional remarks: added ~0.4mL HNO_3 to 002, 006E for dissolved metals analysis, checked for proper pH <2 SCL 9/29/22

17. Cooler Information SCL 9/29/22

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.3	Good	Yes			
2	0.3	Good	Yes			
3	0.2	Good	Yes			

Released to Imaging: 4/21/2023 9:40:26 AM
Received by OCD: 4/21/2023 9:21:57 AM

Chain-of-Custody Record

ent: Marathon Gallup Refinery

iling Address: 92 Giant Crossing Road

Jamestown, NM,87347

one #: 808-640-1823

ail or Fax#:

QC Package:

tandard ☐ Level 4 (Full Validation)

reditation: ☐ Az Compliance

NELAC ☐ Other

DD (Type)

Turn-Around Time:

X Standard Rush

Project Name:

2022 GW Sampling ~~1st~~ 3rd Quarter

Project #: **697-080-001**

Project Manager:

Lesli Alexander/Mackensie Swift

Sampler:

On Ice: ~~☐~~ Yes ☐ No

# of Coolers: 3

Cooler Temp(including CF): See Remarks

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

:e	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2209F93	See Analyte List	8260B: VOC	8270C: SVOC	8270C SIM: PAH, 1,4 Dioxane	8015: TPH GRO/DRO/MRO	E200.7: Metals	E200.7: Dissolved Metals	E245.1 Mercury	E504.1: EDB	E335.4: Cyanide Subbed		537.1: PFAS	SM 5201B: BOD	410.4: COD	SM9223B E Coli
9/28	9:30		EB-9-28-22	13		001	X	X	X	X	X	X	X	X	X	X					
9/28	9:35		BW-1C	13		002	X	X	X	X	X	X	X	X	X	X					
9/28	10:15		BW-2C	13		003	X	X	X	X	X	X	X	X	X	X					
9/28	10:35		BW-2B	13		004	X	X	X	X	X	X	X	X	X	X					
9/28	11:00		BW-3C	13		005	X	X	X	X	X	X	X	X	X	X					
9/28	11:30		BW-3B	13		006	X	X	X	X	X	X	X	X	X	X					
9/28	~~11:30~~		Dup-9-28-22	13		007	X	X	X	X	X	X	X	X	X	X					
9/28	11:30		FB-9-28-22	3		008	X	X	X												
			Trip Blank			009															

	Time:	Relinquished by:	Received by:	Via:	Date	Time
9/28	12:15	Hilario Fuge				
	Time:	Relinquished by:	Received by:	Via:	Date	Time
				courier	9/29/22	7:30

3.4-0.1=3.3
0.4-0.1=0.3
0.3-0.1=0.2

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 19, 2022

Lesli Alexander

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX: (505) 632-3911

RE: 2022 GW Sampling 3rd Quarter OrderNo.: 2209H02

Dear Lesli Alexander:

Hall Environmental Analysis Laboratory received 8 sample(s) on 9/30/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **2209H02**
Date: **10/19/2022**

CLIENT: Marathon
Project: 2022 GW Sampling 3rd Quarter

"S" flagged surrogates/spikes denote that the analyte recovery was outstide of the standard limits.

Analytical Report
Lab Order: **2209H02**
Date Reported: **10/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-29-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/29/2022 8:00:00 AM
Lab ID: 2209H02-001A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	10/5/2022 10:03:53 PM	GW915
Surr: BFB	92.9	0	70-130		%Rec	1	10/5/2022 10:03:53 PM	GW915
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	10/6/2022 5:48:00 PM	R91600
Toluene	ND	0.20	1.0		µg/L	1	10/6/2022 5:48:00 PM	R91600
Ethylbenzene	ND	0.21	1.0		µg/L	1	10/6/2022 5:48:00 PM	R91600
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	10/6/2022 5:48:00 PM	R91600
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	10/6/2022 5:48:00 PM	R91600
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 5:48:00 PM	R91600
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	10/6/2022 5:48:00 PM	R91600
Acetone	5.4	2.5	10	J	µg/L	1	10/6/2022 5:48:00 PM	R91600
Bromomethane	ND	0.85	3.0		µg/L	1	10/6/2022 5:48:00 PM	R91600
2-Butanone	ND	2.0	10		µg/L	1	10/6/2022 5:48:00 PM	R91600
Carbon disulfide	ND	0.59	10		µg/L	1	10/6/2022 5:48:00 PM	R91600
Chlorobenzene	ND	0.16	1.0		µg/L	1	10/6/2022 5:48:00 PM	R91600
Chloroform	ND	0.13	1.0		µg/L	1	10/6/2022 5:48:00 PM	R91600
Chloromethane	ND	0.41	3.0		µg/L	1	10/6/2022 5:48:00 PM	R91600
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	10/6/2022 5:48:00 PM	R91600
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	10/6/2022 5:48:00 PM	R91600
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	10/6/2022 5:48:00 PM	R91600
Isopropylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 5:48:00 PM	R91600
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	10/6/2022 5:48:00 PM	R91600
Methylene Chloride	ND	0.50	3.0		µg/L	1	10/6/2022 5:48:00 PM	R91600
n-Butylbenzene	ND	0.25	3.0		µg/L	1	10/6/2022 5:48:00 PM	R91600
n-Propylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 5:48:00 PM	R91600
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	10/6/2022 5:48:00 PM	R91600
Styrene	ND	0.14	1.0		µg/L	1	10/6/2022 5:48:00 PM	R91600
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	10/6/2022 5:48:00 PM	R91600
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	10/6/2022 5:48:00 PM	R91600
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	10/6/2022 5:48:00 PM	R91600
Vinyl chloride	ND	0.32	1.0		µg/L	1	10/6/2022 5:48:00 PM	R91600
Xylenes, Total	0.46	0.37	1.5	J	µg/L	1	10/6/2022 5:48:00 PM	R91600
Surr: 1,2-Dichloroethane-d4	100	0	70-130		%Rec	1	10/6/2022 5:48:00 PM	R91600
Surr: 4-Bromofluorobenzene	99.4	0	70-130		%Rec	1	10/6/2022 5:48:00 PM	R91600
Surr: Dibromofluoromethane	99.3	0	70-130		%Rec	1	10/6/2022 5:48:00 PM	R91600
Surr: Toluene-d8	95.7	0	70-130		%Rec	1	10/6/2022 5:48:00 PM	R91600

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H02**
Date Reported: **10/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-29-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/29/2022 8:00:00 AM
Lab ID: 2209H02-001B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	10/4/2022 8:21:40 PM	70550

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H02**
Date Reported: **10/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-29-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/29/2022 8:00:00 AM
Lab ID: 2209H02-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **mb**	
Diesel Range Organics (DRO)	0.045	0.016	0.064	J	mg/L	1	10/3/2022 5:16:58 PM	70521
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	10/3/2022 5:16:58 PM	70521
Surr: DNOP	90.9	0	42.2-138		%Rec	1	10/3/2022 5:16:58 PM	70521
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	10/12/2022 8:09:57 PM	70536
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	10/12/2022 8:09:57 PM	70536
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	10/12/2022 8:09:57 PM	70536
Di-n-octyl phthalate	ND	12	20		µg/L	1	10/12/2022 8:09:57 PM	70536
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	10/12/2022 8:09:57 PM	70536
Diethyl phthalate	ND	6.0	10		µg/L	1	10/12/2022 8:09:57 PM	70536
Dimethyl phthalate	ND	6.0	10		µg/L	1	10/12/2022 8:09:57 PM	70536
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	10/12/2022 8:09:57 PM	70536
2,4-Dinitrophenol	ND	16	20		µg/L	1	10/12/2022 8:09:57 PM	70536
2-Methylphenol	ND	5.0	10		µg/L	1	10/12/2022 8:09:57 PM	70536
3+4-Methylphenol	ND	5.1	10		µg/L	1	10/12/2022 8:09:57 PM	70536
Phenol	ND	18	20		µg/L	1	10/12/2022 8:09:57 PM	70536
Pyridine	ND	14	40		µg/L	1	10/12/2022 8:09:57 PM	70536
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	10/12/2022 8:09:57 PM	70536
Surr: 2-Fluorophenol	51.7	0	15-84.5		%Rec	1	10/12/2022 8:09:57 PM	70536
Surr: Phenol-d5	38.5	0	15-67		%Rec	1	10/12/2022 8:09:57 PM	70536
Surr: 2,4,6-Tribromophenol	71.5	0	15-108		%Rec	1	10/12/2022 8:09:57 PM	70536
Surr: Nitrobenzene-d5	58.7	0	16.8-112		%Rec	1	10/12/2022 8:09:57 PM	70536
Surr: 2-Fluorobiphenyl	58.1	0	15-101		%Rec	1	10/12/2022 8:09:57 PM	70536
Surr: 4-Terphenyl-d14	78.8	0	34.4-134		%Rec	1	10/12/2022 8:09:57 PM	70536
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	10/4/2022 6:13:00 PM	70536
Naphthalene	ND	0.20	0.30		µg/L	1	10/4/2022 6:13:00 PM	70536
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	10/4/2022 6:13:00 PM	70536
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	10/4/2022 6:13:00 PM	70536
Acenaphthene	ND	0.14	0.30		µg/L	1	10/4/2022 6:13:00 PM	70536
Fluorene	ND	0.095	0.30		µg/L	1	10/4/2022 6:13:00 PM	70536
Phenanthrene	ND	0.16	0.30		µg/L	1	10/4/2022 6:13:00 PM	70536
Anthracene	ND	0.14	0.30		µg/L	1	10/4/2022 6:13:00 PM	70536
Fluoranthene	ND	0.14	0.30		µg/L	1	10/4/2022 6:13:00 PM	70536
Pyrene	ND	0.32	1.0		µg/L	1	10/4/2022 6:13:00 PM	70536
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	10/4/2022 6:13:00 PM	70536
Chrysene	ND	0.25	0.30		µg/L	1	10/4/2022 6:13:00 PM	70536
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	10/4/2022 6:13:00 PM	70536
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	10/4/2022 6:13:00 PM	70536

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H02**
Date Reported: **10/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-29-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/29/2022 8:00:00 AM
Lab ID: 2209H02-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	70.7	0	15-108		%Rec	1	10/4/2022 6:13:00 PM	70536
Surr: 2-Fluorobiphenyl	57.5	0	15-107		%Rec	1	10/4/2022 6:13:00 PM	70536
Surr: 4-Terphenyl-d14	73.6	0	15-166		%Rec	1	10/4/2022 6:13:00 PM	70536

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H02**
Date Reported: **10/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-29-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/29/2022 8:00:00 AM
Lab ID: 2209H02-001D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	ND	0.0016	0.0030		mg/L	1	10/4/2022 11:24:30 AM	70537
Beryllium	ND	0.00088	0.0020		mg/L	1	10/4/2022 11:24:30 AM	70537
Cadmium	ND	0.0018	0.0020		mg/L	1	10/4/2022 11:24:30 AM	70537
Chromium	0.0025	0.0020	0.0060	J	mg/L	1	10/4/2022 11:24:30 AM	70537
Cobalt	ND	0.0035	0.0060		mg/L	1	10/4/2022 11:24:30 AM	70537
Nickel	ND	0.0053	0.010		mg/L	1	10/4/2022 11:24:30 AM	70537
Silver	ND	0.0018	0.0050		mg/L	1	10/4/2022 11:24:30 AM	70537
Vanadium	ND	0.0035	0.050		mg/L	1	10/4/2022 11:24:30 AM	70537
Zinc	ND	0.0039	0.010		mg/L	1	10/4/2022 11:24:30 AM	70537
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	10/6/2022 3:13:32 PM	70537
Arsenic	ND	0.00022	0.0010		mg/L	1	10/5/2022 4:06:14 PM	70537
Lead	ND	0.00019	0.00050		mg/L	1	10/6/2022 3:13:32 PM	70537
Selenium	ND	0.00089	0.0010		mg/L	1	10/6/2022 3:13:32 PM	70537
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	10/6/2022 12:02:05 PM	70627

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H02**
Date Reported: **10/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-29-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/29/2022 8:00:00 AM
Lab ID: 2209H02-001E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	ND	0.0011	0.0020		mg/L	1	10/4/2022 5:23:17 PM	C91551
Beryllium	ND	0.00088	0.0020		mg/L	1	10/4/2022 5:23:17 PM	C91551
Cadmium	ND	0.00098	0.0020		mg/L	1	10/4/2022 5:23:17 PM	C91551
Chromium	ND	0.0020	0.0060		mg/L	1	10/4/2022 5:23:17 PM	C91551
Cobalt	ND	0.0024	0.0060		mg/L	1	10/4/2022 5:23:17 PM	C91551
Nickel	ND	0.0033	0.010		mg/L	1	10/4/2022 5:23:17 PM	C91551
Silver	ND	0.0013	0.0050		mg/L	1	10/4/2022 5:23:17 PM	C91551
Vanadium	ND	0.0017	0.050		mg/L	1	10/4/2022 5:23:17 PM	C91551
Zinc	0.0072	0.0032	0.010	J	mg/L	1	10/4/2022 5:23:17 PM	C91551
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	10/4/2022 12:11:30 PM	A91522
Arsenic	ND	0.00012	0.0010		mg/L	1	10/4/2022 12:11:30 PM	A91522
Lead	ND	0.000057	0.00050		mg/L	1	10/4/2022 12:11:30 PM	A91522
Selenium	ND	0.00034	0.0010		mg/L	1	10/4/2022 12:11:30 PM	A91522
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	10/6/2022 12:08:30 PM	70627

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H02**
Date Reported: **10/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MW-1
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/29/2022 8:30:00 AM
Lab ID: 2209H02-002A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	10/5/2022 10:27:19 PM	GW915
Surr: BFB	91.8	0	70-130		%Rec	1	10/5/2022 10:27:19 PM	GW915
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	10/6/2022 6:11:00 PM	R91600
Toluene	ND	0.20	1.0		µg/L	1	10/6/2022 6:11:00 PM	R91600
Ethylbenzene	ND	0.21	1.0		µg/L	1	10/6/2022 6:11:00 PM	R91600
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	10/6/2022 6:11:00 PM	R91600
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	10/6/2022 6:11:00 PM	R91600
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 6:11:00 PM	R91600
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	10/6/2022 6:11:00 PM	R91600
Acetone	3.3	2.5	10	J	µg/L	1	10/6/2022 6:11:00 PM	R91600
Bromomethane	ND	0.85	3.0		µg/L	1	10/6/2022 6:11:00 PM	R91600
2-Butanone	ND	2.0	10		µg/L	1	10/6/2022 6:11:00 PM	R91600
Carbon disulfide	ND	0.59	10		µg/L	1	10/6/2022 6:11:00 PM	R91600
Chlorobenzene	ND	0.16	1.0		µg/L	1	10/6/2022 6:11:00 PM	R91600
Chloroform	ND	0.13	1.0		µg/L	1	10/6/2022 6:11:00 PM	R91600
Chloromethane	ND	0.41	3.0		µg/L	1	10/6/2022 6:11:00 PM	R91600
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	10/6/2022 6:11:00 PM	R91600
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	10/6/2022 6:11:00 PM	R91600
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	10/6/2022 6:11:00 PM	R91600
Isopropylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 6:11:00 PM	R91600
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	10/6/2022 6:11:00 PM	R91600
Methylene Chloride	ND	0.50	3.0		µg/L	1	10/6/2022 6:11:00 PM	R91600
n-Butylbenzene	ND	0.25	3.0		µg/L	1	10/6/2022 6:11:00 PM	R91600
n-Propylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 6:11:00 PM	R91600
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	10/6/2022 6:11:00 PM	R91600
Styrene	ND	0.14	1.0		µg/L	1	10/6/2022 6:11:00 PM	R91600
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	10/6/2022 6:11:00 PM	R91600
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	10/6/2022 6:11:00 PM	R91600
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	10/6/2022 6:11:00 PM	R91600
Vinyl chloride	ND	0.32	1.0		µg/L	1	10/6/2022 6:11:00 PM	R91600
Xylenes, Total	ND	0.37	1.5		µg/L	1	10/6/2022 6:11:00 PM	R91600
Surr: 1,2-Dichloroethane-d4	97.5	0	70-130		%Rec	1	10/6/2022 6:11:00 PM	R91600
Surr: 4-Bromofluorobenzene	98.2	0	70-130		%Rec	1	10/6/2022 6:11:00 PM	R91600
Surr: Dibromofluoromethane	97.5	0	70-130		%Rec	1	10/6/2022 6:11:00 PM	R91600
Surr: Toluene-d8	94.2	0	70-130		%Rec	1	10/6/2022 6:11:00 PM	R91600

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H02**
Date Reported: **10/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MW-1
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/29/2022 8:30:00 AM
Lab ID: 2209H02-002B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0026	0.0092		µg/L	1	10/4/2022 8:51:47 PM	70550

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H02**
Date Reported: **10/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MW-1
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/29/2022 8:30:00 AM
Lab ID: 2209H02-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **mb**	
Diesel Range Organics (DRO)	0.017	0.016	0.064	J	mg/L	1	10/3/2022 5:40:38 PM	70521
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	10/3/2022 5:40:38 PM	70521
Surr: DNOP	88.0	0	42.2-138		%Rec	1	10/3/2022 5:40:38 PM	70521
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	10/12/2022 8:52:06 PM	70536
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	10/12/2022 8:52:06 PM	70536
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	10/12/2022 8:52:06 PM	70536
Di-n-octyl phthalate	ND	12	20		µg/L	1	10/12/2022 8:52:06 PM	70536
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	10/12/2022 8:52:06 PM	70536
Diethyl phthalate	ND	6.0	10		µg/L	1	10/12/2022 8:52:06 PM	70536
Dimethyl phthalate	ND	6.0	10		µg/L	1	10/12/2022 8:52:06 PM	70536
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	10/12/2022 8:52:06 PM	70536
2,4-Dinitrophenol	ND	16	20		µg/L	1	10/12/2022 8:52:06 PM	70536
2-Methylphenol	ND	5.0	10		µg/L	1	10/12/2022 8:52:06 PM	70536
3+4-Methylphenol	ND	5.1	10		µg/L	1	10/12/2022 8:52:06 PM	70536
Phenol	ND	18	20		µg/L	1	10/12/2022 8:52:06 PM	70536
Pyridine	ND	14	40		µg/L	1	10/12/2022 8:52:06 PM	70536
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	10/12/2022 8:52:06 PM	70536
Surr: 2-Fluorophenol	52.3	0	15-84.5		%Rec	1	10/12/2022 8:52:06 PM	70536
Surr: Phenol-d5	38.6	0	15-67		%Rec	1	10/12/2022 8:52:06 PM	70536
Surr: 2,4,6-Tribromophenol	72.6	0	15-108		%Rec	1	10/12/2022 8:52:06 PM	70536
Surr: Nitrobenzene-d5	61.8	0	16.8-112		%Rec	1	10/12/2022 8:52:06 PM	70536
Surr: 2-Fluorobiphenyl	57.1	0	15-101		%Rec	1	10/12/2022 8:52:06 PM	70536
Surr: 4-Terphenyl-d14	83.0	0	34.4-134		%Rec	1	10/12/2022 8:52:06 PM	70536
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	10/4/2022 6:59:00 PM	70536
Naphthalene	ND	0.20	0.30		µg/L	1	10/4/2022 6:59:00 PM	70536
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	10/4/2022 6:59:00 PM	70536
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	10/4/2022 6:59:00 PM	70536
Acenaphthene	ND	0.14	0.30		µg/L	1	10/4/2022 6:59:00 PM	70536
Fluorene	ND	0.095	0.30		µg/L	1	10/4/2022 6:59:00 PM	70536
Phenanthrene	ND	0.16	0.30		µg/L	1	10/4/2022 6:59:00 PM	70536
Anthracene	ND	0.14	0.30		µg/L	1	10/4/2022 6:59:00 PM	70536
Fluoranthene	ND	0.14	0.30		µg/L	1	10/4/2022 6:59:00 PM	70536
Pyrene	ND	0.32	1.0		µg/L	1	10/4/2022 6:59:00 PM	70536
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	10/4/2022 6:59:00 PM	70536
Chrysene	ND	0.25	0.30		µg/L	1	10/4/2022 6:59:00 PM	70536
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	10/4/2022 6:59:00 PM	70536
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	10/4/2022 6:59:00 PM	70536

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H02**
Date Reported: **10/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MW-1
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/29/2022 8:30:00 AM
Lab ID: 2209H02-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	65.9	0	15-108		%Rec	1	10/4/2022 6:59:00 PM	70536
Surr: 2-Fluorobiphenyl	53.3	0	15-107		%Rec	1	10/4/2022 6:59:00 PM	70536
Surr: 4-Terphenyl-d14	68.6	0	15-166		%Rec	1	10/4/2022 6:59:00 PM	70536

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H02**
Date Reported: **10/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MW-1
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/29/2022 8:30:00 AM
Lab ID: 2209H02-002D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.013	0.0016	0.0030		mg/L	1	10/4/2022 11:29:06 AM	70537
Beryllium	ND	0.00088	0.0020		mg/L	1	10/4/2022 11:29:06 AM	70537
Cadmium	ND	0.0018	0.0020		mg/L	1	10/4/2022 11:29:06 AM	70537
Chromium	0.0029	0.0020	0.0060	J	mg/L	1	10/4/2022 11:29:06 AM	70537
Cobalt	ND	0.0035	0.0060		mg/L	1	10/4/2022 11:29:06 AM	70537
Nickel	ND	0.0053	0.010		mg/L	1	10/4/2022 11:29:06 AM	70537
Silver	ND	0.0018	0.0050		mg/L	1	10/4/2022 11:29:06 AM	70537
Vanadium	ND	0.0035	0.050		mg/L	1	10/4/2022 11:29:06 AM	70537
Zinc	0.0047	0.0039	0.010	J	mg/L	1	10/4/2022 11:29:06 AM	70537
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	10/6/2022 3:15:59 PM	70537
Arsenic	0.0013	0.00022	0.0010		mg/L	1	10/5/2022 4:08:41 PM	70537
Lead	0.00073	0.00019	0.00050		mg/L	1	10/6/2022 3:15:59 PM	70537
Selenium	ND	0.00089	0.0010		mg/L	1	10/6/2022 3:15:59 PM	70537
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	10/6/2022 12:10:39 PM	70627

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H02**
Date Reported: **10/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MW-1
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/29/2022 8:30:00 AM
Lab ID: 2209H02-002E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.013	0.0011	0.0020		mg/L	1	10/4/2022 5:34:13 PM	C91551
Beryllium	ND	0.00088	0.0020		mg/L	1	10/4/2022 5:34:13 PM	C91551
Cadmium	ND	0.00098	0.0020		mg/L	1	10/4/2022 5:34:13 PM	C91551
Chromium	ND	0.0020	0.0060		mg/L	1	10/4/2022 5:34:13 PM	C91551
Cobalt	ND	0.0024	0.0060		mg/L	1	10/4/2022 5:34:13 PM	C91551
Nickel	0.022	0.0033	0.010		mg/L	1	10/4/2022 5:34:13 PM	C91551
Silver	ND	0.0013	0.0050		mg/L	1	10/4/2022 5:34:13 PM	C91551
Vanadium	ND	0.0017	0.050		mg/L	1	10/4/2022 5:34:13 PM	C91551
Zinc	0.096	0.0032	0.010		mg/L	1	10/4/2022 5:34:13 PM	C91551
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	10/4/2022 12:14:11 PM	A91522
Arsenic	0.0014	0.00012	0.0010		mg/L	1	10/4/2022 12:14:11 PM	A91522
Lead	0.00013	0.000057	0.00050	J	mg/L	1	10/4/2022 12:14:11 PM	A91522
Selenium	ND	0.00034	0.0010		mg/L	1	10/4/2022 12:14:11 PM	A91522
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	10/6/2022 12:12:48 PM	70627

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H02**
Date Reported: **10/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SMW-4
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/29/2022 9:00:00 AM
Lab ID: 2209H02-003A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	10/5/2022 11:37:45 PM	GW915
Surr: BFB	95.4	0	70-130		%Rec	1	10/5/2022 11:37:45 PM	GW915
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	10/6/2022 7:20:00 PM	R91600
Toluene	ND	0.20	1.0		µg/L	1	10/6/2022 7:20:00 PM	R91600
Ethylbenzene	ND	0.21	1.0		µg/L	1	10/6/2022 7:20:00 PM	R91600
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	10/6/2022 7:20:00 PM	R91600
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	10/6/2022 7:20:00 PM	R91600
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 7:20:00 PM	R91600
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	10/6/2022 7:20:00 PM	R91600
Acetone	3.7	2.5	10	J	µg/L	1	10/6/2022 7:20:00 PM	R91600
Bromomethane	ND	0.85	3.0		µg/L	1	10/6/2022 7:20:00 PM	R91600
2-Butanone	ND	2.0	10		µg/L	1	10/6/2022 7:20:00 PM	R91600
Carbon disulfide	ND	0.59	10		µg/L	1	10/6/2022 7:20:00 PM	R91600
Chlorobenzene	ND	0.16	1.0		µg/L	1	10/6/2022 7:20:00 PM	R91600
Chloroform	ND	0.13	1.0		µg/L	1	10/6/2022 7:20:00 PM	R91600
Chloromethane	ND	0.41	3.0		µg/L	1	10/6/2022 7:20:00 PM	R91600
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	10/6/2022 7:20:00 PM	R91600
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	10/6/2022 7:20:00 PM	R91600
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	10/6/2022 7:20:00 PM	R91600
Isopropylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 7:20:00 PM	R91600
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	10/6/2022 7:20:00 PM	R91600
Methylene Chloride	ND	0.50	3.0		µg/L	1	10/6/2022 7:20:00 PM	R91600
n-Butylbenzene	ND	0.25	3.0		µg/L	1	10/6/2022 7:20:00 PM	R91600
n-Propylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 7:20:00 PM	R91600
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	10/6/2022 7:20:00 PM	R91600
Styrene	ND	0.14	1.0		µg/L	1	10/6/2022 7:20:00 PM	R91600
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	10/6/2022 7:20:00 PM	R91600
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	10/6/2022 7:20:00 PM	R91600
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	10/6/2022 7:20:00 PM	R91600
Vinyl chloride	ND	0.32	1.0		µg/L	1	10/6/2022 7:20:00 PM	R91600
Xylenes, Total	ND	0.37	1.5		µg/L	1	10/6/2022 7:20:00 PM	R91600
Surr: 1,2-Dichloroethane-d4	98.7	0	70-130		%Rec	1	10/6/2022 7:20:00 PM	R91600
Surr: 4-Bromofluorobenzene	100	0	70-130		%Rec	1	10/6/2022 7:20:00 PM	R91600
Surr: Dibromofluoromethane	97.2	0	70-130		%Rec	1	10/6/2022 7:20:00 PM	R91600
Surr: Toluene-d8	95.2	0	70-130		%Rec	1	10/6/2022 7:20:00 PM	R91600

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H02**
Date Reported: **10/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SMW-4
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/29/2022 9:00:00 AM
Lab ID: 2209H02-003B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	10/4/2022 9:22:00 PM	70550

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H02**
Date Reported: **10/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SMW-4
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/29/2022 9:00:00 AM
Lab ID: 2209H02-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **mb**	
Diesel Range Organics (DRO)	0.022	0.016	0.064	J	mg/L	1	10/3/2022 6:04:16 PM	70521
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	10/3/2022 6:04:16 PM	70521
Surr: DNOP	87.6	0	42.2-138		%Rec	1	10/3/2022 6:04:16 PM	70521
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	10/12/2022 9:34:02 PM	70536
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	10/12/2022 9:34:02 PM	70536
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	10/12/2022 9:34:02 PM	70536
Di-n-octyl phthalate	ND	12	20		µg/L	1	10/12/2022 9:34:02 PM	70536
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	10/12/2022 9:34:02 PM	70536
Diethyl phthalate	ND	6.0	10		µg/L	1	10/12/2022 9:34:02 PM	70536
Dimethyl phthalate	ND	6.0	10		µg/L	1	10/12/2022 9:34:02 PM	70536
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	10/12/2022 9:34:02 PM	70536
2,4-Dinitrophenol	ND	16	20		µg/L	1	10/12/2022 9:34:02 PM	70536
2-Methylphenol	ND	5.0	10		µg/L	1	10/12/2022 9:34:02 PM	70536
3+4-Methylphenol	ND	5.1	10		µg/L	1	10/12/2022 9:34:02 PM	70536
Phenol	ND	18	20		µg/L	1	10/12/2022 9:34:02 PM	70536
Pyridine	ND	14	40		µg/L	1	10/12/2022 9:34:02 PM	70536
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	10/12/2022 9:34:02 PM	70536
Surr: 2-Fluorophenol	55.4	0	15-84.5		%Rec	1	10/12/2022 9:34:02 PM	70536
Surr: Phenol-d5	42.0	0	15-67		%Rec	1	10/12/2022 9:34:02 PM	70536
Surr: 2,4,6-Tribromophenol	73.8	0	15-108		%Rec	1	10/12/2022 9:34:02 PM	70536
Surr: Nitrobenzene-d5	62.0	0	16.8-112		%Rec	1	10/12/2022 9:34:02 PM	70536
Surr: 2-Fluorobiphenyl	60.4	0	15-101		%Rec	1	10/12/2022 9:34:02 PM	70536
Surr: 4-Terphenyl-d14	81.7	0	34.4-134		%Rec	1	10/12/2022 9:34:02 PM	70536
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	10/4/2022 7:45:00 PM	70536
Naphthalene	ND	0.20	0.30		µg/L	1	10/4/2022 7:45:00 PM	70536
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	10/4/2022 7:45:00 PM	70536
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	10/4/2022 7:45:00 PM	70536
Acenaphthene	ND	0.14	0.30		µg/L	1	10/4/2022 7:45:00 PM	70536
Fluorene	ND	0.095	0.30		µg/L	1	10/4/2022 7:45:00 PM	70536
Phenanthrene	ND	0.16	0.30		µg/L	1	10/4/2022 7:45:00 PM	70536
Anthracene	ND	0.14	0.30		µg/L	1	10/4/2022 7:45:00 PM	70536
Fluoranthene	ND	0.14	0.30		µg/L	1	10/4/2022 7:45:00 PM	70536
Pyrene	ND	0.32	1.0		µg/L	1	10/4/2022 7:45:00 PM	70536
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	10/4/2022 7:45:00 PM	70536
Chrysene	ND	0.25	0.30		µg/L	1	10/4/2022 7:45:00 PM	70536
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	10/4/2022 7:45:00 PM	70536
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	10/4/2022 7:45:00 PM	70536

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H02**
Date Reported: **10/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SMW-4
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/29/2022 9:00:00 AM
Lab ID: 2209H02-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	69.9	0	15-108		%Rec	1	10/4/2022 7:45:00 PM	70536
Surr: 2-Fluorobiphenyl	60.0	0	15-107		%Rec	1	10/4/2022 7:45:00 PM	70536
Surr: 4-Terphenyl-d14	74.2	0	15-166		%Rec	1	10/4/2022 7:45:00 PM	70536

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H02**
Date Reported: **10/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SMW-4
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/29/2022 9:00:00 AM
Lab ID: 2209H02-003D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.023	0.0016	0.0030		mg/L	1	10/4/2022 11:39:39 AM	70537
Beryllium	ND	0.00088	0.0020		mg/L	1	10/4/2022 11:39:39 AM	70537
Cadmium	ND	0.0018	0.0020		mg/L	1	10/4/2022 11:39:39 AM	70537
Chromium	0.0040	0.0020	0.0060	J	mg/L	1	10/4/2022 11:39:39 AM	70537
Cobalt	0.072	0.0035	0.0060		mg/L	1	10/10/2022 4:10:59 PM	70537
Nickel	ND	0.0053	0.010		mg/L	1	10/4/2022 11:39:39 AM	70537
Silver	ND	0.0018	0.0050		mg/L	1	10/4/2022 11:39:39 AM	70537
Vanadium	0.060	0.0035	0.050		mg/L	1	10/4/2022 11:39:39 AM	70537
Zinc	ND	0.0039	0.010		mg/L	1	10/10/2022 4:10:59 PM	70537
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	10/6/2022 3:18:25 PM	70537
Arsenic	0.0030	0.00022	0.0010		mg/L	1	10/5/2022 4:11:07 PM	70537
Lead	0.00036	0.00019	0.00050	J	mg/L	1	10/6/2022 3:18:25 PM	70537
Selenium	ND	0.00089	0.0010		mg/L	1	10/6/2022 3:18:25 PM	70537
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00045	0.0010		mg/L	5	10/6/2022 1:23:39 PM	70627

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H02**
Date Reported: **10/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SMW-4
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/29/2022 9:00:00 AM
Lab ID: 2209H02-003E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.016	0.0011	0.0020		mg/L	1	10/4/2022 5:38:15 PM	C91551
Beryllium	ND	0.00088	0.0020		mg/L	1	10/4/2022 5:38:15 PM	C91551
Cadmium	ND	0.00098	0.0020		mg/L	1	10/4/2022 5:38:15 PM	C91551
Chromium	ND	0.0020	0.0060		mg/L	1	10/4/2022 5:38:15 PM	C91551
Cobalt	0.028	0.0024	0.0060		mg/L	1	10/4/2022 5:38:15 PM	C91551
Nickel	ND	0.0033	0.010		mg/L	1	10/4/2022 5:38:15 PM	C91551
Silver	ND	0.0013	0.0050		mg/L	1	10/4/2022 5:38:15 PM	C91551
Vanadium	0.046	0.0017	0.050	J	mg/L	1	10/4/2022 5:38:15 PM	C91551
Zinc	0.055	0.0032	0.010		mg/L	1	10/4/2022 5:38:15 PM	C91551
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	10/4/2022 12:16:53 PM	A91522
Arsenic	0.0029	0.00012	0.0010		mg/L	1	10/4/2022 12:16:53 PM	A91522
Lead	ND	0.000057	0.00050		mg/L	1	10/4/2022 12:16:53 PM	A91522
Selenium	ND	0.00034	0.0010		mg/L	1	10/4/2022 12:16:53 PM	A91522
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	10/6/2022 12:21:22 PM	70627

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H02**
Date Reported: **10/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MW-2
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/29/2022 9:20:00 AM
Lab ID: 2209H02-004A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	10/6/2022 12:01:10 AM	GW915
Surr: BFB	93.9	0	70-130		%Rec	1	10/6/2022 12:01:10 AM	GW915
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	10/6/2022 7:42:00 PM	R91600
Toluene	ND	0.20	1.0		µg/L	1	10/6/2022 7:42:00 PM	R91600
Ethylbenzene	ND	0.21	1.0		µg/L	1	10/6/2022 7:42:00 PM	R91600
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	10/6/2022 7:42:00 PM	R91600
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	10/6/2022 7:42:00 PM	R91600
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 7:42:00 PM	R91600
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	10/6/2022 7:42:00 PM	R91600
Acetone	ND	2.5	10		µg/L	1	10/6/2022 7:42:00 PM	R91600
Bromomethane	ND	0.85	3.0		µg/L	1	10/6/2022 7:42:00 PM	R91600
2-Butanone	ND	2.0	10		µg/L	1	10/6/2022 7:42:00 PM	R91600
Carbon disulfide	ND	0.59	10		µg/L	1	10/6/2022 7:42:00 PM	R91600
Chlorobenzene	ND	0.16	1.0		µg/L	1	10/6/2022 7:42:00 PM	R91600
Chloroform	ND	0.13	1.0		µg/L	1	10/6/2022 7:42:00 PM	R91600
Chloromethane	ND	0.41	3.0		µg/L	1	10/6/2022 7:42:00 PM	R91600
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	10/6/2022 7:42:00 PM	R91600
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	10/6/2022 7:42:00 PM	R91600
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	10/6/2022 7:42:00 PM	R91600
Isopropylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 7:42:00 PM	R91600
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	10/6/2022 7:42:00 PM	R91600
Methylene Chloride	ND	0.50	3.0		µg/L	1	10/6/2022 7:42:00 PM	R91600
n-Butylbenzene	ND	0.25	3.0		µg/L	1	10/6/2022 7:42:00 PM	R91600
n-Propylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 7:42:00 PM	R91600
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	10/6/2022 7:42:00 PM	R91600
Styrene	ND	0.14	1.0		µg/L	1	10/6/2022 7:42:00 PM	R91600
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	10/6/2022 7:42:00 PM	R91600
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	10/6/2022 7:42:00 PM	R91600
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	10/6/2022 7:42:00 PM	R91600
Vinyl chloride	ND	0.32	1.0		µg/L	1	10/6/2022 7:42:00 PM	R91600
Xylenes, Total	ND	0.37	1.5		µg/L	1	10/6/2022 7:42:00 PM	R91600
Surr: 1,2-Dichloroethane-d4	99.6	0	70-130		%Rec	1	10/6/2022 7:42:00 PM	R91600
Surr: 4-Bromofluorobenzene	98.1	0	70-130		%Rec	1	10/6/2022 7:42:00 PM	R91600
Surr: Dibromofluoromethane	99.3	0	70-130		%Rec	1	10/6/2022 7:42:00 PM	R91600
Surr: Toluene-d8	93.6	0	70-130		%Rec	1	10/6/2022 7:42:00 PM	R91600

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H02**
Date Reported: **10/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MW-2
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/29/2022 9:20:00 AM
Lab ID: 2209H02-004B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	10/4/2022 9:52:05 PM	70550

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H02**
Date Reported: **10/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MW-2
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/29/2022 9:20:00 AM
Lab ID: 2209H02-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **mb**	
Diesel Range Organics (DRO)	0.038	0.016	0.064	J	mg/L	1	10/3/2022 6:27:54 PM	70521
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	10/3/2022 6:27:54 PM	70521
Surr: DNOP	90.1	0	42.2-138		%Rec	1	10/3/2022 6:27:54 PM	70521
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	10/12/2022 10:15:53 PM	70536
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	10/12/2022 10:15:53 PM	70536
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	10/12/2022 10:15:53 PM	70536
Di-n-octyl phthalate	ND	12	20		µg/L	1	10/12/2022 10:15:53 PM	70536
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	10/12/2022 10:15:53 PM	70536
Diethyl phthalate	ND	6.0	10		µg/L	1	10/12/2022 10:15:53 PM	70536
Dimethyl phthalate	ND	6.0	10		µg/L	1	10/12/2022 10:15:53 PM	70536
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	10/12/2022 10:15:53 PM	70536
2,4-Dinitrophenol	ND	16	20		µg/L	1	10/12/2022 10:15:53 PM	70536
2-Methylphenol	ND	5.0	10		µg/L	1	10/12/2022 10:15:53 PM	70536
3+4-Methylphenol	ND	5.1	10		µg/L	1	10/12/2022 10:15:53 PM	70536
Phenol	ND	18	20		µg/L	1	10/12/2022 10:15:53 PM	70536
Pyridine	ND	14	40		µg/L	1	10/12/2022 10:15:53 PM	70536
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	10/12/2022 10:15:53 PM	70536
Surr: 2-Fluorophenol	49.2	0	15-84.5		%Rec	1	10/12/2022 10:15:53 PM	70536
Surr: Phenol-d5	37.5	0	15-67		%Rec	1	10/12/2022 10:15:53 PM	70536
Surr: 2,4,6-Tribromophenol	67.4	0	15-108		%Rec	1	10/12/2022 10:15:53 PM	70536
Surr: Nitrobenzene-d5	55.7	0	16.8-112		%Rec	1	10/12/2022 10:15:53 PM	70536
Surr: 2-Fluorobiphenyl	54.2	0	15-101		%Rec	1	10/12/2022 10:15:53 PM	70536
Surr: 4-Terphenyl-d14	84.2	0	34.4-134		%Rec	1	10/12/2022 10:15:53 PM	70536
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	10/4/2022 8:30:00 PM	70536
Naphthalene	ND	0.20	0.30		µg/L	1	10/4/2022 8:30:00 PM	70536
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	10/4/2022 8:30:00 PM	70536
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	10/4/2022 8:30:00 PM	70536
Acenaphthene	ND	0.14	0.30		µg/L	1	10/4/2022 8:30:00 PM	70536
Fluorene	ND	0.095	0.30		µg/L	1	10/4/2022 8:30:00 PM	70536
Phenanthrene	ND	0.16	0.30		µg/L	1	10/4/2022 8:30:00 PM	70536
Anthracene	ND	0.14	0.30		µg/L	1	10/4/2022 8:30:00 PM	70536
Fluoranthene	ND	0.14	0.30		µg/L	1	10/4/2022 8:30:00 PM	70536
Pyrene	ND	0.32	1.0		µg/L	1	10/4/2022 8:30:00 PM	70536
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	10/4/2022 8:30:00 PM	70536
Chrysene	ND	0.25	0.30		µg/L	1	10/4/2022 8:30:00 PM	70536
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	10/4/2022 8:30:00 PM	70536
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	10/4/2022 8:30:00 PM	70536

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H02**
Date Reported: **10/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MW-2
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/29/2022 9:20:00 AM
Lab ID: 2209H02-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	66.8	0	15-108		%Rec	1	10/4/2022 8:30:00 PM	70536
Surr: 2-Fluorobiphenyl	54.8	0	15-107		%Rec	1	10/4/2022 8:30:00 PM	70536
Surr: 4-Terphenyl-d14	72.7	0	15-166		%Rec	1	10/4/2022 8:30:00 PM	70536

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H02**
Date Reported: **10/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MW-2
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/29/2022 9:20:00 AM
Lab ID: 2209H02-004D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.021	0.0016	0.0030		mg/L	1	10/4/2022 11:44:19 AM	70537
Beryllium	ND	0.00088	0.0020		mg/L	1	10/4/2022 11:44:19 AM	70537
Cadmium	ND	0.0018	0.0020		mg/L	1	10/4/2022 11:44:19 AM	70537
Chromium	0.0050	0.0020	0.0060	J	mg/L	1	10/4/2022 11:44:19 AM	70537
Cobalt	ND	0.0035	0.0060		mg/L	1	10/4/2022 11:44:19 AM	70537
Nickel	ND	0.0053	0.010		mg/L	1	10/4/2022 11:44:19 AM	70537
Silver	ND	0.0018	0.0050		mg/L	1	10/4/2022 11:44:19 AM	70537
Vanadium	ND	0.0035	0.050		mg/L	1	10/4/2022 11:44:19 AM	70537
Zinc	ND	0.0039	0.010		mg/L	1	10/4/2022 11:44:19 AM	70537
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	10/6/2022 3:20:52 PM	70537
Arsenic	0.0010	0.00022	0.0010		mg/L	1	10/5/2022 4:13:34 PM	70537
Lead	ND	0.00019	0.00050		mg/L	1	10/6/2022 3:20:52 PM	70537
Selenium	ND	0.00089	0.0010		mg/L	1	10/6/2022 3:20:52 PM	70537
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	10/6/2022 12:23:31 PM	70627

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H02**
Date Reported: **10/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MW-2
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/29/2022 9:20:00 AM
Lab ID: 2209H02-004E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.019	0.0011	0.0020		mg/L	1	10/4/2022 5:42:16 PM	C91551
Beryllium	ND	0.00088	0.0020		mg/L	1	10/4/2022 5:42:16 PM	C91551
Cadmium	ND	0.00098	0.0020		mg/L	1	10/4/2022 5:42:16 PM	C91551
Chromium	ND	0.0020	0.0060		mg/L	1	10/4/2022 5:42:16 PM	C91551
Cobalt	ND	0.0024	0.0060		mg/L	1	10/4/2022 5:42:16 PM	C91551
Nickel	ND	0.0033	0.010		mg/L	1	10/4/2022 5:42:16 PM	C91551
Silver	ND	0.0013	0.0050		mg/L	1	10/4/2022 5:42:16 PM	C91551
Vanadium	ND	0.0017	0.050		mg/L	1	10/4/2022 5:42:16 PM	C91551
Zinc	0.037	0.0032	0.010		mg/L	1	10/4/2022 5:42:16 PM	C91551
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	10/4/2022 12:19:34 PM	A91522
Arsenic	0.0010	0.00012	0.0010		mg/L	1	10/4/2022 12:19:34 PM	A91522
Lead	ND	0.000057	0.00050		mg/L	1	10/4/2022 12:19:34 PM	A91522
Selenium	ND	0.00034	0.0010		mg/L	1	10/4/2022 12:19:34 PM	A91522
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	10/6/2022 12:25:39 PM	70627

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H02**
Date Reported: **10/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MW-5
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/29/2022 9:40:00 AM
Lab ID: 2209H02-005A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	10/6/2022 12:24:34 AM	GW915
Surr: BFB	94.9	0	70-130		%Rec	1	10/6/2022 12:24:34 AM	GW915
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	10/6/2022 8:05:00 PM	R91600
Toluene	ND	0.20	1.0		µg/L	1	10/6/2022 8:05:00 PM	R91600
Ethylbenzene	ND	0.21	1.0		µg/L	1	10/6/2022 8:05:00 PM	R91600
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	10/6/2022 8:05:00 PM	R91600
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	10/6/2022 8:05:00 PM	R91600
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 8:05:00 PM	R91600
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	10/6/2022 8:05:00 PM	R91600
Acetone	ND	2.5	10		µg/L	1	10/6/2022 8:05:00 PM	R91600
Bromomethane	ND	0.85	3.0		µg/L	1	10/6/2022 8:05:00 PM	R91600
2-Butanone	ND	2.0	10		µg/L	1	10/6/2022 8:05:00 PM	R91600
Carbon disulfide	ND	0.59	10		µg/L	1	10/6/2022 8:05:00 PM	R91600
Chlorobenzene	ND	0.16	1.0		µg/L	1	10/6/2022 8:05:00 PM	R91600
Chloroform	ND	0.13	1.0		µg/L	1	10/6/2022 8:05:00 PM	R91600
Chloromethane	ND	0.41	3.0		µg/L	1	10/6/2022 8:05:00 PM	R91600
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	10/6/2022 8:05:00 PM	R91600
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	10/6/2022 8:05:00 PM	R91600
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	10/6/2022 8:05:00 PM	R91600
Isopropylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 8:05:00 PM	R91600
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	10/6/2022 8:05:00 PM	R91600
Methylene Chloride	ND	0.50	3.0		µg/L	1	10/6/2022 8:05:00 PM	R91600
n-Butylbenzene	ND	0.25	3.0		µg/L	1	10/6/2022 8:05:00 PM	R91600
n-Propylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 8:05:00 PM	R91600
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	10/6/2022 8:05:00 PM	R91600
Styrene	ND	0.14	1.0		µg/L	1	10/6/2022 8:05:00 PM	R91600
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	10/6/2022 8:05:00 PM	R91600
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	10/6/2022 8:05:00 PM	R91600
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	10/6/2022 8:05:00 PM	R91600
Vinyl chloride	ND	0.32	1.0		µg/L	1	10/6/2022 8:05:00 PM	R91600
Xylenes, Total	ND	0.37	1.5		µg/L	1	10/6/2022 8:05:00 PM	R91600
Surr: 1,2-Dichloroethane-d4	100	0	70-130		%Rec	1	10/6/2022 8:05:00 PM	R91600
Surr: 4-Bromofluorobenzene	98.2	0	70-130		%Rec	1	10/6/2022 8:05:00 PM	R91600
Surr: Dibromofluoromethane	100	0	70-130		%Rec	1	10/6/2022 8:05:00 PM	R91600
Surr: Toluene-d8	93.7	0	70-130		%Rec	1	10/6/2022 8:05:00 PM	R91600

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H02**
Date Reported: **10/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MW-5
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/29/2022 9:40:00 AM
Lab ID: 2209H02-005B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	10/4/2022 10:22:14 PM	70550

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H02**
Date Reported: **10/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MW-5
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/29/2022 9:40:00 AM
Lab ID: 2209H02-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **mb**	
Diesel Range Organics (DRO)	1.1	0.016	0.064		mg/L	1	10/3/2022 6:51:36 PM	70521
Motor Oil Range Organics (MRO)	0.50	0.052	0.080		mg/L	1	10/3/2022 6:51:36 PM	70521
Surr: DNOP	92.1	0	42.2-138		%Rec	1	10/3/2022 6:51:36 PM	70521
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	10/13/2022 2:52:59 PM	70536
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	10/13/2022 2:52:59 PM	70536
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	10/13/2022 2:52:59 PM	70536
Di-n-octyl phthalate	ND	12	20		µg/L	1	10/13/2022 2:52:59 PM	70536
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	10/13/2022 2:52:59 PM	70536
Diethyl phthalate	ND	6.0	10		µg/L	1	10/13/2022 2:52:59 PM	70536
Dimethyl phthalate	ND	6.0	10		µg/L	1	10/13/2022 2:52:59 PM	70536
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	10/13/2022 2:52:59 PM	70536
2,4-Dinitrophenol	ND	16	20		µg/L	1	10/13/2022 2:52:59 PM	70536
2-Methylphenol	ND	5.0	10		µg/L	1	10/13/2022 2:52:59 PM	70536
3+4-Methylphenol	ND	5.1	10		µg/L	1	10/13/2022 2:52:59 PM	70536
Phenol	ND	18	20		µg/L	1	10/13/2022 2:52:59 PM	70536
Pyridine	ND	14	40		µg/L	1	10/13/2022 2:52:59 PM	70536
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	10/13/2022 2:52:59 PM	70536
Surr: 2-Fluorophenol	58.8	0	15-84.5		%Rec	1	10/13/2022 2:52:59 PM	70536
Surr: Phenol-d5	43.6	0	15-67		%Rec	1	10/13/2022 2:52:59 PM	70536
Surr: 2,4,6-Tribromophenol	70.3	0	15-108		%Rec	1	10/13/2022 2:52:59 PM	70536
Surr: Nitrobenzene-d5	70.0	0	16.8-112		%Rec	1	10/13/2022 2:52:59 PM	70536
Surr: 2-Fluorobiphenyl	65.6	0	15-101		%Rec	1	10/13/2022 2:52:59 PM	70536
Surr: 4-Terphenyl-d14	88.8	0	34.4-134		%Rec	1	10/13/2022 2:52:59 PM	70536
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	10/4/2022 9:16:00 PM	70536
Naphthalene	ND	0.20	0.30		µg/L	1	10/4/2022 9:16:00 PM	70536
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	10/4/2022 9:16:00 PM	70536
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	10/4/2022 9:16:00 PM	70536
Acenaphthene	ND	0.14	0.30		µg/L	1	10/4/2022 9:16:00 PM	70536
Fluorene	ND	0.095	0.30		µg/L	1	10/4/2022 9:16:00 PM	70536
Phenanthrene	ND	0.16	0.30		µg/L	1	10/4/2022 9:16:00 PM	70536
Anthracene	ND	0.14	0.30		µg/L	1	10/4/2022 9:16:00 PM	70536
Fluoranthene	ND	0.14	0.30		µg/L	1	10/4/2022 9:16:00 PM	70536
Pyrene	ND	0.32	1.0		µg/L	1	10/4/2022 9:16:00 PM	70536
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	10/4/2022 9:16:00 PM	70536
Chrysene	ND	0.25	0.30		µg/L	1	10/4/2022 9:16:00 PM	70536
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	10/4/2022 9:16:00 PM	70536
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	10/4/2022 9:16:00 PM	70536

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H02**
Date Reported: **10/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MW-5
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/29/2022 9:40:00 AM
Lab ID: 2209H02-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	77.4	0	15-108		%Rec	1	10/4/2022 9:16:00 PM	70536
Surr: 2-Fluorobiphenyl	67.5	0	15-107		%Rec	1	10/4/2022 9:16:00 PM	70536
Surr: 4-Terphenyl-d14	79.1	0	15-166		%Rec	1	10/4/2022 9:16:00 PM	70536

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H02**
Date Reported: **10/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MW-5
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/29/2022 9:40:00 AM
Lab ID: 2209H02-005D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.060	0.0016	0.0030		mg/L	1	10/4/2022 11:48:48 AM	70537
Beryllium	ND	0.00088	0.0020		mg/L	1	10/4/2022 11:48:48 AM	70537
Cadmium	ND	0.0018	0.0020		mg/L	1	10/4/2022 11:48:48 AM	70537
Chromium	ND	0.0020	0.0060		mg/L	1	10/4/2022 11:48:48 AM	70537
Cobalt	ND	0.0035	0.0060		mg/L	1	10/4/2022 11:48:48 AM	70537
Nickel	ND	0.0053	0.010		mg/L	1	10/4/2022 11:48:48 AM	70537
Silver	ND	0.0018	0.0050		mg/L	1	10/4/2022 11:48:48 AM	70537
Vanadium	ND	0.0035	0.050		mg/L	1	10/4/2022 11:48:48 AM	70537
Zinc	ND	0.0039	0.010		mg/L	1	10/4/2022 11:48:48 AM	70537
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	10/6/2022 3:23:18 PM	70537
Arsenic	0.00097	0.00022	0.0010	J	mg/L	1	10/5/2022 4:16:01 PM	70537
Lead	ND	0.00019	0.00050		mg/L	1	10/6/2022 3:23:18 PM	70537
Selenium	ND	0.00089	0.0010		mg/L	1	10/6/2022 3:23:18 PM	70537
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	10/6/2022 12:27:48 PM	70627

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H02**
Date Reported: **10/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MW-5
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/29/2022 9:40:00 AM
Lab ID: 2209H02-005E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.017	0.0056	0.010		mg/L	5	10/4/2022 5:48:19 PM	C91551
Beryllium	ND	0.0044	0.010		mg/L	5	10/4/2022 5:48:19 PM	C91551
Cadmium	ND	0.0049	0.010		mg/L	5	10/4/2022 5:48:19 PM	C91551
Chromium	ND	0.0098	0.030		mg/L	5	10/4/2022 5:48:19 PM	C91551
Cobalt	ND	0.012	0.030		mg/L	5	10/4/2022 5:48:19 PM	C91551
Nickel	ND	0.016	0.050		mg/L	5	10/4/2022 5:48:19 PM	C91551
Silver	ND	0.0063	0.025		mg/L	5	10/4/2022 5:48:19 PM	C91551
Vanadium	ND	0.0086	0.25		mg/L	5	10/4/2022 5:48:19 PM	C91551
Zinc	0.029	0.016	0.050	J	mg/L	5	10/4/2022 5:48:19 PM	C91551
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	10/4/2022 12:22:15 PM	A91522
Arsenic	0.00086	0.00012	0.0010	J	mg/L	1	10/4/2022 12:22:15 PM	A91522
Lead	ND	0.000057	0.00050		mg/L	1	10/4/2022 12:22:15 PM	A91522
Selenium	ND	0.00034	0.0010		mg/L	1	10/4/2022 12:22:15 PM	A91522
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	10/6/2022 12:36:21 PM	70627

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H02**
Date Reported: **10/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-9-29-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/29/2022
Lab ID: 2209H02-006A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	10/6/2022 12:48:00 AM	GW915
Surr: BFB	93.5	0	70-130		%Rec	1	10/6/2022 12:48:00 AM	GW915
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	10/6/2022 8:28:00 PM	R91600
Toluene	ND	0.20	1.0		µg/L	1	10/6/2022 8:28:00 PM	R91600
Ethylbenzene	ND	0.21	1.0		µg/L	1	10/6/2022 8:28:00 PM	R91600
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	10/6/2022 8:28:00 PM	R91600
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	10/6/2022 8:28:00 PM	R91600
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 8:28:00 PM	R91600
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	10/6/2022 8:28:00 PM	R91600
Acetone	ND	2.5	10		µg/L	1	10/6/2022 8:28:00 PM	R91600
Bromomethane	ND	0.85	3.0		µg/L	1	10/6/2022 8:28:00 PM	R91600
2-Butanone	ND	2.0	10		µg/L	1	10/6/2022 8:28:00 PM	R91600
Carbon disulfide	ND	0.59	10		µg/L	1	10/6/2022 8:28:00 PM	R91600
Chlorobenzene	ND	0.16	1.0		µg/L	1	10/6/2022 8:28:00 PM	R91600
Chloroform	ND	0.13	1.0		µg/L	1	10/6/2022 8:28:00 PM	R91600
Chloromethane	ND	0.41	3.0		µg/L	1	10/6/2022 8:28:00 PM	R91600
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	10/6/2022 8:28:00 PM	R91600
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	10/6/2022 8:28:00 PM	R91600
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	10/6/2022 8:28:00 PM	R91600
Isopropylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 8:28:00 PM	R91600
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	10/6/2022 8:28:00 PM	R91600
Methylene Chloride	ND	0.50	3.0		µg/L	1	10/6/2022 8:28:00 PM	R91600
n-Butylbenzene	ND	0.25	3.0		µg/L	1	10/6/2022 8:28:00 PM	R91600
n-Propylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 8:28:00 PM	R91600
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	10/6/2022 8:28:00 PM	R91600
Styrene	ND	0.14	1.0		µg/L	1	10/6/2022 8:28:00 PM	R91600
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	10/6/2022 8:28:00 PM	R91600
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	10/6/2022 8:28:00 PM	R91600
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	10/6/2022 8:28:00 PM	R91600
Vinyl chloride	ND	0.32	1.0		µg/L	1	10/6/2022 8:28:00 PM	R91600
Xylenes, Total	ND	0.37	1.5		µg/L	1	10/6/2022 8:28:00 PM	R91600
Surr: 1,2-Dichloroethane-d4	98.6	0	70-130		%Rec	1	10/6/2022 8:28:00 PM	R91600
Surr: 4-Bromofluorobenzene	99.3	0	70-130		%Rec	1	10/6/2022 8:28:00 PM	R91600
Surr: Dibromofluoromethane	98.3	0	70-130		%Rec	1	10/6/2022 8:28:00 PM	R91600
Surr: Toluene-d8	95.6	0	70-130		%Rec	1	10/6/2022 8:28:00 PM	R91600

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H02**
Date Reported: **10/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-9-29-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/29/2022
Lab ID: 2209H02-006B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	10/4/2022 11:22:33 PM	70550

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H02**
Date Reported: **10/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-9-29-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/29/2022
Lab ID: 2209H02-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **mb**	
Diesel Range Organics (DRO)	0.030	0.016	0.064	J	mg/L	1	10/3/2022 7:15:18 PM	70521
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	10/3/2022 7:15:18 PM	70521
Surr: DNOP	94.6	0	42.2-138		%Rec	1	10/3/2022 7:15:18 PM	70521
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	10/13/2022 3:34:58 PM	70536
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	10/13/2022 3:34:58 PM	70536
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	10/13/2022 3:34:58 PM	70536
Di-n-octyl phthalate	ND	12	20		µg/L	1	10/13/2022 3:34:58 PM	70536
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	10/13/2022 3:34:58 PM	70536
Diethyl phthalate	ND	6.0	10		µg/L	1	10/13/2022 3:34:58 PM	70536
Dimethyl phthalate	ND	6.0	10		µg/L	1	10/13/2022 3:34:58 PM	70536
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	10/13/2022 3:34:58 PM	70536
2,4-Dinitrophenol	ND	16	20		µg/L	1	10/13/2022 3:34:58 PM	70536
2-Methylphenol	ND	5.0	10		µg/L	1	10/13/2022 3:34:58 PM	70536
3+4-Methylphenol	ND	5.1	10		µg/L	1	10/13/2022 3:34:58 PM	70536
Phenol	ND	18	20		µg/L	1	10/13/2022 3:34:58 PM	70536
Pyridine	ND	14	40		µg/L	1	10/13/2022 3:34:58 PM	70536
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	10/13/2022 3:34:58 PM	70536
Surr: 2-Fluorophenol	30.7	0	15-84.5		%Rec	1	10/13/2022 3:34:58 PM	70536
Surr: Phenol-d5	23.1	0	15-67		%Rec	1	10/13/2022 3:34:58 PM	70536
Surr: 2,4,6-Tribromophenol	37.3	0	15-108		%Rec	1	10/13/2022 3:34:58 PM	70536
Surr: Nitrobenzene-d5	39.1	0	16.8-112		%Rec	1	10/13/2022 3:34:58 PM	70536
Surr: 2-Fluorobiphenyl	36.5	0	15-101		%Rec	1	10/13/2022 3:34:58 PM	70536
Surr: 4-Terphenyl-d14	58.5	0	34.4-134		%Rec	1	10/13/2022 3:34:58 PM	70536
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	10/5/2022 10:23:00 AM	70536
Naphthalene	ND	0.20	0.30		µg/L	1	10/5/2022 10:23:00 AM	70536
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	10/5/2022 10:23:00 AM	70536
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	10/5/2022 10:23:00 AM	70536
Acenaphthene	ND	0.14	0.30		µg/L	1	10/5/2022 10:23:00 AM	70536
Fluorene	ND	0.095	0.30		µg/L	1	10/5/2022 10:23:00 AM	70536
Phenanthrene	ND	0.16	0.30		µg/L	1	10/5/2022 10:23:00 AM	70536
Anthracene	ND	0.14	0.30		µg/L	1	10/5/2022 10:23:00 AM	70536
Fluoranthene	ND	0.14	0.30		µg/L	1	10/5/2022 10:23:00 AM	70536
Pyrene	ND	0.32	1.0		µg/L	1	10/5/2022 10:23:00 AM	70536
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	10/5/2022 10:23:00 AM	70536
Chrysene	ND	0.25	0.30		µg/L	1	10/5/2022 10:23:00 AM	70536
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	10/5/2022 10:23:00 AM	70536
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	10/5/2022 10:23:00 AM	70536

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H02**
Date Reported: **10/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-9-29-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/29/2022
Lab ID: 2209H02-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	47.7	0	15-108		%Rec	1	10/5/2022 10:23:00 AM	70536
Surr: 2-Fluorobiphenyl	38.5	0	15-107		%Rec	1	10/5/2022 10:23:00 AM	70536
Surr: 4-Terphenyl-d14	57.0	0	15-166		%Rec	1	10/5/2022 10:23:00 AM	70536

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H02**
Date Reported: **10/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-9-29-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/29/2022
Lab ID: 2209H02-006D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.013	0.0016	0.0030		mg/L	1	10/4/2022 11:53:10 AM	70537
Beryllium	ND	0.00088	0.0020		mg/L	1	10/4/2022 11:53:10 AM	70537
Cadmium	ND	0.0018	0.0020		mg/L	1	10/4/2022 11:53:10 AM	70537
Chromium	0.0033	0.0020	0.0060	J	mg/L	1	10/4/2022 11:53:10 AM	70537
Cobalt	ND	0.0035	0.0060		mg/L	1	10/4/2022 11:53:10 AM	70537
Nickel	ND	0.0053	0.010		mg/L	1	10/4/2022 11:53:10 AM	70537
Silver	ND	0.0018	0.0050		mg/L	1	10/4/2022 11:53:10 AM	70537
Vanadium	ND	0.0035	0.050		mg/L	1	10/4/2022 11:53:10 AM	70537
Zinc	ND	0.0039	0.010		mg/L	1	10/4/2022 11:53:10 AM	70537
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	10/6/2022 3:30:40 PM	70537
Arsenic	0.0015	0.00022	0.0010		mg/L	1	10/5/2022 4:18:27 PM	70537
Lead	0.00066	0.00019	0.00050		mg/L	1	10/6/2022 3:30:40 PM	70537
Selenium	ND	0.00089	0.0010		mg/L	1	10/10/2022 3:42:30 PM	70537
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	10/6/2022 12:38:30 PM	70627

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H02**
Date Reported: **10/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-9-29-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/29/2022
Lab ID: 2209H02-006E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.013	0.0011	0.0020		mg/L	1	10/4/2022 5:50:18 PM	C91551
Beryllium	ND	0.00088	0.0020		mg/L	1	10/4/2022 5:50:18 PM	C91551
Cadmium	ND	0.00098	0.0020		mg/L	1	10/4/2022 5:50:18 PM	C91551
Chromium	ND	0.0020	0.0060		mg/L	1	10/4/2022 5:50:18 PM	C91551
Cobalt	ND	0.0024	0.0060		mg/L	1	10/4/2022 5:50:18 PM	C91551
Nickel	ND	0.0033	0.010		mg/L	1	10/4/2022 5:50:18 PM	C91551
Silver	ND	0.0013	0.0050		mg/L	1	10/4/2022 5:50:18 PM	C91551
Vanadium	ND	0.0017	0.050		mg/L	1	10/4/2022 5:50:18 PM	C91551
Zinc	0.029	0.0032	0.010		mg/L	1	10/4/2022 5:50:18 PM	C91551
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	10/4/2022 12:24:57 PM	A91522
Arsenic	0.0013	0.00012	0.0010		mg/L	1	10/4/2022 12:24:57 PM	A91522
Lead	0.00012	0.000057	0.00050	J	mg/L	1	10/4/2022 12:24:57 PM	A91522
Selenium	ND	0.00034	0.0010		mg/L	1	10/4/2022 12:24:57 PM	A91522
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	10/6/2022 12:40:40 PM	70627

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H02**
Date Reported: **10/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB 9-29-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/29/2022 9:40:00 AM
Lab ID: 2209H02-007A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	10/6/2022 8:51:00 PM	R91600
Toluene	ND	0.20	1.0		µg/L	1	10/6/2022 8:51:00 PM	R91600
Ethylbenzene	ND	0.21	1.0		µg/L	1	10/6/2022 8:51:00 PM	R91600
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	10/6/2022 8:51:00 PM	R91600
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	10/6/2022 8:51:00 PM	R91600
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 8:51:00 PM	R91600
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	10/6/2022 8:51:00 PM	R91600
Acetone	ND	2.5	10		µg/L	1	10/6/2022 8:51:00 PM	R91600
Bromomethane	ND	0.85	3.0		µg/L	1	10/6/2022 8:51:00 PM	R91600
2-Butanone	ND	2.0	10		µg/L	1	10/6/2022 8:51:00 PM	R91600
Carbon disulfide	ND	0.59	10		µg/L	1	10/6/2022 8:51:00 PM	R91600
Chlorobenzene	ND	0.16	1.0		µg/L	1	10/6/2022 8:51:00 PM	R91600
Chloroform	ND	0.13	1.0		µg/L	1	10/6/2022 8:51:00 PM	R91600
Chloromethane	ND	0.41	3.0		µg/L	1	10/6/2022 8:51:00 PM	R91600
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	10/6/2022 8:51:00 PM	R91600
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	10/6/2022 8:51:00 PM	R91600
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	10/6/2022 8:51:00 PM	R91600
Isopropylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 8:51:00 PM	R91600
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	10/6/2022 8:51:00 PM	R91600
Methylene Chloride	ND	0.50	3.0		µg/L	1	10/6/2022 8:51:00 PM	R91600
n-Butylbenzene	ND	0.25	3.0		µg/L	1	10/6/2022 8:51:00 PM	R91600
n-Propylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 8:51:00 PM	R91600
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	10/6/2022 8:51:00 PM	R91600
Styrene	ND	0.14	1.0		µg/L	1	10/6/2022 8:51:00 PM	R91600
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	10/6/2022 8:51:00 PM	R91600
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	10/6/2022 8:51:00 PM	R91600
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	10/6/2022 8:51:00 PM	R91600
Vinyl chloride	ND	0.32	1.0		µg/L	1	10/6/2022 8:51:00 PM	R91600
Xylenes, Total	ND	0.37	1.5		µg/L	1	10/6/2022 8:51:00 PM	R91600
Surr: 1,2-Dichloroethane-d4	98.8	0	70-130		%Rec	1	10/6/2022 8:51:00 PM	R91600
Surr: 4-Bromofluorobenzene	97.6	0	70-130		%Rec	1	10/6/2022 8:51:00 PM	R91600
Surr: Dibromofluoromethane	99.5	0	70-130		%Rec	1	10/6/2022 8:51:00 PM	R91600
Surr: Toluene-d8	94.4	0	70-130		%Rec	1	10/6/2022 8:51:00 PM	R91600

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H02**
Date Reported: **10/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 3rd Quarter
Collection Date:
Lab ID: 2209H02-008A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	10/6/2022 9:14:00 PM	R91600
Toluene	ND	0.20	1.0		µg/L	1	10/6/2022 9:14:00 PM	R91600
Ethylbenzene	ND	0.21	1.0		µg/L	1	10/6/2022 9:14:00 PM	R91600
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	10/6/2022 9:14:00 PM	R91600
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	10/6/2022 9:14:00 PM	R91600
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 9:14:00 PM	R91600
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	10/6/2022 9:14:00 PM	R91600
Acetone	3.2	2.5	10	J	µg/L	1	10/6/2022 9:14:00 PM	R91600
Bromomethane	ND	0.85	3.0		µg/L	1	10/6/2022 9:14:00 PM	R91600
2-Butanone	ND	2.0	10		µg/L	1	10/6/2022 9:14:00 PM	R91600
Carbon disulfide	ND	0.59	10		µg/L	1	10/6/2022 9:14:00 PM	R91600
Chlorobenzene	ND	0.16	1.0		µg/L	1	10/6/2022 9:14:00 PM	R91600
Chloroform	ND	0.13	1.0		µg/L	1	10/6/2022 9:14:00 PM	R91600
Chloromethane	ND	0.41	3.0		µg/L	1	10/6/2022 9:14:00 PM	R91600
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	10/6/2022 9:14:00 PM	R91600
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	10/6/2022 9:14:00 PM	R91600
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	10/6/2022 9:14:00 PM	R91600
Isopropylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 9:14:00 PM	R91600
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	10/6/2022 9:14:00 PM	R91600
Methylene Chloride	ND	0.50	3.0		µg/L	1	10/6/2022 9:14:00 PM	R91600
n-Butylbenzene	ND	0.25	3.0		µg/L	1	10/6/2022 9:14:00 PM	R91600
n-Propylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 9:14:00 PM	R91600
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	10/6/2022 9:14:00 PM	R91600
Styrene	ND	0.14	1.0		µg/L	1	10/6/2022 9:14:00 PM	R91600
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	10/6/2022 9:14:00 PM	R91600
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	10/6/2022 9:14:00 PM	R91600
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	10/6/2022 9:14:00 PM	R91600
Vinyl chloride	ND	0.32	1.0		µg/L	1	10/6/2022 9:14:00 PM	R91600
Xylenes, Total	ND	0.37	1.5		µg/L	1	10/6/2022 9:14:00 PM	R91600
Surr: 1,2-Dichloroethane-d4	99.7	0	70-130		%Rec	1	10/6/2022 9:14:00 PM	R91600
Surr: 4-Bromofluorobenzene	99.4	0	70-130		%Rec	1	10/6/2022 9:14:00 PM	R91600
Surr: Dibromofluoromethane	99.6	0	70-130		%Rec	1	10/6/2022 9:14:00 PM	R91600
Surr: Toluene-d8	94.5	0	70-130		%Rec	1	10/6/2022 9:14:00 PM	R91600

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H02**
Date Reported: **10/19/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 3rd Quarter
Collection Date:
Lab ID: 2209H02-008B
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	10/4/2022 11:52:35 PM	70550

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

ANALYTICAL REPORT

October 07, 2022

Hall Environmental Analysis Laboratory

Sample Delivery Group: L1542753

Samples Received: 10/04/2022

Project Number:

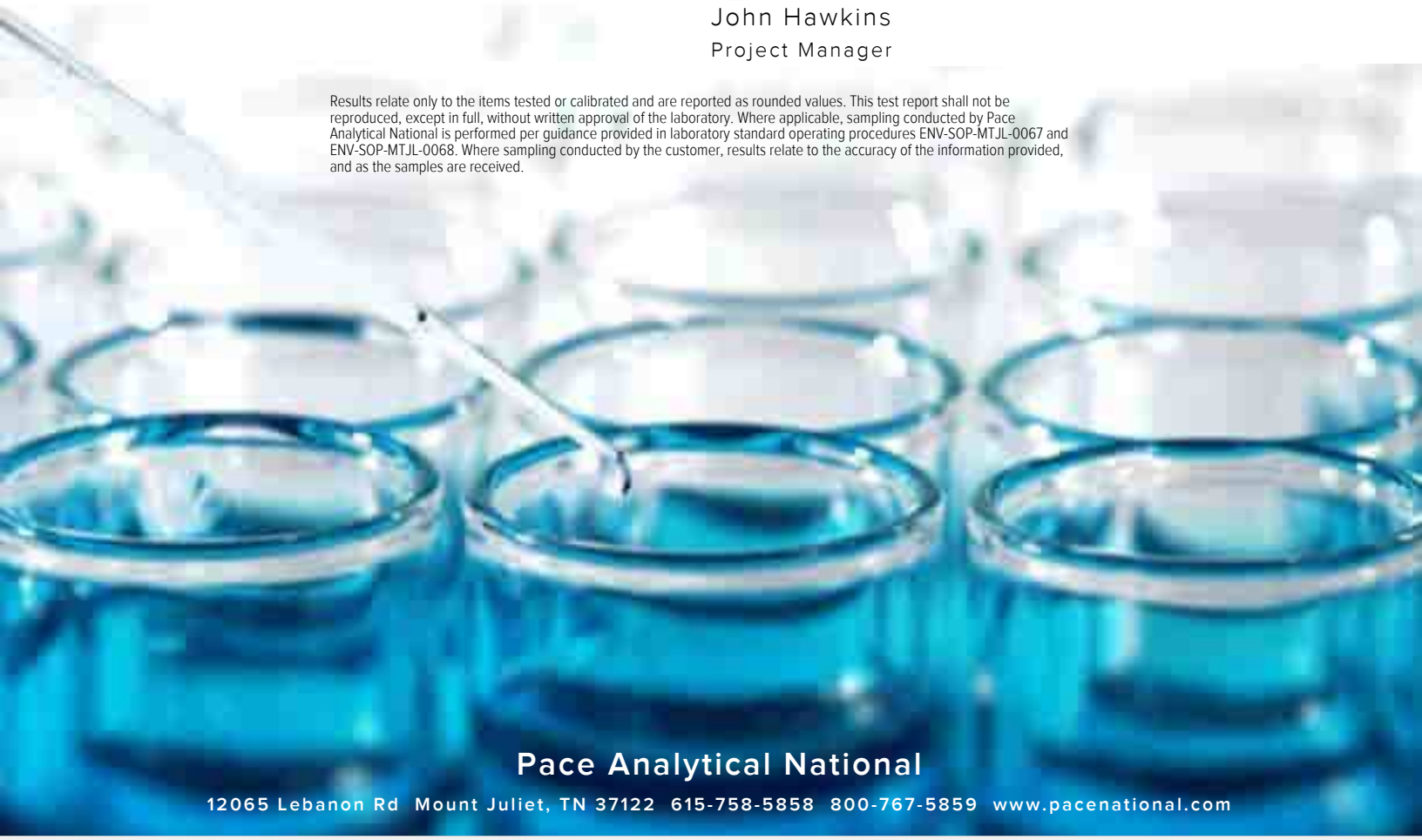
Description:

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By:

John Hawkins
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 4

Sr: Sample Results 5

2209H02-001F EB-09-29-22 L1542753-01 5

2209H02-002F MW-1 L1542753-02 6

2209H02-003F SMW-4 L1542753-03 7

2209H02-004F MW-2 L1542753-04 8

2209H02-005F MW-5 L1542753-05 9

2209H02-006F DUP-9-29-22 L1542753-06 10

Qc: Quality Control Summary 11

Wet Chemistry by Method 4500CN E-2016 11

Gl: Glossary of Terms 13

Al: Accreditations & Locations 14

Sc: Sample Chain of Custody 15

SAMPLE SUMMARY

2209H02-001F EB-09-29-22 L1542753-01 WW

			Collected by	Collected date/time	Received date/time	
				09/29/22 08:00	10/04/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1937600	1	10/06/22 03:18	10/07/22 12:44	CAT	Mt. Juliet, TN

2209H02-002F MW-1 L1542753-02 WW

			Collected by	Collected date/time	Received date/time	
				09/29/22 08:30	10/04/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1937600	1	10/06/22 03:18	10/07/22 12:45	CAT	Mt. Juliet, TN

2209H02-003F SMW-4 L1542753-03 WW

			Collected by	Collected date/time	Received date/time	
				09/29/22 09:00	10/04/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1937600	1	10/06/22 03:18	10/07/22 12:46	CAT	Mt. Juliet, TN

2209H02-004F MW-2 L1542753-04 WW

			Collected by	Collected date/time	Received date/time	
				09/29/22 09:20	10/04/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1937600	1	10/06/22 03:18	10/07/22 12:47	CAT	Mt. Juliet, TN

2209H02-005F MW-5 L1542753-05 WW

			Collected by	Collected date/time	Received date/time	
				09/29/22 09:40	10/04/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1937600	1	10/06/22 03:18	10/07/22 12:48	CAT	Mt. Juliet, TN

2209H02-006F DUP-9-29-22 L1542753-06 WW

			Collected by	Collected date/time	Received date/time	
				09/29/22 00:00	10/04/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1937600	1	10/06/22 03:18	10/07/22 12:49	CAT	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Received by OCD: 4/21/2023 9:21:57 AM

Collected date/time: 09/29/22 08:00
L1542753

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	10/07/2022 12:44	WG1937600

Released to Imaging: 4/21/2023 9:40:26 AM

Received by OCD: 4/21/2023 9:21:57 AM

2209H02-002F MW-1
Collected date/time: 09/29/22 08:30
L1542753

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	10/07/2022 12:45	WG1937600

Released to Imaging: 4/21/2023 9:40:26 AM

Received by OCD: 4/21/2023 9:21:57 AM

2209H02-003F SMW-4
Collected date/time: 09/29/22 09:00
L1542753

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	10/07/2022 12:46	WG1937600

Released to Imaging: 4/21/2023 9:40:26 AM

Received by OCD: 4/21/2023 9:21:57 AM

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	10/07/2022 12:47	WG1937600

Released to Imaging: 4/21/2023 9:40:26 AM

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	10/07/2022 12:48	WG1937600

Received by OCD: 4/21/2023 9:21:57 AM

Collected date/time: 09/29/22 00:00
L1542753

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	10/07/2022 12:49	WG1937600

Released to Imaging: 4/21/2023 9:40:26 AM

Method Blank (MB)

(MB) R3845870-1 10/07/22 12:16

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1542733-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1542733-01 10/07/22 12:22 • (DUP) R3845870-3 10/07/22 12:23

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

L1542734-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1542734-02 10/07/22 12:30 • (DUP) R3845870-6 10/07/22 12:31

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3845870-2 10/07/22 12:17

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.0985	98.5	87.1-120	

L1542733-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1542733-02 10/07/22 12:24 • (MS) R3845870-4 10/07/22 12:25 • (MSD) R3845870-5 10/07/22 12:26

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0880	0.0881	88.0	88.1	1	90.0-110	J6	J6	0.114	20

Sample Narrative:

MS: Matrix spike failure due to matrix interference.

MSD: Matrix spike failure due to matrix interference.

L1542742-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1542742-01 10/07/22 12:32 • (MS) R3845870-7 10/07/22 12:33 • (MSD) R3845870-8 10/07/22 12:34

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0957	0.0953	93.7	93.3	1	90.0-110			0.419	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Received by OCD: 4/21/2023 9:21:57 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

1042

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

SUB CONTRATOR: Pace TN	COMPANY: PACE TN	PHONE: (800) 767-5859	FAX: (615) 758-5859
ADDRESS: 12065 Lebanon Rd		ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: Mt. Juliet, TN 37122			

L1542753

712 RLV

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS	
1	2209H02-001F	EB-09-29-22	500AMBHDP E-NAOH	Groundwater	9/29/2022 8:00:00 AM	1	Total Cyanide J and MDL	-01
2	2209H02-002F	MW-1	500AMBHDP E-NAOH	Groundwater	9/29/2022 8:30:00 AM	1	Total Cyanide J and MDL	-02
3	2209H02-003F	SMW-4	500AMBHDP E-NAOH	Groundwater	9/29/2022 9:00:00 AM	1	Total Cyanide J and MDL	-03
4	2209H02-004F	MW-2	500AMBHDP E-NAOH	Groundwater	9/29/2022 9:20:00 AM	1	Total Cyanide J and MDL	-04
5	2209H02-005F	MW-5	500AMBHDP E-NAOH	Groundwater	9/29/2022 9:40:00 AM	1	Total Cyanide J and MDL	-05
6	2209H02-006F	DUP-9-29-22	500AMBHDP E-NAOH	Groundwater	9/29/2022	1	Total Cyanide J and MDL	-06

Sample Receipt Checklist

COC Seal Present/Intact:	Y N	If Applicable	
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	Y N	Pres.Correct/Check:	Y N
Correct bottles used:	Y N		
Sufficient volume sent:	Y N		
RAD Screen <0.5 mR/hr:	Y N		

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By:	Date: 9/30/2022	Time: 8:17 AM	Received By:	Date: 10/4/22	Time: 0700
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☐ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:

☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY

Temp of samples 3.0 °C Attempt to Cool ? _____

Comments: _____

Released to Imaging: 4/21/2023 9:40:26 AM

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209H02**

19-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70537**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **70537**	RunNo: **91525**
Prep Date: **10/3/2022**	Analysis Date: **10/4/2022**	SeqNo: **3278251** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	0.0055	0.010								J

Sample ID: **LCSLL-70537**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **70537**	RunNo: **91525**
Prep Date: **10/3/2022**	Analysis Date: **10/4/2022**	SeqNo: **3278252** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0021	0.0030	0.002000	0	105	50	150			J
Beryllium	0.0021	0.0020	0.002000	0	106	50	150			
Cadmium	0.0018	0.0020	0.002000	0	91.6	50	150			J
Chromium	0.0091	0.0060	0.006000	0	152	50	150			S
Cobalt	0.0048	0.0060	0.006000	0	80.6	50	150			J
Nickel	0.0064	0.010	0.005000	0	129	50	150			J
Silver	0.0053	0.0050	0.005000	0	106	50	150			
Vanadium	0.011	0.050	0.01000	0	108	50	150			J
Zinc	0.013	0.010	0.01000	0	130	50	150			

Sample ID: **LCS-70537**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **70537**	RunNo: **91525**
Prep Date: **10/3/2022**	Analysis Date: **10/4/2022**	SeqNo: **3278253** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.52	0.0030	0.5000	0	104	85	115			
Beryllium	0.53	0.0020	0.5000	0	106	85	115			
Cadmium	0.52	0.0020	0.5000	0	103	85	115			
Chromium	0.52	0.0060	0.5000	0	103	85	115			
Cobalt	0.52	0.0060	0.5000	0	103	85	115			
Nickel	0.50	0.010	0.5000	0	100	85	115			
Silver	0.10	0.0050	0.1000	0	102	85	115			
Vanadium	0.52	0.050	0.5000	0	105	85	115			
Zinc	0.52	0.010	0.5000	0	105	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209H02**

19-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-C**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **C91551**	RunNo: **91551**
Prep Date:	Analysis Date: **10/4/2022**	SeqNo: **3279594** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS-C**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **C91551**	RunNo: **91551**
Prep Date:	Analysis Date: **10/4/2022**	SeqNo: **3279595** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0019	0.0020	0.002000	0	95.0	50	150			J
Beryllium	0.0013	0.0020	0.002000	0	67.2	50	150			J
Cadmium	0.0025	0.0020	0.002000	0	123	50	150			
Chromium	0.0065	0.0060	0.006000	0	109	50	150			
Cobalt	0.0069	0.0060	0.006000	0	114	50	150			
Nickel	0.0037	0.010	0.005000	0	74.7	50	150			J
Silver	0.0049	0.0050	0.005000	0	97.2	50	150			J
Vanadium	0.0076	0.050	0.01000	0	75.9	50	150			J
Zinc	0.014	0.010	0.01000	0	137	50	150			

Sample ID: **LCS-C**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **C91551**	RunNo: **91551**
Prep Date:	Analysis Date: **10/4/2022**	SeqNo: **3279596** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.52	0.0020	0.5000	0	104	85	115			
Beryllium	0.51	0.0020	0.5000	0	102	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.4	85	115			
Chromium	0.51	0.0060	0.5000	0	102	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.0	85	115			
Nickel	0.51	0.010	0.5000	0	102	85	115			
Silver	0.11	0.0050	0.1000	0	109	85	115			
Vanadium	0.51	0.050	0.5000	0	101	85	115			
Zinc	0.51	0.010	0.5000	0	102	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209H02**

19-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70537**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **70537**	RunNo: **91575**
Prep Date: **10/3/2022**	Analysis Date: **10/5/2022**	SeqNo: **3280686** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **MSLCSLL-70537**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **70537**	RunNo: **91575**
Prep Date: **10/3/2022**	Analysis Date: **10/5/2022**	SeqNo: **3280687** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0011	0.0010	0.001000	0	106	50	150			
Arsenic	0.0011	0.0010	0.001000	0	105	50	150			
Lead	0.00051	0.00050	0.0005000	0	103	50	150			
Selenium	0.0010	0.0010	0.001000	0	99.8	50	150			J

Sample ID: **MSLCS-70537**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **70537**	RunNo: **91575**
Prep Date: **10/3/2022**	Analysis Date: **10/5/2022**	SeqNo: **3280688** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	94.7	85	115			
Arsenic	0.024	0.0010	0.02500	0	97.2	85	115			
Lead	0.012	0.00050	0.01250	0	97.4	85	115			
Selenium	0.024	0.0010	0.02500	0	94.5	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209H02**

19-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A91522**	RunNo: **91522**
Prep Date:	Analysis Date: **10/4/2022**	SeqNo: **3278154** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A91522**	RunNo: **91522**
Prep Date:	Analysis Date: **10/4/2022**	SeqNo: **3278155** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0012	0.0010	0.001000	0	116	50	150			
Arsenic	0.0010	0.0010	0.001000	0	102	50	150			
Lead	0.00056	0.00050	0.0005000	0	111	50	150			
Selenium	0.0012	0.0010	0.001000	0	123	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A91522**	RunNo: **91522**
Prep Date:	Analysis Date: **10/4/2022**	SeqNo: **3278156** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.4	85	115			
Arsenic	0.025	0.0010	0.02500	0	98.6	85	115			
Lead	0.013	0.00050	0.01250	0	101	85	115			
Selenium	0.025	0.0010	0.02500	0	99.0	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209H02**

19-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70627**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **PBW**	Batch ID: **70627**	RunNo: **91595**							
Prep Date: **10/5/2022**	Analysis Date: **10/6/2022**	SeqNo: **3281398**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-70627**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **BatchQC**	Batch ID: **70627**	RunNo: **91595**							
Prep Date: **10/5/2022**	Analysis Date: **10/6/2022**	SeqNo: **3281399**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00014	0.00020	0.0001500	0	95.1	50	150			J

Sample ID: **LCS-70627**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **LCSW**	Batch ID: **70627**	RunNo: **91595**							
Prep Date: **10/5/2022**	Analysis Date: **10/6/2022**	SeqNo: **3281400**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0053	0.00020	0.005000	0	105	85	115			

Sample ID: **2209H02-003DMS**	SampType: **MS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **SMW-4**	Batch ID: **70627**	RunNo: **91595**							
Prep Date: **10/5/2022**	Analysis Date: **10/6/2022**	SeqNo: **3281450**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0063	0.00020	0.005000	0	126	75	125			S

Sample ID: **2209H02-003DMSD**	SampType: **MSD**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **SMW-4**	Batch ID: **70627**	RunNo: **91595**							
Prep Date: **10/5/2022**	Analysis Date: **10/6/2022**	SeqNo: **3281451**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0062	0.00020	0.005000	0	124	75	125	2.06	20	

Sample ID: **2209H02-003DMS**	SampType: **MS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **SMW-4**	Batch ID: **70627**	RunNo: **91595**							
Prep Date: **10/5/2022**	Analysis Date: **10/6/2022**	SeqNo: **3281482**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0036	0.0010	0.005000	0	72.1	75	125			S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209H02**

19-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **2209H02-003DMSD**	SampType: **MSD**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **SMW-4**	Batch ID: **70627**	RunNo: **91595**
Prep Date: **10/5/2022**	Analysis Date: **10/6/2022**	SeqNo: **3281483** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0037	0.0010	0.005000	0	74.7	75	125	3.42	20	S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209H02**

19-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70550**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **70550**	RunNo: **91538**
Prep Date: **10/4/2022**	Analysis Date: **10/4/2022**	SeqNo: **3279152** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-70550**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW**	Batch ID: **70550**	RunNo: **91538**
Prep Date: **10/4/2022**	Analysis Date: **10/4/2022**	SeqNo: **3279153** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.12	0.010	0.1000	0	117	70	130			

Sample ID: **LCSD-70550**	SampType: **LCSD**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSS02**	Batch ID: **70550**	RunNo: **91538**
Prep Date: **10/4/2022**	Analysis Date: **10/4/2022**	SeqNo: **3279154** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.10	0.010	0.1000	0	99.8	70	130	16.0	20	

Sample ID: **MB-70550**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **70550**	RunNo: **91538**
Prep Date: **10/4/2022**	Analysis Date: **10/4/2022**	SeqNo: **3279176** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209H02**

19-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70521**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **PBW**	Batch ID: **70521**	RunNo: **91480**
Prep Date: **9/30/2022**	Analysis Date: **10/3/2022**	SeqNo: **3277549** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.019	0.064								J
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.030		0.03750		80.5	42.2	138			

Sample ID: **LCS-70521**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSW**	Batch ID: **70521**	RunNo: **91480**
Prep Date: **9/30/2022**	Analysis Date: **10/3/2022**	SeqNo: **3277550** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.11	0.064	0.1875	0	56.2	31.7	75.4			
Surr: DNOP	0.017		0.01875		91.3	42.2	138			

Sample ID: **LCSD-70521**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02**	Batch ID: **70521**	RunNo: **91480**
Prep Date: **9/30/2022**	Analysis Date: **10/3/2022**	SeqNo: **3277551** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.12	0.064	0.1875	0	66.5	31.7	75.4	16.8	20	
Surr: DNOP	0.016		0.01875		87.1	42.2	138	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209H02**

19-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **2.25ug gro lcsll**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **GW91584**	RunNo: **91584**
Prep Date:	Analysis Date: **10/5/2022**	SeqNo: **3280846** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.48	0.050	0.5000	0	95.3	80	120			
Surr: BFB	39		20.00		193	70	130			S

Sample ID: **2209h02-002a ms**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **MW-1**	Batch ID: **GW91584**	RunNo: **91584**
Prep Date:	Analysis Date: **10/5/2022**	SeqNo: **3280849** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	91.8	70	130			
Surr: BFB	38		20.00		192	70	130			S

Sample ID: **2209h02-002a msd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **MW-1**	Batch ID: **GW91584**	RunNo: **91584**
Prep Date:	Analysis Date: **10/5/2022**	SeqNo: **3280850** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	92.4	70	130	0.651	20	
Surr: BFB	39		20.00		193	70	130	0	0	S

Sample ID: **mbll**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **GW91584**	RunNo: **91584**
Prep Date:	Analysis Date: **10/5/2022**	SeqNo: **3280856** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	18		20.00		91.6	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209H02**

19-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R91600**	RunNo: **91600**
Prep Date:	Analysis Date: **10/6/2022**	SeqNo: **3281749** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	97.3	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Chlorobenzene	21	1.0	20.00	0	105	70	130			
1,1-Dichloroethene	18	1.0	20.00	0	89.0	70	130			
Trichloroethene (TCE)	19	1.0	20.00	0	92.9	70	130			
Surr: 1,2-Dichloroethane-d4	9.7		10.00		97.4	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	9.6		10.00		95.9	70	130			
Surr: Toluene-d8	9.6		10.00		96.1	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R91600**	RunNo: **91600**
Prep Date:	Analysis Date: **10/6/2022**	SeqNo: **3282580** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209H02**

19-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R91600**	RunNo: **91600**
Prep Date:	Analysis Date: **10/6/2022**	SeqNo: **3282580** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.5		10.00		95.3	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	9.7		10.00		97.0	70	130			
Surr: Toluene-d8	9.6		10.00		95.8	70	130			

Sample ID: **2209H02-002ams**	SampType: **MS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **MW-1**	Batch ID: **R91600**	RunNo: **91600**
Prep Date:	Analysis Date: **10/6/2022**	SeqNo: **3282583** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	93.4	70	130			
Toluene	19	1.0	20.00	0	97.0	70	130			
Chlorobenzene	20	1.0	20.00	0	101	70	130			
1,1-Dichloroethene	17	1.0	20.00	0	85.2	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	89.8	70	130			
Surr: 1,2-Dichloroethane-d4	9.8		10.00		98.5	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		99.5	70	130			
Surr: Dibromofluoromethane	9.9		10.00		98.6	70	130			
Surr: Toluene-d8	9.5		10.00		94.7	70	130			

Sample ID: **2209H02-002amsd**	SampType: **MSD**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **MW-1**	Batch ID: **R91600**	RunNo: **91600**
Prep Date:	Analysis Date: **10/6/2022**	SeqNo: **3282584** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	96.6	70	130	3.46	20	
Toluene	20	1.0	20.00	0	97.9	70	130	0.883	20	
Chlorobenzene	21	1.0	20.00	0	103	70	130	1.89	20	
1,1-Dichloroethene	17	1.0	20.00	0	86.4	70	130	1.39	20	
Trichloroethene (TCE)	18	1.0	20.00	0	92.0	70	130	2.44	20	
Surr: 1,2-Dichloroethane-d4	9.8		10.00		98.1	70	130	0	0	
Surr: 4-Bromofluorobenzene	10		10.00		99.6	70	130	0	0	
Surr: Dibromofluoromethane	9.9		10.00		99.5	70	130	0	0	
Surr: Toluene-d8	9.4		10.00		94.5	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209H02**

19-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70536**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **70536**	RunNo: **91758**
Prep Date: **10/3/2022**	Analysis Date: **10/12/2022**	SeqNo: **3289568** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Anthracene	ND	10								
Benz(a)anthracene	ND	5.0								
Benzo(b)fluoranthene	ND	10								
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	10								
2,4-Dinitrophenol	ND	20								
Fluoranthene	ND	10								
Fluorene	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
1-Methylnaphthalene	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
Naphthalene	ND	5.0								
Phenanthrene	ND	10								
Phenol	ND	20								
Pyrene	ND	10								
Pyridine	ND	40								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	120		200.0		59.9	15	84.5			
Surr: Phenol-d5	88		200.0		44.2	15	67			
Surr: 2,4,6-Tribromophenol	140		200.0		69.8	15	108			
Surr: Nitrobenzene-d5	71		100.0		71.4	16.8	112			
Surr: 2-Fluorobiphenyl	66		100.0		65.8	15	101			
Surr: 4-Terphenyl-d14	86		100.0		85.7	34.4	134			

Sample ID: **LCS-70536**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **70536**	RunNo: **91758**
Prep Date: **10/3/2022**	Analysis Date: **10/12/2022**	SeqNo: **3289569** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209H02**

19-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **LCS-70536**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **70536**	RunNo: **91758**
Prep Date: **10/3/2022**	Analysis Date: **10/12/2022**	SeqNo: **3289569** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	70	10	100.0	0	69.5	21.3	104			
1,4-Dichlorobenzene	51	5.0	100.0	0	50.6	15	89.8			
Phenol	98	20	200.0	0	48.8	17	61.1			
Pyrene	83	10	100.0	0	83.4	61	123			
Surr: 2-Fluorophenol	120		200.0		60.8	15	84.5			
Surr: Phenol-d5	90		200.0		45.1	15	67			
Surr: 2,4,6-Tribromophenol	160		200.0		79.5	15	108			
Surr: Nitrobenzene-d5	75		100.0		74.6	16.8	112			
Surr: 2-Fluorobiphenyl	67		100.0		66.5	15	101			
Surr: 4-Terphenyl-d14	92		100.0		91.8	34.4	134			

Sample ID: **LCSD-70536**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **70536**	RunNo: **91758**
Prep Date: **10/3/2022**	Analysis Date: **10/12/2022**	SeqNo: **3289570** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	63	10	100.0	0	63.4	21.3	104	9.13	45.3	
1,4-Dichlorobenzene	44	5.0	100.0	0	44.0	15	89.8	14.0	39.6	
Phenol	89	20	200.0	0	44.4	17	61.1	9.52	42.5	
Pyrene	79	10	100.0	0	79.2	61	123	5.22	11.8	
Surr: 2-Fluorophenol	110		200.0		57.3	15	84.5	0	0	
Surr: Phenol-d5	87		200.0		43.4	15	67	0	0	
Surr: 2,4,6-Tribromophenol	150		200.0		75.1	15	108	0	0	
Surr: Nitrobenzene-d5	75		100.0		74.6	16.8	112	0	0	
Surr: 2-Fluorobiphenyl	65		100.0		64.6	15	101	0	0	
Surr: 4-Terphenyl-d14	94		100.0		93.9	34.4	134	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209H02**

19-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **mb-70536**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **70536**	RunNo: **91528**
Prep Date: **10/3/2022**	Analysis Date: **10/4/2022**	SeqNo: **3278417** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.30								
1-Methylnaphthalene	ND	0.30								
2-Methylnaphthalene	ND	0.30								
Acenaphthene	ND	0.30								
Fluorene	ND	0.30								
Phenanthrene	ND	0.30								
Anthracene	ND	0.30								
Fluoranthene	ND	0.30								
Pyrene	ND	1.0								
Benz(a)anthracene	ND	0.30								
Chrysene	ND	0.30								
Benzo(b)fluoranthene	ND	0.30								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	82		100.0		82.1	15	108			
Surr: 2,4,6-Tribromophenol	86		200.0		42.8	15	112			
Surr: 2-Fluorobiphenyl	68		100.0		68.1	15	107			
Surr: 4-Terphenyl-d14	78		100.0		77.5	15	166			

Sample ID: **LCS-70536 LF**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **70536**	RunNo: **91528**
Prep Date: **10/3/2022**	Analysis Date: **10/4/2022**	SeqNo: **3278418** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.50	0.30	2.000	0	25.0	15	60.5			
Naphthalene	0.92	0.30	2.000	0	46.0	15	78.3			
1-Methylnaphthalene	0.96	0.30	2.000	0	48.0	15	79.6			
2-Methylnaphthalene	1.0	0.30	2.000	0	50.0	15	78.6			
Acenaphthene	0.94	0.30	2.000	0	47.0	15	92			
Fluorene	1.2	0.30	2.000	0	58.0	15	96			
Phenanthrene	1.4	0.30	2.000	0	69.0	21	103			
Anthracene	1.8	0.30	2.000	0	89.0	21.1	106			
Fluoranthene	2.1	0.30	2.000	0	105	32.8	119			
Pyrene	1.9	1.0	2.000	0	95.0	34.1	110			
Benz(a)anthracene	2.1	0.30	2.000	0	107	32	132			
Chrysene	1.3	0.30	2.000	0	66.0	31.3	112			
Benzo(b)fluoranthene	1.7	0.30	2.000	0	84.0	34.1	119			
Indeno(1,2,3-cd)pyrene	2.2	0.30	2.000	0	110	24.7	152			
Surr: Nitrobenzene-d5	49		100.0		48.7	15	108			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209H02**

19-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **LCS-70536 LF**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **70536**	RunNo: **91528**
Prep Date: **10/3/2022**	Analysis Date: **10/4/2022**	SeqNo: **3278418** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	79		200.0		39.3	15	112			
Surr: 2-Fluorobiphenyl	44		100.0		43.6	15	107			
Surr: 4-Terphenyl-d14	55		100.0		54.5	15	166			

Sample ID: **LCSD-70536 LF**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02**	Batch ID: **70536**	RunNo: **91528**
Prep Date: **10/3/2022**	Analysis Date: **10/4/2022**	SeqNo: **3278419** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.88	0.30	2.000	0	44.0	15	60.5	55.1	29.7	R
Naphthalene	1.4	0.30	2.000	0	68.0	15	78.3	38.6	31.7	R
1-Methylnaphthalene	1.4	0.30	2.000	0	69.0	15	79.6	35.9	31.4	R
2-Methylnaphthalene	1.4	0.30	2.000	0	69.0	15	78.6	31.9	30.5	R
Acenaphthene	1.5	0.30	2.000	0	73.0	15	92	43.3	30.5	R
Fluorene	1.6	0.30	2.000	0	78.0	15	96	29.4	25.1	R
Phenanthrene	1.5	0.30	2.000	0	76.0	21	103	9.66	26.4	
Anthracene	1.7	0.30	2.000	0	86.0	21.1	106	3.43	14.4	
Fluoranthene	1.8	0.30	2.000	0	91.0	32.8	119	14.3	14.8	
Pyrene	1.7	1.0	2.000	0	83.0	34.1	110	13.5	19.2	
Benz(a)anthracene	2.2	0.30	2.000	0	111	32	132	3.67	29.3	
Chrysene	1.6	0.30	2.000	0	79.0	31.3	112	17.9	19	
Benzo(b)fluoranthene	2.0	0.30	2.000	0	100	34.1	119	17.4	31.6	
Indeno(1,2,3-cd)pyrene	2.5	0.30	2.000	0	127	24.7	152	14.3	21.3	
Surr: Nitrobenzene-d5	76		100.0		76.5	15	108	0	0	
Surr: 2,4,6-Tribromophenol	87		200.0		43.3	15	112	0	0	
Surr: 2-Fluorobiphenyl	63		100.0		62.9	15	107	0	0	
Surr: 4-Terphenyl-d14	65		100.0		64.7	15	166	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **Marathon** Work Order Number: **2209H02** RcptNo: 1

Received By: **Juan Rojas** **9/30/2022 7:30:00 AM**

Completed By: **Cheyenne Cason** **9/30/2022 8:10:51 AM**

Reviewed By: TMe 9/30/22

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preserved added to bottles? Yes ☐ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☑ No ☐ NA ☐
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: 2 6 (<2 or >12 unless noted)
Adjusted? NO
Checked by: DM 9/30/22

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			
2	1.7	Good	Yes			
3	0.6	Good	Yes			

Released to Imaging: 4/21/2023 9:40:26 AM

Chain-of-Custody Record

Marathon Gallup Refinery

Turn-Around Time: X Standard Rush

Project Name: 2022 GW Sampling 3rd Quarter

Project #: 697-080-001

Project Manager: Lesli Alexander/Mackensie Swift

Sampler:

On Ice: ☐ Yes ☐ No

# of Coolers: 3

Cooler Temp(including CF): See Remarks

Mailing Address: 92 Giant Crossing Road, Jamestown, NM,87347

Phone #: 808-640-1823

email or Fax#:

QA/QC Package: Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance ☐ NELAC ☐ Other

EDD (Type)

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2209H02	See Analyte List	8260B: VOC	8270C: SVOC	8270C SIM: PAH, 1,4 Dioxane	8015: TPH GRO/DRO/MRO	E200.7: Metals	E200.7: Dissolved Metals	E245.1 Mercury	E504.1: EDB	E335.4: Cyanide Subbed		537.1: PFAS	SM 5201B: BOD	410.4: COD	SM9223B E. Coli
9/29	8:00		EB-9-29-22	13		001	X	X	X	X	X	X	X	X	X	X					
9/29	8:30		MW-1	13		002	X	X	X	X	X	X	X	X	X	X					
9/29	9:00		SMW-4	13		003	X	X	X	X	X	X	X	X	X	X					
9/29	9:20		MW-2	13		004	X	X	X	X	X	X	X	X	X	X					
9/29	9:40		MW-5	13		005	X	X	X	X	X	X	X	X	X	X					
9/29	—		DUP-9-29-22	13		006	X	X	X	X	X	X	X	X	X	X					
9/29	9:40		FB-9-29-22	3		007	X	X	X												
			Trip Blank			008															

Time:	Relinquished by:	Received by:	Via:	Date	Time
9/29	Hilario Trejo				
Time:	Relinquished by:	Received by:	Via:	Date	Time
			courier	9/30/22	7:30

0.8+0.2 = 1.0
1.5+0.2 = 1.7
0.4+0.2 = 0.6

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Received by OCD: 4/21/2023 9:21:57 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 18, 2022

Lesli Alexander

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX: (505) 632-3911

RE: 2022 GW Sampling 3rd Quarter OrderNo.: 2209H72

Dear Lesli Alexander:

Hall Environmental Analysis Laboratory received 9 sample(s) on 9/30/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **2209H72**
Date: **10/18/2022**

CLIENT: Marathon
Project: 2022 GW Sampling 3rd Quarter

Analytical Notes Regarding this Workorder are listed below:

"S" flagged surrogates denote that the analyte recovery was outstide of the standard limits due to matrix interferences.

Analytical Notes Regarding EPA Method 8270 and 8270 SIMS:
1-Methylnaphthalene was reported by EPA Method 8270 instead of EPA Method 8270SIMs becuase of their elevated concentrations for sample OW-14.

Analytical Notes Regarding EPA Method 8270SIMS:
The LCSD had elevated recoveries for the "S" flagged compounds

Analytical Notes Regarding EPA Method 8015D DRO/MRO:
The LCS had elevated recovery. The LCSD had elevated recovery due to sample carryover.

Analytical Report
Lab Order: **2209H72**
Date Reported: **10/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-9-30-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/30/2022 7:45:00 AM
Lab ID: 2209H72-001A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	10/3/2022 7:07:00 PM	R91497
Surr: BFB	101	0	70-130		%Rec	1	10/3/2022 7:07:00 PM	R91497
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	10/6/2022 9:37:00 PM	R91600
Toluene	ND	0.20	1.0		µg/L	1	10/6/2022 9:37:00 PM	R91600
Ethylbenzene	ND	0.21	1.0		µg/L	1	10/6/2022 9:37:00 PM	R91600
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	10/6/2022 9:37:00 PM	R91600
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	10/6/2022 9:37:00 PM	R91600
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 9:37:00 PM	R91600
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	10/6/2022 9:37:00 PM	R91600
Acetone	7.0	2.5	10	J	µg/L	1	10/6/2022 9:37:00 PM	R91600
Bromomethane	ND	0.85	3.0		µg/L	1	10/6/2022 9:37:00 PM	R91600
2-Butanone	ND	2.0	10		µg/L	1	10/6/2022 9:37:00 PM	R91600
Carbon disulfide	ND	0.59	10		µg/L	1	10/6/2022 9:37:00 PM	R91600
Chlorobenzene	ND	0.16	1.0		µg/L	1	10/6/2022 9:37:00 PM	R91600
Chloroform	ND	0.13	1.0		µg/L	1	10/6/2022 9:37:00 PM	R91600
Chloromethane	ND	0.41	3.0		µg/L	1	10/6/2022 9:37:00 PM	R91600
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	10/6/2022 9:37:00 PM	R91600
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	10/6/2022 9:37:00 PM	R91600
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	10/6/2022 9:37:00 PM	R91600
Isopropylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 9:37:00 PM	R91600
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	10/6/2022 9:37:00 PM	R91600
Methylene Chloride	ND	0.50	3.0		µg/L	1	10/6/2022 9:37:00 PM	R91600
n-Butylbenzene	ND	0.25	3.0		µg/L	1	10/6/2022 9:37:00 PM	R91600
n-Propylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 9:37:00 PM	R91600
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	10/6/2022 9:37:00 PM	R91600
Styrene	ND	0.14	1.0		µg/L	1	10/6/2022 9:37:00 PM	R91600
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	10/6/2022 9:37:00 PM	R91600
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	10/6/2022 9:37:00 PM	R91600
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	10/6/2022 9:37:00 PM	R91600
Vinyl chloride	ND	0.32	1.0		µg/L	1	10/6/2022 9:37:00 PM	R91600
Xylenes, Total	0.43	0.37	1.5	J	µg/L	1	10/6/2022 9:37:00 PM	R91600
Surr: 1,2-Dichloroethane-d4	99.9	0	70-130		%Rec	1	10/6/2022 9:37:00 PM	R91600
Surr: 4-Bromofluorobenzene	94.3	0	70-130		%Rec	1	10/6/2022 9:37:00 PM	R91600
Surr: Dibromofluoromethane	101	0	70-130		%Rec	1	10/6/2022 9:37:00 PM	R91600
Surr: Toluene-d8	95.0	0	70-130		%Rec	1	10/6/2022 9:37:00 PM	R91600

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H72**
Date Reported: **10/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Project: 2022 GW Sampling 3rd Quarter
Lab ID: 2209H72-001B

Client Sample ID: EB-9-30-22
Collection Date: 9/30/2022 7:45:00 AM
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0093		µg/L	1	10/5/2022 12:22:44 AM	70550

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H72**
Date Reported: **10/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-9-30-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/30/2022 7:45:00 AM
Lab ID: 2209H72-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **mb**	
Diesel Range Organics (DRO)	ND	0.016	0.064		mg/L	1	10/4/2022 7:51:42 PM	70553
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	10/4/2022 7:51:42 PM	70553
Surr: DNOP	87.9	0	42.2-138		%Rec	1	10/4/2022 7:51:42 PM	70553
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	10/13/2022 4:16:33 PM	70583
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	10/13/2022 4:16:33 PM	70583
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	10/13/2022 4:16:33 PM	70583
Di-n-octyl phthalate	ND	12	20		µg/L	1	10/13/2022 4:16:33 PM	70583
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	10/13/2022 4:16:33 PM	70583
Diethyl phthalate	ND	6.0	10		µg/L	1	10/13/2022 4:16:33 PM	70583
Dimethyl phthalate	ND	6.0	10		µg/L	1	10/13/2022 4:16:33 PM	70583
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	10/13/2022 4:16:33 PM	70583
2,4-Dinitrophenol	ND	16	20		µg/L	1	10/13/2022 4:16:33 PM	70583
2-Methylphenol	ND	5.0	10		µg/L	1	10/13/2022 4:16:33 PM	70583
3+4-Methylphenol	ND	5.1	10		µg/L	1	10/13/2022 4:16:33 PM	70583
Phenol	ND	18	20		µg/L	1	10/13/2022 4:16:33 PM	70583
Pyridine	ND	14	40		µg/L	1	10/13/2022 4:16:33 PM	70583
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	10/13/2022 4:16:33 PM	70583
Surr: 2-Fluorophenol	51.8	0	15-84.5		%Rec	1	10/13/2022 4:16:33 PM	70583
Surr: Phenol-d5	39.8	0	15-67		%Rec	1	10/13/2022 4:16:33 PM	70583
Surr: 2,4,6-Tribromophenol	58.6	0	15-108		%Rec	1	10/13/2022 4:16:33 PM	70583
Surr: Nitrobenzene-d5	58.9	0	16.8-112		%Rec	1	10/13/2022 4:16:33 PM	70583
Surr: 2-Fluorobiphenyl	57.6	0	15-101		%Rec	1	10/13/2022 4:16:33 PM	70583
Surr: 4-Terphenyl-d14	77.5	0	34.4-134		%Rec	1	10/13/2022 4:16:33 PM	70583
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	10/5/2022 1:23:00 PM	70583
Naphthalene	ND	0.20	0.30		µg/L	1	10/5/2022 1:23:00 PM	70583
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	10/5/2022 1:23:00 PM	70583
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	10/5/2022 1:23:00 PM	70583
Acenaphthene	ND	0.14	0.30		µg/L	1	10/5/2022 1:23:00 PM	70583
Fluorene	ND	0.095	0.30		µg/L	1	10/5/2022 1:23:00 PM	70583
Phenanthrene	ND	0.16	0.30		µg/L	1	10/5/2022 1:23:00 PM	70583
Anthracene	ND	0.14	0.30		µg/L	1	10/5/2022 1:23:00 PM	70583
Fluoranthene	ND	0.14	0.30		µg/L	1	10/5/2022 1:23:00 PM	70583
Pyrene	ND	0.32	1.0		µg/L	1	10/5/2022 1:23:00 PM	70583
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	10/5/2022 1:23:00 PM	70583
Chrysene	ND	0.25	0.30		µg/L	1	10/5/2022 1:23:00 PM	70583
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	10/5/2022 1:23:00 PM	70583
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	10/5/2022 1:23:00 PM	70583

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H72**
Date Reported: **10/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-9-30-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/30/2022 7:45:00 AM
Lab ID: 2209H72-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	77.2	0	15-108		%Rec	1	10/5/2022 1:23:00 PM	70583
Surr: 2-Fluorobiphenyl	66.9	0	15-107		%Rec	1	10/5/2022 1:23:00 PM	70583
Surr: 4-Terphenyl-d14	75.2	0	15-166		%Rec	1	10/5/2022 1:23:00 PM	70583

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H72**
Date Reported: **10/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-9-30-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/30/2022 7:45:00 AM
Lab ID: 2209H72-001D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	ND	0.0016	0.0030		mg/L	1	10/4/2022 12:04:45 PM	70537
Beryllium	ND	0.00088	0.0020		mg/L	1	10/4/2022 12:04:45 PM	70537
Cadmium	ND	0.0018	0.0020		mg/L	1	10/4/2022 12:04:45 PM	70537
Chromium	ND	0.0020	0.0060		mg/L	1	10/4/2022 12:04:45 PM	70537
Cobalt	ND	0.0035	0.0060		mg/L	1	10/4/2022 12:04:45 PM	70537
Nickel	ND	0.0053	0.010		mg/L	1	10/4/2022 12:04:45 PM	70537
Silver	ND	0.0018	0.0050		mg/L	1	10/5/2022 3:42:09 PM	70537
Vanadium	ND	0.0035	0.050		mg/L	1	10/4/2022 12:04:45 PM	70537
Zinc	ND	0.0039	0.010		mg/L	1	10/4/2022 12:04:45 PM	70537
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	10/6/2022 3:33:06 PM	70537
Arsenic	ND	0.00022	0.0010		mg/L	1	10/5/2022 4:20:54 PM	70537
Lead	ND	0.00019	0.00050		mg/L	1	10/6/2022 3:33:06 PM	70537
Selenium	ND	0.00089	0.0010		mg/L	1	10/10/2022 3:44:57 PM	70537
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	10/6/2022 12:42:49 PM	70628

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H72**
Date Reported: **10/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-9-30-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/30/2022 7:45:00 AM
Lab ID: 2209H72-001E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	ND	0.0011	0.0020		mg/L	1	10/4/2022 6:00:52 PM	C91551
Beryllium	ND	0.00088	0.0020		mg/L	1	10/4/2022 6:00:52 PM	C91551
Cadmium	ND	0.00098	0.0020		mg/L	1	10/4/2022 6:00:52 PM	C91551
Chromium	ND	0.0020	0.0060		mg/L	1	10/4/2022 6:00:52 PM	C91551
Cobalt	ND	0.0024	0.0060		mg/L	1	10/4/2022 6:00:52 PM	C91551
Nickel	ND	0.0033	0.010		mg/L	1	10/4/2022 6:00:52 PM	C91551
Silver	ND	0.0013	0.0050		mg/L	1	10/4/2022 6:00:52 PM	C91551
Vanadium	ND	0.0017	0.050		mg/L	1	10/4/2022 6:00:52 PM	C91551
Zinc	0.0062	0.0032	0.010	J	mg/L	1	10/4/2022 6:00:52 PM	C91551
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	10/4/2022 12:27:38 PM	A91522
Arsenic	ND	0.00012	0.0010		mg/L	1	10/4/2022 12:27:38 PM	A91522
Lead	ND	0.000057	0.00050		mg/L	1	10/4/2022 12:27:38 PM	A91522
Selenium	ND	0.00034	0.0010		mg/L	1	10/4/2022 12:27:38 PM	A91522
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	10/6/2022 12:44:58 PM	70628

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H72**
Date Reported: **10/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MW-4
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/30/2022 7:55:00 AM
Lab ID: 2209H72-002A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	10/3/2022 7:26:00 PM	R91497
Surr: BFB	103	0	70-130		%Rec	1	10/3/2022 7:26:00 PM	R91497
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	10/6/2022 10:00:00 PM	R91600
Toluene	ND	0.20	1.0		µg/L	1	10/6/2022 10:00:00 PM	R91600
Ethylbenzene	ND	0.21	1.0		µg/L	1	10/6/2022 10:00:00 PM	R91600
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	10/6/2022 10:00:00 PM	R91600
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	10/6/2022 10:00:00 PM	R91600
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 10:00:00 PM	R91600
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	10/6/2022 10:00:00 PM	R91600
Acetone	ND	2.5	10		µg/L	1	10/6/2022 10:00:00 PM	R91600
Bromomethane	ND	0.85	3.0		µg/L	1	10/6/2022 10:00:00 PM	R91600
2-Butanone	ND	2.0	10		µg/L	1	10/6/2022 10:00:00 PM	R91600
Carbon disulfide	ND	0.59	10		µg/L	1	10/6/2022 10:00:00 PM	R91600
Chlorobenzene	ND	0.16	1.0		µg/L	1	10/6/2022 10:00:00 PM	R91600
Chloroform	ND	0.13	1.0		µg/L	1	10/6/2022 10:00:00 PM	R91600
Chloromethane	ND	0.41	3.0		µg/L	1	10/6/2022 10:00:00 PM	R91600
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	10/6/2022 10:00:00 PM	R91600
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	10/6/2022 10:00:00 PM	R91600
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	10/6/2022 10:00:00 PM	R91600
Isopropylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 10:00:00 PM	R91600
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	10/6/2022 10:00:00 PM	R91600
Methylene Chloride	ND	0.50	3.0		µg/L	1	10/6/2022 10:00:00 PM	R91600
n-Butylbenzene	ND	0.25	3.0		µg/L	1	10/6/2022 10:00:00 PM	R91600
n-Propylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 10:00:00 PM	R91600
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	10/6/2022 10:00:00 PM	R91600
Styrene	ND	0.14	1.0		µg/L	1	10/6/2022 10:00:00 PM	R91600
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	10/6/2022 10:00:00 PM	R91600
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	10/6/2022 10:00:00 PM	R91600
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	10/6/2022 10:00:00 PM	R91600
Vinyl chloride	ND	0.32	1.0		µg/L	1	10/6/2022 10:00:00 PM	R91600
Xylenes, Total	ND	0.37	1.5		µg/L	1	10/6/2022 10:00:00 PM	R91600
Surr: 1,2-Dichloroethane-d4	99.8	0	70-130		%Rec	1	10/6/2022 10:00:00 PM	R91600
Surr: 4-Bromofluorobenzene	99.3	0	70-130		%Rec	1	10/6/2022 10:00:00 PM	R91600
Surr: Dibromofluoromethane	101	0	70-130		%Rec	1	10/6/2022 10:00:00 PM	R91600
Surr: Toluene-d8	94.3	0	70-130		%Rec	1	10/6/2022 10:00:00 PM	R91600

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H72**
Date Reported: **10/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MW-4
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/30/2022 7:55:00 AM
Lab ID: 2209H72-002B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	10/5/2022 12:52:45 AM	70550

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H72**
Date Reported: **10/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MW-4
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/30/2022 7:55:00 AM
Lab ID: 2209H72-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **mb**	
Diesel Range Organics (DRO)	0.020	0.016	0.064	J	mg/L	1	10/4/2022 8:15:53 PM	70553
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	10/4/2022 8:15:53 PM	70553
Surr: DNOP	83.8	0	42.2-138		%Rec	1	10/4/2022 8:15:53 PM	70553
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	10/13/2022 4:58:09 PM	70583
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	10/13/2022 4:58:09 PM	70583
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	10/13/2022 4:58:09 PM	70583
Di-n-octyl phthalate	ND	12	20		µg/L	1	10/13/2022 4:58:09 PM	70583
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	10/13/2022 4:58:09 PM	70583
Diethyl phthalate	ND	6.0	10		µg/L	1	10/13/2022 4:58:09 PM	70583
Dimethyl phthalate	ND	6.0	10		µg/L	1	10/13/2022 4:58:09 PM	70583
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	10/13/2022 4:58:09 PM	70583
2,4-Dinitrophenol	ND	16	20		µg/L	1	10/13/2022 4:58:09 PM	70583
2-Methylphenol	ND	5.0	10		µg/L	1	10/13/2022 4:58:09 PM	70583
3+4-Methylphenol	ND	5.1	10		µg/L	1	10/13/2022 4:58:09 PM	70583
Phenol	ND	18	20		µg/L	1	10/13/2022 4:58:09 PM	70583
Pyridine	ND	14	40		µg/L	1	10/13/2022 4:58:09 PM	70583
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	10/13/2022 4:58:09 PM	70583
Surr: 2-Fluorophenol	46.7	0	15-84.5		%Rec	1	10/13/2022 4:58:09 PM	70583
Surr: Phenol-d5	35.1	0	15-67		%Rec	1	10/13/2022 4:58:09 PM	70583
Surr: 2,4,6-Tribromophenol	58.5	0	15-108		%Rec	1	10/13/2022 4:58:09 PM	70583
Surr: Nitrobenzene-d5	57.3	0	16.8-112		%Rec	1	10/13/2022 4:58:09 PM	70583
Surr: 2-Fluorobiphenyl	58.3	0	15-101		%Rec	1	10/13/2022 4:58:09 PM	70583
Surr: 4-Terphenyl-d14	75.0	0	34.4-134		%Rec	1	10/13/2022 4:58:09 PM	70583
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	10/5/2022 2:08:00 PM	70583
Naphthalene	ND	0.20	0.30		µg/L	1	10/5/2022 2:08:00 PM	70583
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	10/5/2022 2:08:00 PM	70583
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	10/5/2022 2:08:00 PM	70583
Acenaphthene	ND	0.14	0.30		µg/L	1	10/5/2022 2:08:00 PM	70583
Fluorene	ND	0.095	0.30		µg/L	1	10/5/2022 2:08:00 PM	70583
Phenanthrene	ND	0.16	0.30		µg/L	1	10/5/2022 2:08:00 PM	70583
Anthracene	ND	0.14	0.30		µg/L	1	10/5/2022 2:08:00 PM	70583
Fluoranthene	ND	0.14	0.30		µg/L	1	10/5/2022 2:08:00 PM	70583
Pyrene	ND	0.32	1.0		µg/L	1	10/5/2022 2:08:00 PM	70583
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	10/5/2022 2:08:00 PM	70583
Chrysene	ND	0.25	0.30		µg/L	1	10/5/2022 2:08:00 PM	70583
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	10/5/2022 2:08:00 PM	70583
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	10/5/2022 2:08:00 PM	70583

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H72**
Date Reported: **10/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MW-4
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/30/2022 7:55:00 AM
Lab ID: 2209H72-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	70.1	0	15-108		%Rec	1	10/5/2022 2:08:00 PM	70583
Surr: 2-Fluorobiphenyl	61.4	0	15-107		%Rec	1	10/5/2022 2:08:00 PM	70583
Surr: 4-Terphenyl-d14	71.0	0	15-166		%Rec	1	10/5/2022 2:08:00 PM	70583

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H72**
Date Reported: **10/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MW-4
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/30/2022 7:55:00 AM
Lab ID: 2209H72-002D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.021	0.0016	0.0030		mg/L	1	10/4/2022 12:09:21 PM	70537
Beryllium	ND	0.00088	0.0020		mg/L	1	10/4/2022 12:09:21 PM	70537
Cadmium	ND	0.0018	0.0020		mg/L	1	10/4/2022 12:09:21 PM	70537
Chromium	0.0036	0.0020	0.0060	J	mg/L	1	10/4/2022 12:09:21 PM	70537
Cobalt	ND	0.0035	0.0060		mg/L	1	10/4/2022 12:09:21 PM	70537
Nickel	ND	0.0053	0.010		mg/L	1	10/4/2022 12:09:21 PM	70537
Silver	ND	0.0018	0.0050		mg/L	1	10/5/2022 3:48:29 PM	70537
Vanadium	ND	0.0035	0.050		mg/L	1	10/4/2022 12:09:21 PM	70537
Zinc	ND	0.0039	0.010		mg/L	1	10/4/2022 12:09:21 PM	70537
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	10/6/2022 3:35:33 PM	70537
Arsenic	0.00068	0.00022	0.0010	J	mg/L	1	10/5/2022 4:23:20 PM	70537
Lead	ND	0.00019	0.00050		mg/L	1	10/6/2022 3:35:33 PM	70537
Selenium	ND	0.00089	0.0010		mg/L	1	10/10/2022 3:47:23 PM	70537
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	10/6/2022 12:47:07 PM	70628

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H72**
Date Reported: **10/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MW-4
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/30/2022 7:55:00 AM
Lab ID: 2209H72-002E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.021	0.0011	0.0020		mg/L	1	10/4/2022 6:13:42 PM	C91551
Beryllium	ND	0.00088	0.0020		mg/L	1	10/4/2022 6:13:42 PM	C91551
Cadmium	ND	0.00098	0.0020		mg/L	1	10/4/2022 6:13:42 PM	C91551
Chromium	ND	0.0020	0.0060		mg/L	1	10/4/2022 6:13:42 PM	C91551
Cobalt	ND	0.0024	0.0060		mg/L	1	10/4/2022 6:13:42 PM	C91551
Nickel	ND	0.0033	0.010		mg/L	1	10/4/2022 6:13:42 PM	C91551
Silver	ND	0.0013	0.0050		mg/L	1	10/4/2022 6:13:42 PM	C91551
Vanadium	ND	0.0017	0.050		mg/L	1	10/4/2022 6:13:42 PM	C91551
Zinc	0.026	0.0032	0.010		mg/L	1	10/4/2022 6:13:42 PM	C91551
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	10/4/2022 12:30:20 PM	A91522
Arsenic	0.00072	0.00012	0.0010	J	mg/L	1	10/4/2022 12:30:20 PM	A91522
Lead	ND	0.000057	0.00050		mg/L	1	10/4/2022 12:30:20 PM	A91522
Selenium	ND	0.00034	0.0010		mg/L	1	10/4/2022 12:30:20 PM	A91522
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.000098	0.000091	0.00020	J	mg/L	1	10/6/2022 12:49:17 PM	70628

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H72**
Date Reported: **10/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SMW-2
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/30/2022 8:15:00 AM
Lab ID: 2209H72-003A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.11	0.0090	0.050		mg/L	1	10/3/2022 7:46:00 PM	R91497
Surr: BFB	1020	0	70-130	S	%Rec	1	10/3/2022 7:46:00 PM	R91497
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	10/6/2022 10:23:00 PM	R91600
Toluene	ND	0.20	1.0		µg/L	1	10/6/2022 10:23:00 PM	R91600
Ethylbenzene	ND	0.21	1.0		µg/L	1	10/6/2022 10:23:00 PM	R91600
Methyl tert-butyl ether (MTBE)	9.3	0.39	1.0		µg/L	1	10/6/2022 10:23:00 PM	R91600
1,2,4-Trimethylbenzene	0.21	0.12	1.0	J	µg/L	1	10/6/2022 10:23:00 PM	R91600
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 10:23:00 PM	R91600
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	10/6/2022 10:23:00 PM	R91600
Acetone	ND	2.5	10		µg/L	1	10/6/2022 10:23:00 PM	R91600
Bromomethane	ND	0.85	3.0		µg/L	1	10/6/2022 10:23:00 PM	R91600
2-Butanone	ND	2.0	10		µg/L	1	10/6/2022 10:23:00 PM	R91600
Carbon disulfide	ND	0.59	10		µg/L	1	10/6/2022 10:23:00 PM	R91600
Chlorobenzene	ND	0.16	1.0		µg/L	1	10/6/2022 10:23:00 PM	R91600
Chloroform	ND	0.13	1.0		µg/L	1	10/6/2022 10:23:00 PM	R91600
Chloromethane	ND	0.41	3.0		µg/L	1	10/6/2022 10:23:00 PM	R91600
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	10/6/2022 10:23:00 PM	R91600
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	10/6/2022 10:23:00 PM	R91600
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	10/6/2022 10:23:00 PM	R91600
Isopropylbenzene	0.27	0.18	1.0	J	µg/L	1	10/6/2022 10:23:00 PM	R91600
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	10/6/2022 10:23:00 PM	R91600
Methylene Chloride	ND	0.50	3.0		µg/L	1	10/6/2022 10:23:00 PM	R91600
n-Butylbenzene	ND	0.25	3.0		µg/L	1	10/6/2022 10:23:00 PM	R91600
n-Propylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 10:23:00 PM	R91600
sec-Butylbenzene	0.20	0.14	1.0	J	µg/L	1	10/6/2022 10:23:00 PM	R91600
Styrene	ND	0.14	1.0		µg/L	1	10/6/2022 10:23:00 PM	R91600
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	10/6/2022 10:23:00 PM	R91600
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	10/6/2022 10:23:00 PM	R91600
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	10/6/2022 10:23:00 PM	R91600
Vinyl chloride	ND	0.32	1.0		µg/L	1	10/6/2022 10:23:00 PM	R91600
Xylenes, Total	ND	0.37	1.5		µg/L	1	10/6/2022 10:23:00 PM	R91600
Surr: 1,2-Dichloroethane-d4	99.6	0	70-130		%Rec	1	10/6/2022 10:23:00 PM	R91600
Surr: 4-Bromofluorobenzene	110	0	70-130		%Rec	1	10/6/2022 10:23:00 PM	R91600
Surr: Dibromofluoromethane	98.4	0	70-130		%Rec	1	10/6/2022 10:23:00 PM	R91600
Surr: Toluene-d8	90.2	0	70-130		%Rec	1	10/6/2022 10:23:00 PM	R91600

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H72**
Date Reported: **10/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SMW-2
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/30/2022 8:15:00 AM
Lab ID: 2209H72-003B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	10/10/2022 1:01:01 PM	70551

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H72**
Date Reported: **10/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SMW-2
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/30/2022 8:15:00 AM
Lab ID: 2209H72-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **mb**	
Diesel Range Organics (DRO)	0.34	0.016	0.064		mg/L	1	10/4/2022 8:40:01 PM	70553
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	10/4/2022 8:40:01 PM	70553
Surr: DNOP	88.4	0	42.2-138		%Rec	1	10/4/2022 8:40:01 PM	70553
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	10/13/2022 5:39:55 PM	70583
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	10/13/2022 5:39:55 PM	70583
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	10/13/2022 5:39:55 PM	70583
Di-n-octyl phthalate	ND	12	20		µg/L	1	10/13/2022 5:39:55 PM	70583
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	10/13/2022 5:39:55 PM	70583
Diethyl phthalate	ND	6.0	10		µg/L	1	10/13/2022 5:39:55 PM	70583
Dimethyl phthalate	ND	6.0	10		µg/L	1	10/13/2022 5:39:55 PM	70583
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	10/13/2022 5:39:55 PM	70583
2,4-Dinitrophenol	ND	16	20		µg/L	1	10/13/2022 5:39:55 PM	70583
2-Methylphenol	ND	5.0	10		µg/L	1	10/13/2022 5:39:55 PM	70583
3+4-Methylphenol	ND	5.1	10		µg/L	1	10/13/2022 5:39:55 PM	70583
Phenol	ND	18	20		µg/L	1	10/13/2022 5:39:55 PM	70583
Pyridine	ND	14	40		µg/L	1	10/13/2022 5:39:55 PM	70583
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	10/13/2022 5:39:55 PM	70583
Surr: 2-Fluorophenol	20.1	0	15-84.5		%Rec	1	10/13/2022 5:39:55 PM	70583
Surr: Phenol-d5	30.8	0	15-67		%Rec	1	10/13/2022 5:39:55 PM	70583
Surr: 2,4,6-Tribromophenol	10.0	0	15-108	S	%Rec	1	10/13/2022 5:39:55 PM	70583
Surr: Nitrobenzene-d5	57.1	0	16.8-112		%Rec	1	10/13/2022 5:39:55 PM	70583
Surr: 2-Fluorobiphenyl	56.8	0	15-101		%Rec	1	10/13/2022 5:39:55 PM	70583
Surr: 4-Terphenyl-d14	73.7	0	34.4-134		%Rec	1	10/13/2022 5:39:55 PM	70583
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	8.3	0.11	1.0		µg/L	1	10/5/2022 2:54:00 PM	70583
Naphthalene	ND	0.20	0.30		µg/L	1	10/5/2022 2:54:00 PM	70583
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	10/5/2022 2:54:00 PM	70583
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	10/5/2022 2:54:00 PM	70583
Acenaphthene	ND	0.14	0.30		µg/L	1	10/5/2022 2:54:00 PM	70583
Fluorene	ND	0.095	0.30		µg/L	1	10/5/2022 2:54:00 PM	70583
Phenanthrene	ND	0.16	0.30		µg/L	1	10/5/2022 2:54:00 PM	70583
Anthracene	ND	0.14	0.30		µg/L	1	10/5/2022 2:54:00 PM	70583
Fluoranthene	ND	0.14	0.30		µg/L	1	10/5/2022 2:54:00 PM	70583
Pyrene	ND	0.32	1.0		µg/L	1	10/5/2022 2:54:00 PM	70583
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	10/5/2022 2:54:00 PM	70583
Chrysene	ND	0.25	0.30		µg/L	1	10/5/2022 2:54:00 PM	70583
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	10/5/2022 2:54:00 PM	70583
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	10/5/2022 2:54:00 PM	70583

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H72**
Date Reported: **10/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SMW-2
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/30/2022 8:15:00 AM
Lab ID: 2209H72-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	67.0	0	15-108		%Rec	1	10/5/2022 2:54:00 PM	70583
Surr: 2-Fluorobiphenyl	55.3	0	15-107		%Rec	1	10/5/2022 2:54:00 PM	70583
Surr: 4-Terphenyl-d14	61.3	0	15-166		%Rec	1	10/5/2022 2:54:00 PM	70583

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H72**
Date Reported: **10/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SMW-2
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/30/2022 8:15:00 AM
Lab ID: 2209H72-003D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.026	0.0016	0.0030		mg/L	1	10/4/2022 12:13:59 PM	70537
Beryllium	ND	0.00088	0.0020		mg/L	1	10/4/2022 12:13:59 PM	70537
Cadmium	ND	0.0018	0.0020		mg/L	1	10/4/2022 12:13:59 PM	70537
Chromium	0.022	0.0020	0.0060		mg/L	1	10/5/2022 3:50:05 PM	70537
Cobalt	0.013	0.0035	0.0060		mg/L	1	10/4/2022 12:13:59 PM	70537
Nickel	0.042	0.0053	0.010		mg/L	1	10/4/2022 12:13:59 PM	70537
Silver	0.0057	0.0018	0.0050		mg/L	1	10/5/2022 3:50:05 PM	70537
Vanadium	ND	0.0035	0.050		mg/L	1	10/4/2022 12:13:59 PM	70537
Zinc	ND	0.0039	0.010		mg/L	1	10/5/2022 3:50:05 PM	70537
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	10/6/2022 3:37:59 PM	70537
Arsenic	0.0019	0.00022	0.0010		mg/L	1	10/5/2022 4:25:46 PM	70537
Lead	0.00064	0.00019	0.00050		mg/L	1	10/6/2022 3:37:59 PM	70537
Selenium	ND	0.00089	0.0010		mg/L	1	10/10/2022 3:49:50 PM	70537
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	10/6/2022 12:51:25 PM	70628

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H72**
Date Reported: **10/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SMW-2
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/30/2022 8:15:00 AM
Lab ID: 2209H72-003E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.015	0.0011	0.0020		mg/L	1	10/4/2022 6:17:43 PM	C91551
Beryllium	ND	0.00088	0.0020		mg/L	1	10/4/2022 6:17:43 PM	C91551
Cadmium	ND	0.00098	0.0020		mg/L	1	10/4/2022 6:17:43 PM	C91551
Chromium	ND	0.0020	0.0060		mg/L	1	10/4/2022 6:17:43 PM	C91551
Cobalt	ND	0.0024	0.0060		mg/L	1	10/4/2022 6:17:43 PM	C91551
Nickel	0.041	0.0033	0.010		mg/L	1	10/4/2022 6:17:43 PM	C91551
Silver	0.0078	0.0013	0.0050		mg/L	1	10/4/2022 6:17:43 PM	C91551
Vanadium	ND	0.0017	0.050		mg/L	1	10/4/2022 6:17:43 PM	C91551
Zinc	0.020	0.0032	0.010		mg/L	1	10/4/2022 6:17:43 PM	C91551
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	10/4/2022 12:33:01 PM	A91522
Arsenic	0.0021	0.00012	0.0010		mg/L	1	10/4/2022 12:33:01 PM	A91522
Lead	0.000058	0.000057	0.00050	J	mg/L	1	10/4/2022 12:33:01 PM	A91522
Selenium	ND	0.00034	0.0010		mg/L	1	10/4/2022 12:33:01 PM	A91522
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	10/6/2022 12:53:35 PM	70628

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H72**
Date Reported: **10/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-59
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/30/2022 8:30:00 AM
Lab ID: 2209H72-004A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.28	0.0090	0.050		mg/L	1	10/3/2022 8:05:00 PM	R91497
Surr: BFB	6210	0	70-130	S	%Rec	1	10/3/2022 8:05:00 PM	R91497
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	10/6/2022 10:46:00 PM	R91600
Toluene	ND	0.20	1.0		µg/L	1	10/6/2022 10:46:00 PM	R91600
Ethylbenzene	ND	0.21	1.0		µg/L	1	10/6/2022 10:46:00 PM	R91600
Methyl tert-butyl ether (MTBE)	10	0.39	1.0		µg/L	1	10/6/2022 10:46:00 PM	R91600
1,2,4-Trimethylbenzene	0.27	0.12	1.0	J	µg/L	1	10/6/2022 10:46:00 PM	R91600
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 10:46:00 PM	R91600
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	10/6/2022 10:46:00 PM	R91600
Acetone	ND	2.5	10		µg/L	1	10/6/2022 10:46:00 PM	R91600
Bromomethane	ND	0.85	3.0		µg/L	1	10/6/2022 10:46:00 PM	R91600
2-Butanone	ND	2.0	10		µg/L	1	10/6/2022 10:46:00 PM	R91600
Carbon disulfide	ND	0.59	10		µg/L	1	10/6/2022 10:46:00 PM	R91600
Chlorobenzene	ND	0.16	1.0		µg/L	1	10/6/2022 10:46:00 PM	R91600
Chloroform	ND	0.13	1.0		µg/L	1	10/6/2022 10:46:00 PM	R91600
Chloromethane	ND	0.41	3.0		µg/L	1	10/6/2022 10:46:00 PM	R91600
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	10/6/2022 10:46:00 PM	R91600
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	10/6/2022 10:46:00 PM	R91600
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	10/6/2022 10:46:00 PM	R91600
Isopropylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 10:46:00 PM	R91600
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	10/6/2022 10:46:00 PM	R91600
Methylene Chloride	ND	0.50	3.0		µg/L	1	10/6/2022 10:46:00 PM	R91600
n-Butylbenzene	ND	0.25	3.0		µg/L	1	10/6/2022 10:46:00 PM	R91600
n-Propylbenzene	ND	0.18	1.0		µg/L	1	10/6/2022 10:46:00 PM	R91600
sec-Butylbenzene	0.23	0.14	1.0	J	µg/L	1	10/6/2022 10:46:00 PM	R91600
Styrene	ND	0.14	1.0		µg/L	1	10/6/2022 10:46:00 PM	R91600
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	10/6/2022 10:46:00 PM	R91600
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	10/6/2022 10:46:00 PM	R91600
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	10/6/2022 10:46:00 PM	R91600
Vinyl chloride	ND	0.32	1.0		µg/L	1	10/6/2022 10:46:00 PM	R91600
Xylenes, Total	ND	0.37	1.5		µg/L	1	10/6/2022 10:46:00 PM	R91600
Surr: 1,2-Dichloroethane-d4	98.3	0	70-130		%Rec	1	10/6/2022 10:46:00 PM	R91600
Surr: 4-Bromofluorobenzene	105	0	70-130		%Rec	1	10/6/2022 10:46:00 PM	R91600
Surr: Dibromofluoromethane	99.2	0	70-130		%Rec	1	10/6/2022 10:46:00 PM	R91600
Surr: Toluene-d8	90.0	0	70-130		%Rec	1	10/6/2022 10:46:00 PM	R91600

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H72**
Date Reported: **10/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-59
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/30/2022 8:30:00 AM
Lab ID: 2209H72-004B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	10/10/2022 1:30:48 PM	70551

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H72**
Date Reported: **10/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-59
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/30/2022 8:30:00 AM
Lab ID: 2209H72-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **mb**	
Diesel Range Organics (DRO)	0.39	0.016	0.064		mg/L	1	10/4/2022 9:04:13 PM	70553
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	10/4/2022 9:04:13 PM	70553
Surr: DNOP	85.6	0	42.2-138		%Rec	1	10/4/2022 9:04:13 PM	70553
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	10/13/2022 6:22:37 PM	70583
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	10/13/2022 6:22:37 PM	70583
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	10/13/2022 6:22:37 PM	70583
Di-n-octyl phthalate	ND	12	20		µg/L	1	10/13/2022 6:22:37 PM	70583
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	10/13/2022 6:22:37 PM	70583
Diethyl phthalate	ND	6.0	10		µg/L	1	10/13/2022 6:22:37 PM	70583
Dimethyl phthalate	ND	6.0	10		µg/L	1	10/13/2022 6:22:37 PM	70583
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	10/13/2022 6:22:37 PM	70583
2,4-Dinitrophenol	ND	16	20		µg/L	1	10/13/2022 6:22:37 PM	70583
2-Methylphenol	ND	5.0	10		µg/L	1	10/13/2022 6:22:37 PM	70583
3+4-Methylphenol	ND	5.1	10		µg/L	1	10/13/2022 6:22:37 PM	70583
Phenol	ND	18	20		µg/L	1	10/13/2022 6:22:37 PM	70583
Pyridine	ND	14	40		µg/L	1	10/13/2022 6:22:37 PM	70583
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	10/13/2022 6:22:37 PM	70583
Surr: 2-Fluorophenol	43.0	0	15-84.5		%Rec	1	10/13/2022 6:22:37 PM	70583
Surr: Phenol-d5	38.7	0	15-67		%Rec	1	10/13/2022 6:22:37 PM	70583
Surr: 2,4,6-Tribromophenol	42.4	0	15-108		%Rec	1	10/13/2022 6:22:37 PM	70583
Surr: Nitrobenzene-d5	60.0	0	16.8-112		%Rec	1	10/13/2022 6:22:37 PM	70583
Surr: 2-Fluorobiphenyl	55.4	0	15-101		%Rec	1	10/13/2022 6:22:37 PM	70583
Surr: 4-Terphenyl-d14	72.8	0	34.4-134		%Rec	1	10/13/2022 6:22:37 PM	70583
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	6.4	0.11	1.0		µg/L	1	10/5/2022 3:39:00 PM	70583
Naphthalene	ND	0.20	0.30		µg/L	1	10/5/2022 3:39:00 PM	70583
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	10/5/2022 3:39:00 PM	70583
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	10/5/2022 3:39:00 PM	70583
Acenaphthene	ND	0.14	0.30		µg/L	1	10/5/2022 3:39:00 PM	70583
Fluorene	ND	0.095	0.30		µg/L	1	10/5/2022 3:39:00 PM	70583
Phenanthrene	ND	0.16	0.30		µg/L	1	10/5/2022 3:39:00 PM	70583
Anthracene	ND	0.14	0.30		µg/L	1	10/5/2022 3:39:00 PM	70583
Fluoranthene	ND	0.14	0.30		µg/L	1	10/5/2022 3:39:00 PM	70583
Pyrene	ND	0.32	1.0		µg/L	1	10/5/2022 3:39:00 PM	70583
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	10/5/2022 3:39:00 PM	70583
Chrysene	ND	0.25	0.30		µg/L	1	10/5/2022 3:39:00 PM	70583
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	10/5/2022 3:39:00 PM	70583
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	10/5/2022 3:39:00 PM	70583

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H72**
Date Reported: **10/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-59
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/30/2022 8:30:00 AM
Lab ID: 2209H72-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	72.8	0	15-108		%Rec	1	10/5/2022 3:39:00 PM	70583
Surr: 2-Fluorobiphenyl	57.5	0	15-107		%Rec	1	10/5/2022 3:39:00 PM	70583
Surr: 4-Terphenyl-d14	64.4	0	15-166		%Rec	1	10/5/2022 3:39:00 PM	70583

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H72**
Date Reported: **10/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-59
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/30/2022 8:30:00 AM
Lab ID: 2209H72-004D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.081	0.0016	0.0030		mg/L	1	10/4/2022 12:25:42 PM	70537
Beryllium	ND	0.00088	0.0020		mg/L	1	10/4/2022 12:25:42 PM	70537
Cadmium	ND	0.0018	0.0020		mg/L	1	10/4/2022 12:25:42 PM	70537
Chromium	ND	0.0020	0.0060		mg/L	1	10/4/2022 12:25:42 PM	70537
Cobalt	0.012	0.0035	0.0060		mg/L	1	10/4/2022 12:25:42 PM	70537
Nickel	0.031	0.0053	0.010		mg/L	1	10/4/2022 12:25:42 PM	70537
Silver	0.0023	0.0018	0.0050	J	mg/L	1	10/5/2022 3:51:33 PM	70537
Vanadium	0.014	0.0035	0.050	J	mg/L	1	10/4/2022 12:25:42 PM	70537
Zinc	0.0091	0.0039	0.010	J	mg/L	1	10/4/2022 12:25:42 PM	70537
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	10/6/2022 1:33:18 PM	70537
Arsenic	0.0048	0.00022	0.0010		mg/L	1	10/6/2022 1:33:18 PM	70537
Lead	0.0018	0.00019	0.00050		mg/L	1	10/6/2022 1:33:18 PM	70537
Selenium	0.0015	0.00089	0.0010		mg/L	1	10/6/2022 1:33:18 PM	70537
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	10/6/2022 12:55:43 PM	70628

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H72**
Date Reported: **10/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-59
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/30/2022 8:30:00 AM
Lab ID: 2209H72-004E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.011	0.0011	0.0020		mg/L	1	10/4/2022 6:28:41 PM	C91551
Beryllium	ND	0.00088	0.0020		mg/L	1	10/4/2022 6:28:41 PM	C91551
Cadmium	ND	0.00098	0.0020		mg/L	1	10/4/2022 6:28:41 PM	C91551
Chromium	ND	0.0020	0.0060		mg/L	1	10/4/2022 6:28:41 PM	C91551
Cobalt	ND	0.0024	0.0060		mg/L	1	10/4/2022 6:28:41 PM	C91551
Nickel	0.040	0.0033	0.010		mg/L	1	10/4/2022 6:28:41 PM	C91551
Silver	0.0048	0.0013	0.0050	J	mg/L	1	10/4/2022 6:28:41 PM	C91551
Vanadium	0.0029	0.0017	0.050	J	mg/L	1	10/4/2022 6:28:41 PM	C91551
Zinc	0.014	0.0032	0.010		mg/L	1	10/4/2022 6:28:41 PM	C91551
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	10/4/2022 12:35:42 PM	A91522
Arsenic	0.0035	0.00012	0.0010		mg/L	1	10/4/2022 12:35:42 PM	A91522
Lead	ND	0.000057	0.00050		mg/L	1	10/4/2022 12:35:42 PM	A91522
Selenium	0.0014	0.00034	0.0010		mg/L	1	10/4/2022 12:35:42 PM	A91522
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	10/6/2022 1:04:14 PM	70628

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H72**
Date Reported: **10/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-14
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/30/2022 8:50:00 AM
Lab ID: 2209H72-005A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	53	0.45	2.5		mg/L	50	10/3/2022 8:25:00 PM	R91497
Surr: BFB	118	0	70-130		%Rec	50	10/3/2022 8:25:00 PM	R91497
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	24000	110	500		µg/L	500	10/6/2022 11:09:00 PM	R91600
Toluene	ND	10	50		µg/L	50	10/6/2022 11:32:00 PM	R91600
Ethylbenzene	950	11	50		µg/L	50	10/6/2022 11:32:00 PM	R91600
Methyl tert-butyl ether (MTBE)	480	20	50		µg/L	50	10/6/2022 11:32:00 PM	R91600
1,2,4-Trimethylbenzene	ND	6.1	50		µg/L	50	10/6/2022 11:32:00 PM	R91600
1,3,5-Trimethylbenzene	ND	9.1	50		µg/L	50	10/6/2022 11:32:00 PM	R91600
1,2-Dichloroethane (EDC)	ND	13	50		µg/L	50	10/6/2022 11:32:00 PM	R91600
Acetone	ND	130	500		µg/L	50	10/6/2022 11:32:00 PM	R91600
Bromomethane	ND	43	150		µg/L	50	10/6/2022 11:32:00 PM	R91600
2-Butanone	ND	100	500		µg/L	50	10/6/2022 11:32:00 PM	R91600
Carbon disulfide	ND	30	500		µg/L	50	10/6/2022 11:32:00 PM	R91600
Chlorobenzene	ND	7.8	50		µg/L	50	10/6/2022 11:32:00 PM	R91600
Chloroform	ND	6.7	50		µg/L	50	10/6/2022 11:32:00 PM	R91600
Chloromethane	ND	21	150		µg/L	50	10/6/2022 11:32:00 PM	R91600
cis-1,2-DCE	ND	19	50		µg/L	50	10/6/2022 11:32:00 PM	R91600
1,1-Dichloroethane	ND	14	50		µg/L	50	10/6/2022 11:32:00 PM	R91600
1,1-Dichloroethene	ND	10	50		µg/L	50	10/6/2022 11:32:00 PM	R91600
Isopropylbenzene	26	9.1	50	J	µg/L	50	10/6/2022 11:32:00 PM	R91600
4-Isopropyltoluene	ND	10	50		µg/L	50	10/6/2022 11:32:00 PM	R91600
Methylene Chloride	ND	25	150		µg/L	50	10/6/2022 11:32:00 PM	R91600
n-Butylbenzene	16	13	150	J	µg/L	50	10/6/2022 11:32:00 PM	R91600
n-Propylbenzene	57	9.1	50		µg/L	50	10/6/2022 11:32:00 PM	R91600
sec-Butylbenzene	11	7.2	50	J	µg/L	50	10/6/2022 11:32:00 PM	R91600
Styrene	ND	6.8	50		µg/L	50	10/6/2022 11:32:00 PM	R91600
Tetrachloroethene (PCE)	ND	18	50		µg/L	50	10/6/2022 11:32:00 PM	R91600
1,1,1-Trichloroethane	ND	15	50		µg/L	50	10/6/2022 11:32:00 PM	R91600
Trichloroethene (TCE)	ND	10	50		µg/L	50	10/6/2022 11:32:00 PM	R91600
Vinyl chloride	ND	16	50		µg/L	50	10/6/2022 11:32:00 PM	R91600
Xylenes, Total	ND	19	75		µg/L	50	10/6/2022 11:32:00 PM	R91600
Surr: 1,2-Dichloroethane-d4	98.5	0	70-130		%Rec	50	10/6/2022 11:32:00 PM	R91600
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	50	10/6/2022 11:32:00 PM	R91600
Surr: Dibromofluoromethane	97.1	0	70-130		%Rec	50	10/6/2022 11:32:00 PM	R91600
Surr: Toluene-d8	96.7	0	70-130		%Rec	50	10/6/2022 11:32:00 PM	R91600

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H72**
Date Reported: **10/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-14
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/30/2022 8:50:00 AM
Lab ID: 2209H72-005B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	10/10/2022 2:00:35 PM	70551

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H72**
Date Reported: **10/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-14
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/30/2022 8:50:00 AM
Lab ID: 2209H72-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **mb**	
Diesel Range Organics (DRO)	3.1	0.016	0.064		mg/L	1	10/4/2022 9:28:24 PM	70553
Motor Oil Range Organics (MRO)	0.17	0.052	0.080		mg/L	1	10/4/2022 9:28:24 PM	70553
Surr: DNOP	91.2	0	42.2-138		%Rec	1	10/4/2022 9:28:24 PM	70553
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	10/13/2022 7:05:10 PM	70583
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	10/13/2022 7:05:10 PM	70583
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	10/13/2022 7:05:10 PM	70583
Di-n-octyl phthalate	ND	12	20		µg/L	1	10/13/2022 7:05:10 PM	70583
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	10/13/2022 7:05:10 PM	70583
Diethyl phthalate	ND	6.0	10		µg/L	1	10/13/2022 7:05:10 PM	70583
Dimethyl phthalate	ND	6.0	10		µg/L	1	10/13/2022 7:05:10 PM	70583
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	10/13/2022 7:05:10 PM	70583
2,4-Dinitrophenol	ND	16	20		µg/L	1	10/13/2022 7:05:10 PM	70583
1-Methylnaphthalene	20	4.3	5.0		µg/L	1	10/13/2022 7:05:10 PM	70583
2-Methylphenol	ND	5.0	10		µg/L	1	10/13/2022 7:05:10 PM	70583
3+4-Methylphenol	ND	5.1	10		µg/L	1	10/13/2022 7:05:10 PM	70583
Phenol	43	18	20		µg/L	1	10/13/2022 7:05:10 PM	70583
Pyridine	ND	14	40		µg/L	1	10/13/2022 7:05:10 PM	70583
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	10/13/2022 7:05:10 PM	70583
Surr: 2-Fluorophenol	49.5	0	15-84.5		%Rec	1	10/13/2022 7:05:10 PM	70583
Surr: Phenol-d5	40.9	0	15-67		%Rec	1	10/13/2022 7:05:10 PM	70583
Surr: 2,4,6-Tribromophenol	76.7	0	15-108		%Rec	1	10/13/2022 7:05:10 PM	70583
Surr: Nitrobenzene-d5	61.3	0	16.8-112		%Rec	1	10/13/2022 7:05:10 PM	70583
Surr: 2-Fluorobiphenyl	58.9	0	15-101		%Rec	1	10/13/2022 7:05:10 PM	70583
Surr: 4-Terphenyl-d14	70.7	0	34.4-134		%Rec	1	10/13/2022 7:05:10 PM	70583
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	1.5	0.11	1.0		µg/L	1	10/5/2022 4:24:00 PM	70583
Naphthalene	15	0.20	0.30		µg/L	1	10/5/2022 4:24:00 PM	70583
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	10/5/2022 4:24:00 PM	70583
Acenaphthene	0.58	0.14	0.30		µg/L	1	10/5/2022 4:24:00 PM	70583
Fluorene	0.78	0.095	0.30		µg/L	1	10/5/2022 4:24:00 PM	70583
Phenanthrene	0.44	0.16	0.30		µg/L	1	10/5/2022 4:24:00 PM	70583
Anthracene	0.68	0.14	0.30		µg/L	1	10/5/2022 4:24:00 PM	70583
Fluoranthene	ND	0.14	0.30		µg/L	1	10/5/2022 4:24:00 PM	70583
Pyrene	ND	0.32	1.0		µg/L	1	10/5/2022 4:24:00 PM	70583
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	10/5/2022 4:24:00 PM	70583
Chrysene	ND	0.25	0.30		µg/L	1	10/5/2022 4:24:00 PM	70583
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	10/5/2022 4:24:00 PM	70583
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	10/5/2022 4:24:00 PM	70583

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H72**
Date Reported: **10/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-14
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/30/2022 8:50:00 AM
Lab ID: 2209H72-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	71.0	0	15-108		%Rec	1	10/5/2022 4:24:00 PM	70583
Surr: 2-Fluorobiphenyl	48.4	0	15-107		%Rec	1	10/5/2022 4:24:00 PM	70583
Surr: 4-Terphenyl-d14	56.5	0	15-166		%Rec	1	10/5/2022 4:24:00 PM	70583

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H72**
Date Reported: **10/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-14
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/30/2022 8:50:00 AM
Lab ID: 2209H72-005D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	2.3	0.0079	0.015	*	mg/L	5	10/4/2022 12:31:26 PM	70537
Beryllium	ND	0.00088	0.0020		mg/L	1	10/4/2022 12:30:06 PM	70537
Cadmium	ND	0.0018	0.0020		mg/L	1	10/4/2022 12:30:06 PM	70537
Chromium	ND	0.0020	0.0060		mg/L	1	10/4/2022 12:30:06 PM	70537
Cobalt	0.0064	0.0035	0.0060		mg/L	1	10/4/2022 12:30:06 PM	70537
Nickel	0.067	0.0053	0.010		mg/L	1	10/4/2022 12:30:06 PM	70537
Silver	ND	0.0018	0.0050		mg/L	1	10/5/2022 3:52:56 PM	70537
Vanadium	ND	0.0035	0.050		mg/L	1	10/4/2022 12:30:06 PM	70537
Zinc	ND	0.0039	0.010		mg/L	1	10/4/2022 12:30:06 PM	70537
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	10/6/2022 1:35:44 PM	70537
Arsenic	0.0028	0.00022	0.0010		mg/L	1	10/6/2022 1:35:44 PM	70537
Lead	ND	0.00019	0.00050		mg/L	1	10/6/2022 1:35:44 PM	70537
Selenium	ND	0.00089	0.0010		mg/L	1	10/6/2022 1:35:44 PM	70537
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	10/6/2022 1:06:23 PM	70628

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H72**
Date Reported: **10/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-14
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/30/2022 8:50:00 AM
Lab ID: 2209H72-005E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	2.3	0.0056	0.010	*	mg/L	5	10/4/2022 6:35:04 PM	C91551
Beryllium	ND	0.00088	0.0020		mg/L	1	10/4/2022 6:33:06 PM	C91551
Cadmium	ND	0.00098	0.0020		mg/L	1	10/4/2022 6:33:06 PM	C91551
Chromium	ND	0.0020	0.0060		mg/L	1	10/4/2022 6:33:06 PM	C91551
Cobalt	ND	0.0024	0.0060		mg/L	1	10/4/2022 6:33:06 PM	C91551
Nickel	0.078	0.0033	0.010		mg/L	1	10/4/2022 6:33:06 PM	C91551
Silver	0.0014	0.0013	0.0050	J	mg/L	1	10/4/2022 6:33:06 PM	C91551
Vanadium	ND	0.0017	0.050		mg/L	1	10/4/2022 6:33:06 PM	C91551
Zinc	0.0092	0.0032	0.010	J	mg/L	1	10/4/2022 6:33:06 PM	C91551
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	10/4/2022 12:43:48 PM	A91522
Arsenic	0.0027	0.00012	0.0010		mg/L	1	10/4/2022 12:43:48 PM	A91522
Lead	ND	0.000057	0.00050		mg/L	1	10/4/2022 12:43:48 PM	A91522
Selenium	ND	0.00034	0.0010		mg/L	1	10/4/2022 12:43:48 PM	A91522
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	10/6/2022 1:12:53 PM	70628

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H72**
Date Reported: **10/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-30
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/30/2022 9:15:00 AM
Lab ID: 2209H72-006A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.90	0.0090	0.050		mg/L	1	10/3/2022 8:45:00 PM	R91497
Surr: BFB	107	0	70-130		%Rec	1	10/3/2022 8:45:00 PM	R91497
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	10/7/2022 12:41:00 AM	R91600
Toluene	ND	0.20	1.0		µg/L	1	10/7/2022 12:41:00 AM	R91600
Ethylbenzene	ND	0.21	1.0		µg/L	1	10/7/2022 12:41:00 AM	R91600
Methyl tert-butyl ether (MTBE)	900	20	50		µg/L	50	10/7/2022 12:18:00 AM	R91600
1,2,4-Trimethylbenzene	0.23	0.12	1.0	J	µg/L	1	10/7/2022 12:41:00 AM	R91600
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	10/7/2022 12:41:00 AM	R91600
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	10/7/2022 12:41:00 AM	R91600
Acetone	3.2	2.5	10	J	µg/L	1	10/7/2022 12:41:00 AM	R91600
Bromomethane	ND	0.85	3.0		µg/L	1	10/7/2022 12:41:00 AM	R91600
2-Butanone	ND	2.0	10		µg/L	1	10/7/2022 12:41:00 AM	R91600
Carbon disulfide	ND	0.59	10		µg/L	1	10/7/2022 12:41:00 AM	R91600
Chlorobenzene	ND	0.16	1.0		µg/L	1	10/7/2022 12:41:00 AM	R91600
Chloroform	ND	0.13	1.0		µg/L	1	10/7/2022 12:41:00 AM	R91600
Chloromethane	ND	0.41	3.0		µg/L	1	10/7/2022 12:41:00 AM	R91600
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	10/7/2022 12:41:00 AM	R91600
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	10/7/2022 12:41:00 AM	R91600
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	10/7/2022 12:41:00 AM	R91600
Isopropylbenzene	ND	0.18	1.0		µg/L	1	10/7/2022 12:41:00 AM	R91600
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	10/7/2022 12:41:00 AM	R91600
Methylene Chloride	ND	0.50	3.0		µg/L	1	10/7/2022 12:41:00 AM	R91600
n-Butylbenzene	ND	0.25	3.0		µg/L	1	10/7/2022 12:41:00 AM	R91600
n-Propylbenzene	ND	0.18	1.0		µg/L	1	10/7/2022 12:41:00 AM	R91600
sec-Butylbenzene	0.21	0.14	1.0	J	µg/L	1	10/7/2022 12:41:00 AM	R91600
Styrene	ND	0.14	1.0		µg/L	1	10/7/2022 12:41:00 AM	R91600
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	10/7/2022 12:41:00 AM	R91600
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	10/7/2022 12:41:00 AM	R91600
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	10/7/2022 12:41:00 AM	R91600
Vinyl chloride	ND	0.32	1.0		µg/L	1	10/7/2022 12:41:00 AM	R91600
Xylenes, Total	ND	0.37	1.5		µg/L	1	10/7/2022 12:41:00 AM	R91600
Surr: 1,2-Dichloroethane-d4	95.8	0	70-130		%Rec	1	10/7/2022 12:41:00 AM	R91600
Surr: 4-Bromofluorobenzene	95.4	0	70-130		%Rec	1	10/7/2022 12:41:00 AM	R91600
Surr: Dibromofluoromethane	97.4	0	70-130		%Rec	1	10/7/2022 12:41:00 AM	R91600
Surr: Toluene-d8	96.6	0	70-130		%Rec	1	10/7/2022 12:41:00 AM	R91600

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H72**
Date Reported: **10/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-30
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/30/2022 9:15:00 AM
Lab ID: 2209H72-006B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	10/10/2022 2:30:28 PM	70551

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H72**
Date Reported: **10/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-30
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/30/2022 9:15:00 AM
Lab ID: 2209H72-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **mb**	
Diesel Range Organics (DRO)	7.9	0.16	0.64		mg/L	10	10/5/2022 4:34:43 PM	70553
Motor Oil Range Organics (MRO)	ND	0.52	0.80	D	mg/L	10	10/5/2022 4:34:43 PM	70553
Surr: DNOP	0	0	42.2-138	S	%Rec	10	10/5/2022 4:34:43 PM	70553
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	10/13/2022 7:47:46 PM	70583
Bis(2-ethylhexyl)phthalate	8.6	8.4	10	J	µg/L	1	10/13/2022 7:47:46 PM	70583
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	10/13/2022 7:47:46 PM	70583
Di-n-octyl phthalate	ND	12	20		µg/L	1	10/13/2022 7:47:46 PM	70583
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	10/13/2022 7:47:46 PM	70583
Diethyl phthalate	ND	6.0	10		µg/L	1	10/13/2022 7:47:46 PM	70583
Dimethyl phthalate	ND	6.0	10		µg/L	1	10/13/2022 7:47:46 PM	70583
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	10/13/2022 7:47:46 PM	70583
2,4-Dinitrophenol	ND	16	20		µg/L	1	10/13/2022 7:47:46 PM	70583
2-Methylphenol	ND	5.0	10		µg/L	1	10/13/2022 7:47:46 PM	70583
3+4-Methylphenol	ND	5.1	10		µg/L	1	10/13/2022 7:47:46 PM	70583
Phenol	ND	18	20		µg/L	1	10/13/2022 7:47:46 PM	70583
Pyridine	ND	14	40		µg/L	1	10/13/2022 7:47:46 PM	70583
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	10/13/2022 7:47:46 PM	70583
Surr: 2-Fluorophenol	49.5	0	15-84.5		%Rec	1	10/13/2022 7:47:46 PM	70583
Surr: Phenol-d5	38.3	0	15-67		%Rec	1	10/13/2022 7:47:46 PM	70583
Surr: 2,4,6-Tribromophenol	117	0	15-108	S	%Rec	1	10/13/2022 7:47:46 PM	70583
Surr: Nitrobenzene-d5	52.0	0	16.8-112		%Rec	1	10/13/2022 7:47:46 PM	70583
Surr: 2-Fluorobiphenyl	52.3	0	15-101		%Rec	1	10/13/2022 7:47:46 PM	70583
Surr: 4-Terphenyl-d14	72.9	0	34.4-134		%Rec	1	10/13/2022 7:47:46 PM	70583
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	0.72	0.11	1.0	J	µg/L	1	10/5/2022 5:09:00 PM	70583
Naphthalene	ND	0.20	0.30		µg/L	1	10/5/2022 5:09:00 PM	70583
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	10/5/2022 5:09:00 PM	70583
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	10/5/2022 5:09:00 PM	70583
Acenaphthene	ND	0.14	0.30		µg/L	1	10/5/2022 5:09:00 PM	70583
Fluorene	ND	0.095	0.30		µg/L	1	10/5/2022 5:09:00 PM	70583
Phenanthrene	ND	0.16	0.30		µg/L	1	10/5/2022 5:09:00 PM	70583
Anthracene	0.22	0.14	0.30	J	µg/L	1	10/5/2022 5:09:00 PM	70583
Fluoranthene	ND	0.14	0.30		µg/L	1	10/5/2022 5:09:00 PM	70583
Pyrene	ND	0.32	1.0		µg/L	1	10/5/2022 5:09:00 PM	70583
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	10/5/2022 5:09:00 PM	70583
Chrysene	ND	0.25	0.30		µg/L	1	10/5/2022 5:09:00 PM	70583
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	10/5/2022 5:09:00 PM	70583
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	10/5/2022 5:09:00 PM	70583

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H72**
Date Reported: **10/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-30
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/30/2022 9:15:00 AM
Lab ID: 2209H72-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	69.4	0	15-108		%Rec	1	10/5/2022 5:09:00 PM	70583
Surr: 2-Fluorobiphenyl	54.3	0	15-107		%Rec	1	10/5/2022 5:09:00 PM	70583
Surr: 4-Terphenyl-d14	59.9	0	15-166		%Rec	1	10/5/2022 5:09:00 PM	70583

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H72**
Date Reported: **10/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-30
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/30/2022 9:15:00 AM
Lab ID: 2209H72-006D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.15	0.0016	0.0030		mg/L	1	10/4/2022 12:34:31 PM	70537
Beryllium	ND	0.00088	0.0020		mg/L	1	10/4/2022 12:34:31 PM	70537
Cadmium	ND	0.0018	0.0020		mg/L	1	10/4/2022 12:34:31 PM	70537
Chromium	ND	0.0020	0.0060		mg/L	1	10/4/2022 12:34:31 PM	70537
Cobalt	0.0057	0.0035	0.0060	J	mg/L	1	10/4/2022 12:34:31 PM	70537
Nickel	0.075	0.0053	0.010		mg/L	1	10/4/2022 12:34:31 PM	70537
Silver	ND	0.0018	0.0050		mg/L	1	10/5/2022 3:54:09 PM	70537
Vanadium	0.0048	0.0035	0.050	J	mg/L	1	10/4/2022 12:34:31 PM	70537
Zinc	ND	0.0039	0.010		mg/L	1	10/4/2022 12:34:31 PM	70537
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	10/6/2022 1:38:10 PM	70537
Arsenic	0.00092	0.00022	0.0010	J	mg/L	1	10/6/2022 1:38:10 PM	70537
Lead	0.0018	0.00019	0.00050		mg/L	1	10/6/2022 1:38:10 PM	70537
Selenium	ND	0.00089	0.0010		mg/L	1	10/6/2022 1:38:10 PM	70537
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	10/6/2022 1:15:02 PM	70628

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H72**
Date Reported: **10/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-30
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/30/2022 9:15:00 AM
Lab ID: 2209H72-006E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.13	0.0011	0.0020		mg/L	1	10/4/2022 6:37:02 PM	C91551
Beryllium	ND	0.00088	0.0020		mg/L	1	10/4/2022 6:37:02 PM	C91551
Cadmium	ND	0.00098	0.0020		mg/L	1	10/4/2022 6:37:02 PM	C91551
Chromium	ND	0.0020	0.0060		mg/L	1	10/4/2022 6:37:02 PM	C91551
Cobalt	0.0025	0.0024	0.0060	J	mg/L	1	10/4/2022 6:37:02 PM	C91551
Nickel	0.081	0.0033	0.010		mg/L	1	10/4/2022 6:37:02 PM	C91551
Silver	ND	0.0013	0.0050		mg/L	1	10/4/2022 6:37:02 PM	C91551
Vanadium	ND	0.0017	0.050		mg/L	1	10/4/2022 6:37:02 PM	C91551
Zinc	0.016	0.0032	0.010		mg/L	1	10/4/2022 6:37:02 PM	C91551
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	10/4/2022 12:46:30 PM	A91522
Arsenic	0.00076	0.00012	0.0010	J	mg/L	1	10/4/2022 12:46:30 PM	A91522
Lead	0.00044	0.000057	0.00050	J	mg/L	1	10/4/2022 12:46:30 PM	A91522
Selenium	ND	0.00034	0.0010		mg/L	1	10/4/2022 12:46:30 PM	A91522
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	10/6/2022 1:17:11 PM	70628

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H72**
Date Reported: **10/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-9-30-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/30/2022
Lab ID: 2209H72-007A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	10/3/2022 9:04:00 PM	R91497
Surr: BFB	108	0	70-130		%Rec	1	10/3/2022 9:04:00 PM	R91497
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	10/7/2022 1:50:00 AM	R91600
Toluene	ND	0.20	1.0		µg/L	1	10/7/2022 1:50:00 AM	R91600
Ethylbenzene	ND	0.21	1.0		µg/L	1	10/7/2022 1:50:00 AM	R91600
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	10/7/2022 1:50:00 AM	R91600
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	10/7/2022 1:50:00 AM	R91600
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	10/7/2022 1:50:00 AM	R91600
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	10/7/2022 1:50:00 AM	R91600
Acetone	ND	2.5	10		µg/L	1	10/7/2022 1:50:00 AM	R91600
Bromomethane	ND	0.85	3.0		µg/L	1	10/7/2022 1:50:00 AM	R91600
2-Butanone	ND	2.0	10		µg/L	1	10/7/2022 1:50:00 AM	R91600
Carbon disulfide	ND	0.59	10		µg/L	1	10/7/2022 1:50:00 AM	R91600
Chlorobenzene	ND	0.16	1.0		µg/L	1	10/7/2022 1:50:00 AM	R91600
Chloroform	ND	0.13	1.0		µg/L	1	10/7/2022 1:50:00 AM	R91600
Chloromethane	ND	0.41	3.0		µg/L	1	10/7/2022 1:50:00 AM	R91600
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	10/7/2022 1:50:00 AM	R91600
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	10/7/2022 1:50:00 AM	R91600
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	10/7/2022 1:50:00 AM	R91600
Isopropylbenzene	ND	0.18	1.0		µg/L	1	10/7/2022 1:50:00 AM	R91600
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	10/7/2022 1:50:00 AM	R91600
Methylene Chloride	ND	0.50	3.0		µg/L	1	10/7/2022 1:50:00 AM	R91600
n-Butylbenzene	ND	0.25	3.0		µg/L	1	10/7/2022 1:50:00 AM	R91600
n-Propylbenzene	ND	0.18	1.0		µg/L	1	10/7/2022 1:50:00 AM	R91600
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	10/7/2022 1:50:00 AM	R91600
Styrene	ND	0.14	1.0		µg/L	1	10/7/2022 1:50:00 AM	R91600
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	10/7/2022 1:50:00 AM	R91600
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	10/7/2022 1:50:00 AM	R91600
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	10/7/2022 1:50:00 AM	R91600
Vinyl chloride	ND	0.32	1.0		µg/L	1	10/7/2022 1:50:00 AM	R91600
Xylenes, Total	ND	0.37	1.5		µg/L	1	10/7/2022 1:50:00 AM	R91600
Surr: 1,2-Dichloroethane-d4	100	0	70-130		%Rec	1	10/7/2022 1:50:00 AM	R91600
Surr: 4-Bromofluorobenzene	98.5	0	70-130		%Rec	1	10/7/2022 1:50:00 AM	R91600
Surr: Dibromofluoromethane	100	0	70-130		%Rec	1	10/7/2022 1:50:00 AM	R91600
Surr: Toluene-d8	94.5	0	70-130		%Rec	1	10/7/2022 1:50:00 AM	R91600

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H72**
Date Reported: **10/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-9-30-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/30/2022
Lab ID: 2209H72-007B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	10/10/2022 3:00:14 PM	70551

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H72**
Date Reported: **10/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-9-30-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/30/2022
Lab ID: 2209H72-007C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **mb**	
Diesel Range Organics (DRO)	0.022	0.016	0.064	J	mg/L	1	10/4/2022 11:05:05 PM	70553
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	10/4/2022 11:05:05 PM	70553
Surr: DNOP	89.7	0	42.2-138		%Rec	1	10/4/2022 11:05:05 PM	70553
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	10/13/2022 8:30:15 PM	70583
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	10/13/2022 8:30:15 PM	70583
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	10/13/2022 8:30:15 PM	70583
Di-n-octyl phthalate	ND	12	20		µg/L	1	10/13/2022 8:30:15 PM	70583
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	10/13/2022 8:30:15 PM	70583
Diethyl phthalate	ND	6.0	10		µg/L	1	10/13/2022 8:30:15 PM	70583
Dimethyl phthalate	ND	6.0	10		µg/L	1	10/13/2022 8:30:15 PM	70583
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	10/13/2022 8:30:15 PM	70583
2,4-Dinitrophenol	ND	16	20		µg/L	1	10/13/2022 8:30:15 PM	70583
2-Methylphenol	ND	5.0	10		µg/L	1	10/13/2022 8:30:15 PM	70583
3+4-Methylphenol	ND	5.1	10		µg/L	1	10/13/2022 8:30:15 PM	70583
Phenol	ND	18	20		µg/L	1	10/13/2022 8:30:15 PM	70583
Pyridine	ND	14	40		µg/L	1	10/13/2022 8:30:15 PM	70583
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	10/13/2022 8:30:15 PM	70583
Surr: 2-Fluorophenol	56.7	0	15-84.5		%Rec	1	10/13/2022 8:30:15 PM	70583
Surr: Phenol-d5	40.5	0	15-67		%Rec	1	10/13/2022 8:30:15 PM	70583
Surr: 2,4,6-Tribromophenol	80.6	0	15-108		%Rec	1	10/13/2022 8:30:15 PM	70583
Surr: Nitrobenzene-d5	63.5	0	16.8-112		%Rec	1	10/13/2022 8:30:15 PM	70583
Surr: 2-Fluorobiphenyl	61.6	0	15-101		%Rec	1	10/13/2022 8:30:15 PM	70583
Surr: 4-Terphenyl-d14	79.6	0	34.4-134		%Rec	1	10/13/2022 8:30:15 PM	70583
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	10/5/2022 5:55:00 PM	70583
Naphthalene	ND	0.20	0.30		µg/L	1	10/5/2022 5:55:00 PM	70583
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	10/5/2022 5:55:00 PM	70583
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	10/5/2022 5:55:00 PM	70583
Acenaphthene	ND	0.14	0.30		µg/L	1	10/5/2022 5:55:00 PM	70583
Fluorene	ND	0.095	0.30		µg/L	1	10/5/2022 5:55:00 PM	70583
Phenanthrene	ND	0.16	0.30		µg/L	1	10/5/2022 5:55:00 PM	70583
Anthracene	ND	0.14	0.30		µg/L	1	10/5/2022 5:55:00 PM	70583
Fluoranthene	ND	0.14	0.30		µg/L	1	10/5/2022 5:55:00 PM	70583
Pyrene	ND	0.32	1.0		µg/L	1	10/5/2022 5:55:00 PM	70583
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	10/5/2022 5:55:00 PM	70583
Chrysene	ND	0.25	0.30		µg/L	1	10/5/2022 5:55:00 PM	70583
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	10/5/2022 5:55:00 PM	70583
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	10/5/2022 5:55:00 PM	70583

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H72**
Date Reported: **10/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-9-30-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/30/2022
Lab ID: 2209H72-007C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	71.7	0	15-108		%Rec	1	10/5/2022 5:55:00 PM	70583
Surr: 2-Fluorobiphenyl	57.0	0	15-107		%Rec	1	10/5/2022 5:55:00 PM	70583
Surr: 4-Terphenyl-d14	65.5	0	15-166		%Rec	1	10/5/2022 5:55:00 PM	70583

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H72**
Date Reported: **10/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-9-30-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/30/2022
Lab ID: 2209H72-007D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.021	0.0016	0.0030		mg/L	1	10/4/2022 12:45:10 PM	70537
Beryllium	ND	0.00088	0.0020		mg/L	1	10/4/2022 12:45:10 PM	70537
Cadmium	ND	0.0018	0.0020		mg/L	1	10/4/2022 12:45:10 PM	70537
Chromium	ND	0.0020	0.0060		mg/L	1	10/4/2022 12:45:10 PM	70537
Cobalt	ND	0.0035	0.0060		mg/L	1	10/4/2022 12:45:10 PM	70537
Nickel	ND	0.0053	0.010		mg/L	1	10/4/2022 12:45:10 PM	70537
Silver	ND	0.0018	0.0050		mg/L	1	10/5/2022 3:55:46 PM	70537
Vanadium	ND	0.0035	0.050		mg/L	1	10/4/2022 12:45:10 PM	70537
Zinc	ND	0.0039	0.010		mg/L	1	10/4/2022 12:45:10 PM	70537
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	10/6/2022 1:40:36 PM	70537
Arsenic	0.00078	0.00022	0.0010	J	mg/L	1	10/6/2022 1:40:36 PM	70537
Lead	ND	0.00019	0.00050		mg/L	1	10/6/2022 1:40:36 PM	70537
Selenium	ND	0.00089	0.0010		mg/L	1	10/6/2022 1:40:36 PM	70537
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	10/6/2022 1:19:20 PM	70628

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H72**
Date Reported: **10/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-9-30-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/30/2022
Lab ID: 2209H72-007E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.018	0.0011	0.0020		mg/L	1	10/6/2022 12:34:09 PM	A91612
Beryllium	ND	0.00088	0.0020		mg/L	1	10/6/2022 12:34:09 PM	A91612
Cadmium	ND	0.00098	0.0020		mg/L	1	10/6/2022 12:34:09 PM	A91612
Chromium	ND	0.0020	0.0060		mg/L	1	10/6/2022 12:34:09 PM	A91612
Cobalt	ND	0.0024	0.0060		mg/L	1	10/6/2022 12:34:09 PM	A91612
Nickel	ND	0.0033	0.010		mg/L	1	10/6/2022 12:34:09 PM	A91612
Silver	ND	0.0013	0.0050		mg/L	1	10/6/2022 12:34:09 PM	A91612
Vanadium	ND	0.0017	0.050		mg/L	1	10/6/2022 12:34:09 PM	A91612
Zinc	0.056	0.0032	0.010		mg/L	1	10/6/2022 12:34:09 PM	A91612
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	10/4/2022 12:54:33 PM	A91522
Arsenic	0.00073	0.00012	0.0010	J	mg/L	1	10/4/2022 12:54:33 PM	A91522
Lead	ND	0.000057	0.00050		mg/L	1	10/4/2022 12:54:33 PM	A91522
Selenium	ND	0.00034	0.0010		mg/L	1	10/4/2022 12:54:33 PM	A91522
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	10/6/2022 1:21:30 PM	70628

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H72**
Date Reported: **10/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB-9-30-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/30/2022 9:15:00 AM
Lab ID: 2209H72-008A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	10/7/2022 2:36:00 AM	R91600
Toluene	ND	0.20	1.0		µg/L	1	10/7/2022 2:36:00 AM	R91600
Ethylbenzene	ND	0.21	1.0		µg/L	1	10/7/2022 2:36:00 AM	R91600
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	10/7/2022 2:36:00 AM	R91600
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	10/7/2022 2:36:00 AM	R91600
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	10/7/2022 2:36:00 AM	R91600
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	10/7/2022 2:36:00 AM	R91600
Acetone	ND	2.5	10		µg/L	1	10/7/2022 2:36:00 AM	R91600
Bromomethane	ND	0.85	3.0		µg/L	1	10/7/2022 2:36:00 AM	R91600
2-Butanone	ND	2.0	10		µg/L	1	10/7/2022 2:36:00 AM	R91600
Carbon disulfide	ND	0.59	10		µg/L	1	10/7/2022 2:36:00 AM	R91600
Chlorobenzene	ND	0.16	1.0		µg/L	1	10/7/2022 2:36:00 AM	R91600
Chloroform	ND	0.13	1.0		µg/L	1	10/7/2022 2:36:00 AM	R91600
Chloromethane	ND	0.41	3.0		µg/L	1	10/7/2022 2:36:00 AM	R91600
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	10/7/2022 2:36:00 AM	R91600
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	10/7/2022 2:36:00 AM	R91600
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	10/7/2022 2:36:00 AM	R91600
Isopropylbenzene	ND	0.18	1.0		µg/L	1	10/7/2022 2:36:00 AM	R91600
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	10/7/2022 2:36:00 AM	R91600
Methylene Chloride	ND	0.50	3.0		µg/L	1	10/7/2022 2:36:00 AM	R91600
n-Butylbenzene	ND	0.25	3.0		µg/L	1	10/7/2022 2:36:00 AM	R91600
n-Propylbenzene	ND	0.18	1.0		µg/L	1	10/7/2022 2:36:00 AM	R91600
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	10/7/2022 2:36:00 AM	R91600
Styrene	ND	0.14	1.0		µg/L	1	10/7/2022 2:36:00 AM	R91600
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	10/7/2022 2:36:00 AM	R91600
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	10/7/2022 2:36:00 AM	R91600
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	10/7/2022 2:36:00 AM	R91600
Vinyl chloride	ND	0.32	1.0		µg/L	1	10/7/2022 2:36:00 AM	R91600
Xylenes, Total	0.47	0.37	1.5	J	µg/L	1	10/7/2022 2:36:00 AM	R91600
Surr: 1,2-Dichloroethane-d4	100	0	70-130		%Rec	1	10/7/2022 2:36:00 AM	R91600
Surr: 4-Bromofluorobenzene	100	0	70-130		%Rec	1	10/7/2022 2:36:00 AM	R91600
Surr: Dibromofluoromethane	99.0	0	70-130		%Rec	1	10/7/2022 2:36:00 AM	R91600
Surr: Toluene-d8	94.9	0	70-130		%Rec	1	10/7/2022 2:36:00 AM	R91600

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H72**
Date Reported: **10/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 3rd Quarter
Collection Date:
Lab ID: 2209H72-009A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	10/7/2022 2:59:00 AM	R91600
Toluene	ND	0.20	1.0		µg/L	1	10/7/2022 2:59:00 AM	R91600
Ethylbenzene	ND	0.21	1.0		µg/L	1	10/7/2022 2:59:00 AM	R91600
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	10/7/2022 2:59:00 AM	R91600
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	10/7/2022 2:59:00 AM	R91600
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	10/7/2022 2:59:00 AM	R91600
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	10/7/2022 2:59:00 AM	R91600
Acetone	ND	2.5	10		µg/L	1	10/7/2022 2:59:00 AM	R91600
Bromomethane	ND	0.85	3.0		µg/L	1	10/7/2022 2:59:00 AM	R91600
2-Butanone	ND	2.0	10		µg/L	1	10/7/2022 2:59:00 AM	R91600
Carbon disulfide	ND	0.59	10		µg/L	1	10/7/2022 2:59:00 AM	R91600
Chlorobenzene	ND	0.16	1.0		µg/L	1	10/7/2022 2:59:00 AM	R91600
Chloroform	ND	0.13	1.0		µg/L	1	10/7/2022 2:59:00 AM	R91600
Chloromethane	ND	0.41	3.0		µg/L	1	10/7/2022 2:59:00 AM	R91600
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	10/7/2022 2:59:00 AM	R91600
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	10/7/2022 2:59:00 AM	R91600
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	10/7/2022 2:59:00 AM	R91600
Isopropylbenzene	ND	0.18	1.0		µg/L	1	10/7/2022 2:59:00 AM	R91600
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	10/7/2022 2:59:00 AM	R91600
Methylene Chloride	ND	0.50	3.0		µg/L	1	10/7/2022 2:59:00 AM	R91600
n-Butylbenzene	ND	0.25	3.0		µg/L	1	10/7/2022 2:59:00 AM	R91600
n-Propylbenzene	ND	0.18	1.0		µg/L	1	10/7/2022 2:59:00 AM	R91600
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	10/7/2022 2:59:00 AM	R91600
Styrene	ND	0.14	1.0		µg/L	1	10/7/2022 2:59:00 AM	R91600
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	10/7/2022 2:59:00 AM	R91600
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	10/7/2022 2:59:00 AM	R91600
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	10/7/2022 2:59:00 AM	R91600
Vinyl chloride	ND	0.32	1.0		µg/L	1	10/7/2022 2:59:00 AM	R91600
Xylenes, Total	0.47	0.37	1.5	J	µg/L	1	10/7/2022 2:59:00 AM	R91600
Surr: 1,2-Dichloroethane-d4	98.9	0	70-130		%Rec	1	10/7/2022 2:59:00 AM	R91600
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	10/7/2022 2:59:00 AM	R91600
Surr: Dibromofluoromethane	98.8	0	70-130		%Rec	1	10/7/2022 2:59:00 AM	R91600
Surr: Toluene-d8	94.5	0	70-130		%Rec	1	10/7/2022 2:59:00 AM	R91600

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209H72**
Date Reported: **10/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 3rd Quarter
Collection Date:
Lab ID: 2209H72-009B
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	10/10/2022 3:30:17 PM	70551

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

ANALYTICAL REPORT

October 09, 2022

Hall Environmental Analysis Laboratory

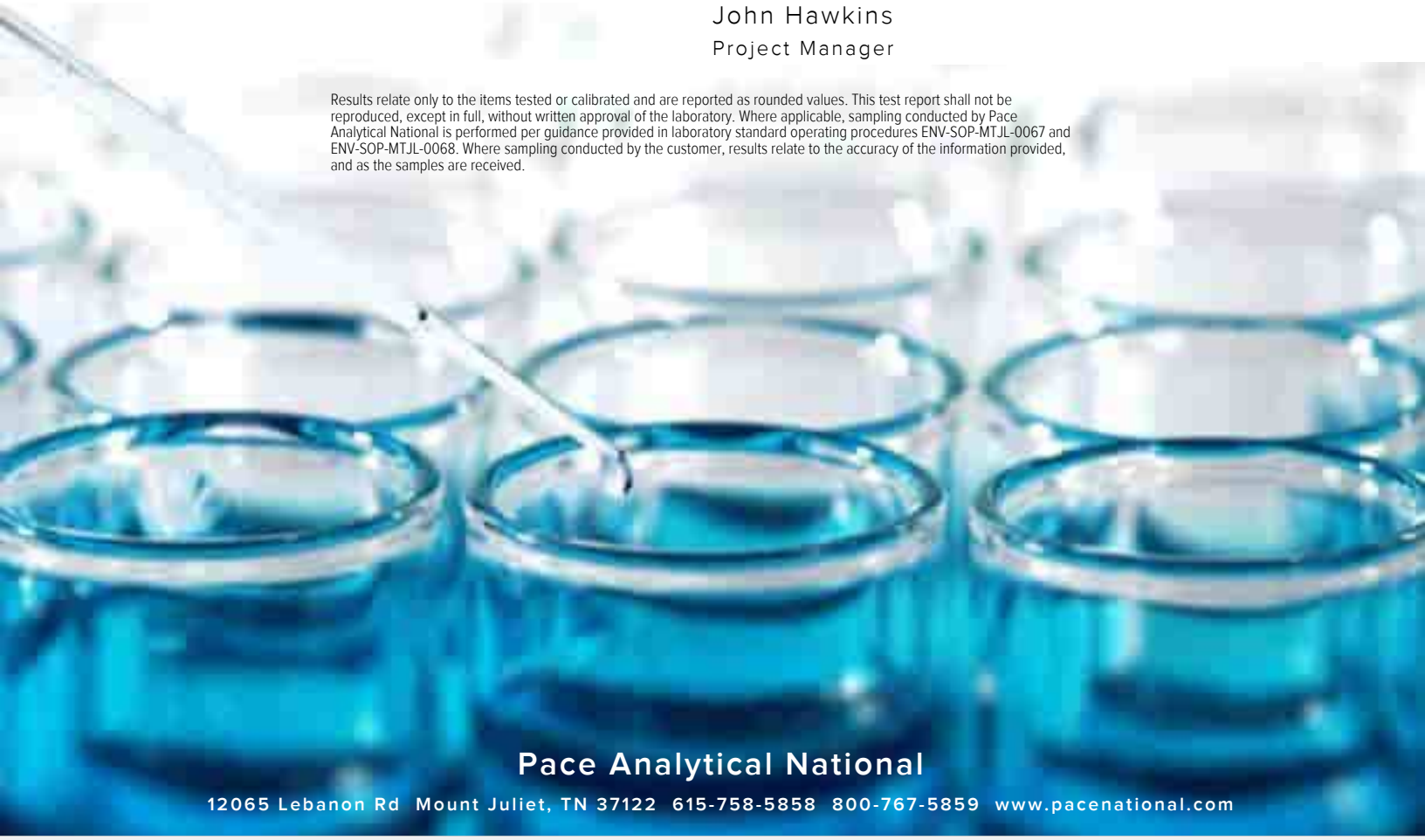
Sample Delivery Group:	L1542742
Samples Received:	10/04/2022
Project Number:	
Description:	

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By: John V Hawkins

John Hawkins
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 4

Sr: Sample Results 5

2209H72-001F EB-09-28-22 L1542742-01 5

2209H72-002F BW-1C L1542742-02 6

2209H72-003F BW-2C L1542742-03 7

2209H72-004F BW-2B L1542742-04 8

2209H72-005F BW-3C L1542742-05 9

2209H72-006F BW-3B L1542742-06 10

2209H72-007F DUP-9-28-22 L1542742-07 11

Qc: Quality Control Summary 12

Wet Chemistry by Method 4500CN E-2016 12

Gl: Glossary of Terms 16

Al: Accreditations & Locations 17

Sc: Sample Chain of Custody 18

SAMPLE SUMMARY

2209H72-001F EB-09-28-22 L1542742-01 WW

			Collected by	Collected date/time	Received date/time	
				09/30/22 07:45	10/04/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1937600	1	10/06/22 03:18	10/07/22 12:32	CAT	Mt. Juliet, TN

2209H72-002F BW-1C L1542742-02 WW

			Collected by	Collected date/time	Received date/time	
				09/30/22 07:55	10/04/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1937600	1	10/06/22 03:18	10/07/22 12:35	CAT	Mt. Juliet, TN

2209H72-003F BW-2C L1542742-03 WW

			Collected by	Collected date/time	Received date/time	
				09/30/22 08:15	10/04/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1937600	1	10/06/22 03:18	10/07/22 12:36	CAT	Mt. Juliet, TN

2209H72-004F BW-2B L1542742-04 WW

			Collected by	Collected date/time	Received date/time	
				09/30/22 08:30	10/04/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1937600	1	10/06/22 03:18	10/07/22 12:37	CAT	Mt. Juliet, TN

2209H72-005F BW-3C L1542742-05 WW

			Collected by	Collected date/time	Received date/time	
				09/30/22 08:50	10/04/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1937600	1	10/06/22 03:18	10/07/22 12:38	CAT	Mt. Juliet, TN

2209H72-006F BW-3B L1542742-06 WW

			Collected by	Collected date/time	Received date/time	
				09/30/22 09:15	10/04/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1937792	1	10/07/22 08:19	10/07/22 19:33	LDT	Mt. Juliet, TN

2209H72-007F DUP-9-28-22 L1542742-07 WW

			Collected by	Collected date/time	Received date/time	
				09/30/22 00:00	10/04/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1937792	1	10/07/22 08:19	10/07/22 19:34	LDT	Mt. Juliet, TN

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Received by OCD: 4/21/2023 9:21:57 AM

Collected date/time: 09/30/22 07:45
L1542742

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	10/07/2022 12:32	WG1937600

Released to Imaging: 4/21/2023 9:40:26 AM

Received by OCD: 4/21/2023 9:21:57 AM

SAMPLE RESULTS - 02

2209172-002F BW-1C
Collected date/time: 09/30/22 07:55
L1542742

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	10/07/2022 12:35	WG1937600

Released to Imaging: 4/21/2023 9:40:26 AM

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.0284		0.00500	1	10/07/2022 12:36	WG1937600

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.0189		0.00500	1	10/07/2022 12:37	WG1937600

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	10/07/2022 12:38	WG1937600

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.00714		0.00500	1	10/07/2022 19:33	WG1937792

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	10/07/2022 19:34	WG1937792

Method Blank (MB)

(MB) R3845870-1 10/07/22 12:16

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1542733-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1542733-01 10/07/22 12:22 • (DUP) R3845870-3 10/07/22 12:23

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

L1542734-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1542734-02 10/07/22 12:30 • (DUP) R3845870-6 10/07/22 12:31

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3845870-2 10/07/22 12:17

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.0985	98.5	87.1-120	

L1542733-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1542733-02 10/07/22 12:24 • (MS) R3845870-4 10/07/22 12:25 • (MSD) R3845870-5 10/07/22 12:26

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0880	0.0881	88.0	88.1	1	90.0-110	J6	J6	0.114	20

Sample Narrative:

MS: Matrix spike failure due to matrix interference.

MSD: Matrix spike failure due to matrix interference.

Received by OCD: 4/21/2023 9:21:57 AM

L1542742-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1542742-01 10/07/22 12:32 • (MS) R3845870-7 10/07/22 12:33 • (MSD) R3845870-8 10/07/22 12:34

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0957	0.0953	93.7	93.3	1	90.0-110			0.419	20

Released to Imaging: 4/21/2023 9:40:26 AM

Method Blank (MB)

(MB) R3846129-1 10/07/22 19:07

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1542514-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1542514-04 10/07/22 19:14 • (DUP) R3846129-3 10/07/22 19:15

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

L1542514-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1542514-05 10/07/22 19:16 • (DUP) R3846129-4 10/07/22 19:17

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3846129-2 10/07/22 19:08

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.103	103	87.1-120	

L1542514-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1542514-06 10/07/22 19:20 • (MS) R3846129-5 10/07/22 19:21 • (MSD) R3846129-6 10/07/22 19:22

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	0.00699	0.102	0.0965	95.0	89.5	1	90.0-110		J6	5.54	20

Sample Narrative:

MSD: Matrix spike failure due to matrix interference.

Wet Chemistry by Method 4500CN E-2016

L1542742-06,07

L1542514-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1542514-07 10/07/22 19:23 • (MS) R3846129-7 10/07/22 19:24 • (MSD) R3846129-8 10/07/22 19:25

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0943	0.0963	94.3	96.3	1	90.0-110			2.10	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Received by OCD: 4/21/2023 9:21:57 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

1050

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

SUB CONTRATOR: Pace TN	COMPANY: PACE TN	PHONE: (800) 767-5859	FAX: (615) 758-5859
ADDRESS: 12065 Lebanon Rd		ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: Mt. Juliet, TN 37122			

L1542742

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS	
1	2209H72-001F	EB-09-28-22	500AMBHDP F-NAOH	Groundwater	9/30/2022 7:45:00 AM	1	Total Cyanide J and MDL	-01
2	2209H72-002F	BW-1C	500AMBHDP F-NAOH	Groundwater	9/30/2022 7:55:00 AM	1	Total Cyanide J and MDL	-02
3	2209H72-003F	BW-2C	500AMBHDP F-NAOH	Groundwater	9/30/2022 8:15:00 AM	1	Total Cyanide J and MDL	-03
4	2209H72-004F	BW-2B	500AMBHDP F-NAOH	Groundwater	9/30/2022 8:30:00 AM	1	Total Cyanide J and MDL	-04
5	2209H72-005F	BW-3C	500AMBHDP F-NAOH	Groundwater	9/30/2022 8:50:00 AM	1	Total Cyanide J and MDL	-05
6	2209H72-006F	BW-3B	500AMBHDP F-NAOH	Groundwater	9/30/2022 9:15:00 AM	1	Total Cyanide J and MDL	-06
7	2209H72-007F	DUP-9-28-22	500AMBHDP F-NAOH	Groundwater	9/30/2022	1	Total Cyanide J and MDL	-07

Sample Receipt Checklist

COC Seal Present/Intact:	Y N	If Applicable	
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	Y N	Pres.Correct/Check:	Y N
Correct bottles used:	Y N		
Sufficient volume sent:	Y N		
RAD Screen <0.5 mR/hr:	Y N		

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

	Date	Time		Date	Time
Relinquished By:	9/30/2022	2:45 PM	Received By:	10/4/22	0900
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☑ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY
Temp of samples 1.6 °C Attempt to Cool ?
Comments

Released to Imaging: 4/21/2023 9:40:26 AM

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209H72**

18-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70537**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **70537**	RunNo: **91525**
Prep Date: **10/3/2022**	Analysis Date: **10/4/2022**	SeqNo: **3278251** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	0.0055	0.010								J

Sample ID: **LCSLL-70537**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **70537**	RunNo: **91525**
Prep Date: **10/3/2022**	Analysis Date: **10/4/2022**	SeqNo: **3278252** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0021	0.0030	0.002000	0	105	50	150			J
Beryllium	0.0021	0.0020	0.002000	0	106	50	150			
Cadmium	0.0018	0.0020	0.002000	0	91.6	50	150			J
Chromium	0.0091	0.0060	0.006000	0	152	50	150			S
Cobalt	0.0048	0.0060	0.006000	0	80.6	50	150			J
Nickel	0.0064	0.010	0.005000	0	129	50	150			J
Silver	0.0053	0.0050	0.005000	0	106	50	150			
Vanadium	0.011	0.050	0.01000	0	108	50	150			J
Zinc	0.013	0.010	0.01000	0	130	50	150			

Sample ID: **LCS-70537**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **70537**	RunNo: **91525**
Prep Date: **10/3/2022**	Analysis Date: **10/4/2022**	SeqNo: **3278253** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.52	0.0030	0.5000	0	104	85	115			
Beryllium	0.53	0.0020	0.5000	0	106	85	115			
Cadmium	0.52	0.0020	0.5000	0	103	85	115			
Chromium	0.52	0.0060	0.5000	0	103	85	115			
Cobalt	0.52	0.0060	0.5000	0	103	85	115			
Nickel	0.50	0.010	0.5000	0	100	85	115			
Silver	0.10	0.0050	0.1000	0	102	85	115			
Vanadium	0.52	0.050	0.5000	0	105	85	115			
Zinc	0.52	0.010	0.5000	0	105	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209H72**

18-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-C**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **C91551**	RunNo: **91551**
Prep Date:	Analysis Date: **10/4/2022**	SeqNo: **3279594** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS-C**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **C91551**	RunNo: **91551**
Prep Date:	Analysis Date: **10/4/2022**	SeqNo: **3279595** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0019	0.0020	0.002000	0	95.0	50	150			J
Beryllium	0.0013	0.0020	0.002000	0	67.2	50	150			J
Cadmium	0.0025	0.0020	0.002000	0	123	50	150			
Chromium	0.0065	0.0060	0.006000	0	109	50	150			
Cobalt	0.0069	0.0060	0.006000	0	114	50	150			
Nickel	0.0037	0.010	0.005000	0	74.7	50	150			J
Silver	0.0049	0.0050	0.005000	0	97.2	50	150			J
Vanadium	0.0076	0.050	0.01000	0	75.9	50	150			J
Zinc	0.014	0.010	0.01000	0	137	50	150			

Sample ID: **LCS-C**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **C91551**	RunNo: **91551**
Prep Date:	Analysis Date: **10/4/2022**	SeqNo: **3279596** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.52	0.0020	0.5000	0	104	85	115			
Beryllium	0.51	0.0020	0.5000	0	102	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.4	85	115			
Chromium	0.51	0.0060	0.5000	0	102	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.0	85	115			
Nickel	0.51	0.010	0.5000	0	102	85	115			
Silver	0.11	0.0050	0.1000	0	109	85	115			
Vanadium	0.51	0.050	0.5000	0	101	85	115			
Zinc	0.51	0.010	0.5000	0	102	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209H72**

18-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **2209H72-001EMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB-9-30-22**	Batch ID: **C91551**	RunNo: **91551**
Prep Date:	Analysis Date: **10/4/2022**	SeqNo: **3279730** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0020	0.5000	0	100	70	130			
Beryllium	0.50	0.0020	0.5000	0	99.3	70	130			
Cadmium	0.49	0.0020	0.5000	0	97.4	70	130			
Chromium	0.50	0.0060	0.5000	0	100	70	130			
Cobalt	0.48	0.0060	0.5000	0	96.3	70	130			
Nickel	0.50	0.010	0.5000	0	99.4	70	130			
Silver	0.11	0.0050	0.1000	0	105	70	130			
Vanadium	0.49	0.050	0.5000	0	98.1	70	130			
Zinc	0.51	0.010	0.5000	0.006210	101	70	130			

Sample ID: **2209H72-001EMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB-9-30-22**	Batch ID: **C91551**	RunNo: **91551**
Prep Date:	Analysis Date: **10/4/2022**	SeqNo: **3279731** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	98.7	70	130	1.70	20	
Beryllium	0.49	0.0020	0.5000	0	97.9	70	130	1.42	20	
Cadmium	0.48	0.0020	0.5000	0	95.5	70	130	2.02	20	
Chromium	0.49	0.0060	0.5000	0	97.9	70	130	2.19	20	
Cobalt	0.47	0.0060	0.5000	0	93.9	70	130	2.50	20	
Nickel	0.49	0.010	0.5000	0	97.3	70	130	2.04	20	
Silver	0.10	0.0050	0.1000	0	102	70	130	2.98	20	
Vanadium	0.48	0.050	0.5000	0	96.0	70	130	2.14	20	
Zinc	0.50	0.010	0.5000	0.006210	97.8	70	130	2.96	20	

Sample ID: **MB-A**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A91612**	RunNo: **91612**
Prep Date:	Analysis Date: **10/6/2022**	SeqNo: **3282797** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209H72**

18-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **LCSLL-A**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A91612**	RunNo: **91612**
Prep Date:	Analysis Date: **10/6/2022**	SeqNo: **3282798** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0018	0.0020	0.002000	0	92.5	50	150			J
Beryllium	0.0020	0.0020	0.002000	0	100	50	150			
Cadmium	0.0020	0.0020	0.002000	0	102	50	150			
Chromium	0.0065	0.0060	0.006000	0	109	50	150			
Cobalt	0.0047	0.0060	0.006000	0	78.0	50	150			J
Nickel	0.0058	0.010	0.005000	0	116	50	150			J
Silver	0.0040	0.0050	0.005000	0	80.9	50	150			J
Vanadium	0.010	0.050	0.01000	0	100	50	150			J
Zinc	0.0093	0.010	0.01000	0	92.6	50	150			J

Sample ID: **LCS-A**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A91612**	RunNo: **91612**
Prep Date:	Analysis Date: **10/6/2022**	SeqNo: **3282799** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	96.8	85	115			
Beryllium	0.48	0.0020	0.5000	0	95.2	85	115			
Cadmium	0.49	0.0020	0.5000	0	97.9	85	115			
Chromium	0.48	0.0060	0.5000	0	96.5	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.9	85	115			
Nickel	0.48	0.010	0.5000	0	96.4	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			
Vanadium	0.48	0.050	0.5000	0	97.0	85	115			
Zinc	0.48	0.010	0.5000	0	95.1	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209H72**

18-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70537**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **70537**	RunNo: **91575**
Prep Date: **10/3/2022**	Analysis Date: **10/5/2022**	SeqNo: **3280686** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **MSLCSLL-70537**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **70537**	RunNo: **91575**
Prep Date: **10/3/2022**	Analysis Date: **10/5/2022**	SeqNo: **3280687** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0011	0.0010	0.001000	0	106	50	150			
Arsenic	0.0011	0.0010	0.001000	0	105	50	150			
Lead	0.00051	0.00050	0.0005000	0	103	50	150			
Selenium	0.0010	0.0010	0.001000	0	99.8	50	150			J

Sample ID: **MSLCS-70537**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **70537**	RunNo: **91575**
Prep Date: **10/3/2022**	Analysis Date: **10/5/2022**	SeqNo: **3280688** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	94.7	85	115			
Arsenic	0.024	0.0010	0.02500	0	97.2	85	115			
Lead	0.012	0.00050	0.01250	0	97.4	85	115			
Selenium	0.024	0.0010	0.02500	0	94.5	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209H72**

18-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A91522**	RunNo: **91522**
Prep Date:	Analysis Date: **10/4/2022**	SeqNo: **3278154** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A91522**	RunNo: **91522**
Prep Date:	Analysis Date: **10/4/2022**	SeqNo: **3278155** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0012	0.0010	0.001000	0	116	50	150			
Arsenic	0.0010	0.0010	0.001000	0	102	50	150			
Lead	0.00056	0.00050	0.0005000	0	111	50	150			
Selenium	0.0012	0.0010	0.001000	0	123	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A91522**	RunNo: **91522**
Prep Date:	Analysis Date: **10/4/2022**	SeqNo: **3278156** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.4	85	115			
Arsenic	0.025	0.0010	0.02500	0	98.6	85	115			
Lead	0.013	0.00050	0.01250	0	101	85	115			
Selenium	0.025	0.0010	0.02500	0	99.0	85	115			

Sample ID: **2209H72-006EMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **OW-30**	Batch ID: **A91522**	RunNo: **91522**
Prep Date:	Analysis Date: **10/4/2022**	SeqNo: **3278192** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.028	0.0010	0.02500	0	112	70	130			
Arsenic	0.028	0.0010	0.02500	0.0007565	108	70	130			
Lead	0.012	0.00050	0.01250	0.0004408	89.1	70	130			
Selenium	0.030	0.0010	0.02500	0	121	70	130			

Sample ID: **2209H72-007EMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **DUP-9-30-22**	Batch ID: **A91522**	RunNo: **91522**
Prep Date:	Analysis Date: **10/4/2022**	SeqNo: **3278195** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209H72**

18-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **2209H72-007EMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **DUP-9-30-22**	Batch ID: **A91522**	RunNo: **91522**
Prep Date:	Analysis Date: **10/4/2022**	SeqNo: **3278195** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	99.9	70	130			
Arsenic	0.026	0.0010	0.02500	0.0007284	102	70	130			
Lead	0.011	0.00050	0.01250	0	86.1	70	130			
Selenium	0.027	0.0010	0.02500	0	110	70	130			

Sample ID: **2209H72-006EMSDL**	SampType: **MSD**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **OW-30**	Batch ID: **A91522**	RunNo: **91522**
Prep Date:	Analysis Date: **10/4/2022**	SeqNo: **3278197** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.027	0.0010	0.02500	0	108	70	130	3.41	20	
Arsenic	0.028	0.0010	0.02500	0.0007565	108	70	130	0.526	20	
Lead	0.012	0.00050	0.01250	0.0004408	90.2	70	130	1.19	20	
Selenium	0.025	0.0010	0.02500	0	101	70	130	17.6	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209H72**

18-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70628**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW**	Batch ID: **70628**	RunNo: **91595**
Prep Date: **10/5/2022**	Analysis Date: **10/6/2022**	SeqNo: **3281401** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-70628**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC**	Batch ID: **70628**	RunNo: **91595**
Prep Date: **10/5/2022**	Analysis Date: **10/6/2022**	SeqNo: **3281402** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00013	0.00020	0.0001500	0	89.2	50	150			J

Sample ID: **LCS-70628**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW**	Batch ID: **70628**	RunNo: **91595**
Prep Date: **10/5/2022**	Analysis Date: **10/6/2022**	SeqNo: **3281403** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0052	0.00020	0.005000	0	104	85	115			

Sample ID: **2209H72-005DMS**	SampType: **MS**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **OW-14**	Batch ID: **70628**	RunNo: **91595**
Prep Date: **10/5/2022**	Analysis Date: **10/6/2022**	SeqNo: **3281472** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0044	0.00020	0.005000	0	89.0	75	125			

Sample ID: **2209H72-005DMSD**	SampType: **MSD**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **OW-14**	Batch ID: **70628**	RunNo: **91595**
Prep Date: **10/5/2022**	Analysis Date: **10/6/2022**	SeqNo: **3281473** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0043	0.00020	0.005000	0	86.4	75	125	2.92	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209H72**

18-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70550**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **70550**	RunNo: **91538**							
Prep Date: **10/4/2022**	Analysis Date: **10/4/2022**	SeqNo: **3279152**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-70550**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **LCSW**	Batch ID: **70550**	RunNo: **91538**							
Prep Date: **10/4/2022**	Analysis Date: **10/4/2022**	SeqNo: **3279153**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.12	0.010	0.1000	0	117	70	130			

Sample ID: **LCSD-70550**	SampType: **LCSD**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **LCSS02**	Batch ID: **70550**	RunNo: **91538**							
Prep Date: **10/4/2022**	Analysis Date: **10/4/2022**	SeqNo: **3279154**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.10	0.010	0.1000	0	99.8	70	130	16.0	20	

Sample ID: **2209H72-002BMS**	SampType: **MS**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **MW-4**	Batch ID: **70550**	RunNo: **91538**							
Prep Date: **10/4/2022**	Analysis Date: **10/5/2022**	SeqNo: **3279155**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.075	0.0094	0.09383	0	79.8	65	135			

Sample ID: **MB-70550**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **70550**	RunNo: **91538**							
Prep Date: **10/4/2022**	Analysis Date: **10/4/2022**	SeqNo: **3279176**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **MB-70551**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **70551**	RunNo: **91697**							
Prep Date: **10/10/2022**	Analysis Date: **10/10/2022**	SeqNo: **3286136**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209H72**

18-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **LCS-70551**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW**	Batch ID: **70551**	RunNo: **91697**
Prep Date: **10/10/2022**	Analysis Date: **10/10/2022**	SeqNo: **3286137** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.098	0.010	0.1000	0	97.7	70	130			

Sample ID: **LCSD-70551**	SampType: **LCSD**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSS02**	Batch ID: **70551**	RunNo: **91697**
Prep Date: **10/10/2022**	Analysis Date: **10/10/2022**	SeqNo: **3286138** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.098	0.010	0.1000	0	97.6	70	130	0.0543	20	

Sample ID: **MB-70551**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **70551**	RunNo: **91697**
Prep Date: **10/10/2022**	Analysis Date: **10/10/2022**	SeqNo: **3286155** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209H72**

18-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70553**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **PBW**	Batch ID: **70553**	RunNo: **91533**
Prep Date: **10/3/2022**	Analysis Date: **10/4/2022**	SeqNo: **3278987** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.045	0.064								J
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.029		0.03750		77.7	42.2	138			

Sample ID: **LCS-70553**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSW**	Batch ID: **70553**	RunNo: **91533**
Prep Date: **10/3/2022**	Analysis Date: **10/4/2022**	SeqNo: **3278988** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.17	0.064	0.1875	0	88.5	31.7	75.4			S
Surr: DNOP	0.016		0.01875		82.9	42.2	138			

Sample ID: **LCSD-70553**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02**	Batch ID: **70553**	RunNo: **91533**
Prep Date: **10/3/2022**	Analysis Date: **10/4/2022**	SeqNo: **3278989** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	1.0	0.064	0.1875	0	537	31.7	75.4	143	20	RS
Surr: DNOP	0.018		0.01875		96.7	42.2	138	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209H72**

18-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **R91497**	RunNo: **91497**
Prep Date:	Analysis Date: **10/3/2022**	SeqNo: **3277236** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.49	0.050	0.5000	0	97.4	80	120			
Surr: BFB	46		20.00		229	70	130			S

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **R91497**	RunNo: **91497**
Prep Date:	Analysis Date: **10/3/2022**	SeqNo: **3277237** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	21		20.00		103	70	130			

Sample ID: **2209h72-002a ms**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **MW-4**	Batch ID: **R91497**	RunNo: **91497**
Prep Date:	Analysis Date: **10/3/2022**	SeqNo: **3277245** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.48	0.050	0.5000	0	95.8	70	130			
Surr: BFB	43		20.00		217	70	130			S

Sample ID: **2209H72-002A MSD**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **MW-4**	Batch ID: **R91497**	RunNo: **91497**
Prep Date:	Analysis Date: **10/3/2022**	SeqNo: **3277246** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.44	0.050	0.5000	0	87.7	70	130	8.85	20	
Surr: BFB	43		20.00		215	70	130	0	0	S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209H72**

18-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R91600**	RunNo: **91600**
Prep Date:	Analysis Date: **10/6/2022**	SeqNo: **3281749** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	97.3	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Chlorobenzene	21	1.0	20.00	0	105	70	130			
1,1-Dichloroethene	18	1.0	20.00	0	89.0	70	130			
Trichloroethene (TCE)	19	1.0	20.00	0	92.9	70	130			
Surr: 1,2-Dichloroethane-d4	9.7		10.00		97.4	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	9.6		10.00		95.9	70	130			
Surr: Toluene-d8	9.6		10.00		96.1	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R91600**	RunNo: **91600**
Prep Date:	Analysis Date: **10/6/2022**	SeqNo: **3282580** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209H72**

18-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R91600**	RunNo: **91600**
Prep Date:	Analysis Date: **10/6/2022**	SeqNo: **3282580** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Styrene	ND	1.0								
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.5		10.00		95.3	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	9.7		10.00		97.0	70	130			
Surr: Toluene-d8	9.6		10.00		95.8	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209H72**

18-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70583**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **70583**	RunNo: **91785**
Prep Date: **10/4/2022**	Analysis Date: **10/13/2022**	SeqNo: **3291295** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Anthracene	ND	10								
Benz(a)anthracene	ND	5.0								
Benzo(b)fluoranthene	ND	10								
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	10								
2,4-Dinitrophenol	ND	20								
Fluoranthene	ND	10								
Fluorene	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
1-Methylnaphthalene	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
Naphthalene	ND	5.0								
Phenanthrene	ND	10								
Phenol	ND	20								
Pyrene	ND	10								
Pyridine	ND	40								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	39		200.0		19.5	15	84.5			
Surr: Phenol-d5	57		200.0		28.7	15	67			
Surr: 2,4,6-Tribromophenol	38		200.0		19.0	15	108			
Surr: Nitrobenzene-d5	58		100.0		57.6	16.8	112			
Surr: 2-Fluorobiphenyl	55		100.0		54.6	15	101			
Surr: 4-Terphenyl-d14	73		100.0		73.0	34.4	134			

Sample ID: **LCS-70583**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **70583**	RunNo: **91785**
Prep Date: **10/4/2022**	Analysis Date: **10/13/2022**	SeqNo: **3291296** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209H72**

18-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **LCS-70583**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **70583**	RunNo: **91785**
Prep Date: **10/4/2022**	Analysis Date: **10/13/2022**	SeqNo: **3291296** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	67	10	100.0	0	67.2	21.3	104			
1,4-Dichlorobenzene	49	5.0	100.0	0	48.7	15	89.8			
Phenol	87	20	200.0	0	43.3	17	61.1			
Pyrene	75	10	100.0	0	75.2	61	123			
Surr: 2-Fluorophenol	110		200.0		53.0	15	84.5			
Surr: Phenol-d5	82		200.0		41.0	15	67			
Surr: 2,4,6-Tribromophenol	150		200.0		72.9	15	108			
Surr: Nitrobenzene-d5	67		100.0		66.7	16.8	112			
Surr: 2-Fluorobiphenyl	64		100.0		64.4	15	101			
Surr: 4-Terphenyl-d14	87		100.0		86.5	34.4	134			

Sample ID: **LCSD-70583**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **70583**	RunNo: **91785**
Prep Date: **10/4/2022**	Analysis Date: **10/13/2022**	SeqNo: **3291297** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	62	10	100.0	0	62.1	21.3	104	7.87	45.3	
1,4-Dichlorobenzene	46	5.0	100.0	0	46.2	15	89.8	5.27	39.6	
Phenol	85	20	200.0	0	42.5	17	61.1	1.79	42.5	
Pyrene	73	10	100.0	0	72.8	61	123	3.22	11.8	
Surr: 2-Fluorophenol	100		200.0		50.6	15	84.5	0	0	
Surr: Phenol-d5	80		200.0		39.8	15	67	0	0	
Surr: 2,4,6-Tribromophenol	130		200.0		66.5	15	108	0	0	
Surr: Nitrobenzene-d5	66		100.0		66.5	16.8	112	0	0	
Surr: 2-Fluorobiphenyl	58		100.0		58.5	15	101	0	0	
Surr: 4-Terphenyl-d14	87		100.0		86.9	34.4	134	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209H72**

18-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **mb-70583**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **70583**	RunNo: **91615**
Prep Date: **10/4/2022**	Analysis Date: **10/5/2022**	SeqNo: **3282374** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.30								
1-Methylnaphthalene	ND	0.30								
2-Methylnaphthalene	ND	0.30								
Acenaphthene	ND	0.30								
Fluorene	ND	0.30								
Phenanthrene	ND	0.30								
Anthracene	ND	0.30								
Fluoranthene	ND	0.30								
Pyrene	ND	1.0								
Benz(a)anthracene	ND	0.30								
Chrysene	ND	0.30								
Benzo(b)fluoranthene	ND	0.30								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	66		100.0		66.0	15	108			
Surr: 2,4,6-Tribromophenol	38		200.0		19.0	15	112			
Surr: 2-Fluorobiphenyl	55		100.0		55.1	15	107			
Surr: 4-Terphenyl-d14	70		100.0		69.9	15	166			

Sample ID: **LCS-70583 LF**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **70583**	RunNo: **91615**
Prep Date: **10/4/2022**	Analysis Date: **10/5/2022**	SeqNo: **3282375** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.98	1.0	2.000	0	49.0	15	60.5			J
Naphthalene	1.4	0.30	2.000	0	71.0	15	78.3			
1-Methylnaphthalene	1.4	0.30	2.000	0	71.0	15	79.6			
2-Methylnaphthalene	1.4	0.30	2.000	0	72.0	15	78.6			
Acenaphthene	1.5	0.30	2.000	0	76.0	15	92			
Fluorene	1.6	0.30	2.000	0	80.0	15	96			
Phenanthrene	1.6	0.30	2.000	0	80.0	21	103			
Anthracene	1.7	0.30	2.000	0	86.0	21.1	106			
Fluoranthene	1.8	0.30	2.000	0	92.0	32.8	119			
Pyrene	1.6	1.0	2.000	0	80.0	34.1	110			
Benz(a)anthracene	2.0	0.30	2.000	0	100	32	132			
Chrysene	1.6	0.30	2.000	0	78.0	31.3	112			
Benzo(b)fluoranthene	1.8	0.30	2.000	0	91.0	34.1	119			
Indeno(1,2,3-cd)pyrene	2.0	0.30	2.000	0	99.0	24.7	152			
Surr: Nitrobenzene-d5	85		100.0		85.2	15	108			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209H72**

18-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **LCS-70583 LF**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **70583**	RunNo: **91615**
Prep Date: **10/4/2022**	Analysis Date: **10/5/2022**	SeqNo: **3282375** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	91		200.0		45.7	15	112			
Surr: 2-Fluorobiphenyl	72		100.0		71.5	15	107			
Surr: 4-Terphenyl-d14	70		100.0		69.8	15	166			

Sample ID: **LCSD-70583 LF**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02**	Batch ID: **70583**	RunNo: **91615**
Prep Date: **10/4/2022**	Analysis Date: **10/5/2022**	SeqNo: **3282376** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	1.2	1.0	2.000	0	58.0	15	60.5	16.8	29.7	
Naphthalene	1.7	0.30	2.000	0	84.0	15	78.3	16.8	31.7	S
1-Methylnaphthalene	1.7	0.30	2.000	0	85.0	15	79.6	17.9	31.4	S
2-Methylnaphthalene	1.7	0.30	2.000	0	85.0	15	78.6	16.6	30.5	S
Acenaphthene	1.8	0.30	2.000	0	91.0	15	92	18.0	30.5	
Fluorene	1.9	0.30	2.000	0	96.0	15	96	18.2	25.1	S
Phenanthrene	1.9	0.30	2.000	0	97.0	21	103	19.2	26.4	
Anthracene	2.1	0.30	2.000	0	103	21.1	106	18.0	14.4	R
Fluoranthene	2.2	0.30	2.000	0	111	32.8	119	18.7	14.8	R
Pyrene	1.9	1.0	2.000	0	97.0	34.1	110	19.2	19.2	R
Benz(a)anthracene	2.4	0.30	2.000	0	121	32	132	19.0	29.3	
Chrysene	1.9	0.30	2.000	0	94.0	31.3	112	18.6	19	
Benzo(b)fluoranthene	2.2	0.30	2.000	0	111	34.1	119	19.8	31.6	
Indeno(1,2,3-cd)pyrene	2.5	0.30	2.000	0	124	24.7	152	22.4	21.3	R
Surr: Nitrobenzene-d5	85		100.0		85.0	15	108	0	0	
Surr: 2,4,6-Tribromophenol	91		200.0		45.4	15	112	0	0	
Surr: 2-Fluorobiphenyl	71		100.0		71.4	15	107	0	0	
Surr: 4-Terphenyl-d14	70		100.0		70.5	15	166	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Marathon Work Order Number: 2209H72 RcptNo: 1

Received By: Kasandra Payan 9/30/2022 2:35:00 PM

Completed By: Sean Livingston 9/30/2022 2:41:40 PM

Reviewed By: KPA 9-30-22

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☐ No ☑ NA ☐
   Samples were collected the same day and chilled.
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐ SR 9/30/22
8. Was preservative added to bottles? Yes ☑ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☑ No ☐ NA ☐
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: 14 7 (<2 or >12 unless noted)
Adjusted? yes
Checked by: SR 9/30/22

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

16. Additional remarks: added ~0.4mL HNO_3 to samples 003E, 006E, 007E for dissolved Metal analysis, and ~0.5mL HNO_3 to 0030, 0050 for total metals analysis, checked for proper pH <2 SR 9/30/22 Samples 004F + 006F did NOT pH

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	8.1	Good				
2	5.6	Good				
3	9.1	Good				
4	6.2	Good				

Released to Imaging: 4/21/2023 9:40:26 AM
Received by OCD: 4/21/2023 9:21:57 AM

Chain-of-Custody Record

nt: Marathon Gallup Refinery

ling Address: 92 Giant Crossing Road

Jamestown, NM,87347

ne #: 808-640-1823

il or Fax#:

QC Package:

tandard ☐ Level 4 (Full Validation)

editation: ☐ Az Compliance

ELAC ☐ Other

DD (Type)

Turn-Around Time:

X Standard Rush

Project Name:

2022 GW Sampling ~~1st~~ 3rd Quarter

Project #: **697-080-001**

Project Manager:

Lesli Alexander/Mackensie Swift

Sampler:

On Ice: ☑ Yes ☐ No

# of Coolers: 4

Cooler Temp(including CF):

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

e	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2209H72	See Analyte List	8260B: VOC	8270C: SVOC	8270C SIM: PAH, 1,4 Dioxane	8015: TPH GRO/DRO/MRO	E200.7: Metals	E200.7: Dissolved Metals	E245.1 Mercury	E504.1: EDB	E335.4: Cyanide Subbed		537.1: PFAS	SM 5201B: BOD	410.4: COD	SM9223B: E. Coli
9/30	7:45		EB-9-30-22	13		001	X	X	X	X	X	X	X	X	X	X					
9/30	7:55		MW-4	13		002	X	X	X	X	X	X	X	X	X	X					
9/30	8:15		SMW-2	13		003	X	X	X	X	X	X	X	X	X	X					
9/30	8:30		OW-59	13		004	X	X	X	X	X	X	X	X	X	X					
9/30	8:50		OW-14	13		005	X	X	X	X	X	X	X	X	X	X					
9/30	9:15		OW-30	13		006	X	X	X	X	X	X	X	X	X	X					
9/30	—		DUP-9-30-22	13		007	X	X	X	X	X	X	X	X	X	X					
9/30	9:15		FB-9-30-22	3		008	X	X	X												

	Time:	Relinquished by:	Received by:	Via:	Date	Time
9/30		Hilario Tapia		~~FED~~ courier	9.30.22	
	Time:	Relinquished by:	Received by:	Via:	Date	Time
				KPU 9.30.22		14:35

8.1-0=8.1 6.2-0=6.2
5.6-0=5.6
9.1-0=9.1

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 04, 2022

Lesli Alexander

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX (505) 632-3911

RE: 2022 GW Sampling 3rd Quarter OrderNo.: 2209349

Dear Lesli Alexander:

Hall Environmental Analysis Laboratory received 12 sample(s) on 9/8/2022 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued October 03, 2022.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **2209349**
Date: **10/4/2022**

CLIENT: Marathon
Project: 2022 GW Sampling 3rd Quarter

Analytical Notes Regarding this Workorder are listed below:

"S" flagged surrogates denote that the surrogate recovery was outstide of the standard limits.

Analytical Notes Regarding EPA Method 8270 and 8270 SIMS:
1-methylnaphthalene was reported by EPA Method 8270 instead of EPA Method 8270SIMs becuase of its elevated concentration for sample OW-55.

Naphthalene and 2-methylnaphthalene were reported by EPA Method 8270 instead of EPA Method 8270SIMs becuase of their elevated concentrations for sample OW-66.

Analytical Notes Regarding EPA Method 8015DRO:
The LCS/LCSD had slighly elevated recoveries.

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-9-7-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 8:00:00 AM
Lab ID: 2209349-001A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	9/13/2022 12:27:00 PM	R90998
Surr: BFB	109	0	70-130		%Rec	1	9/13/2022 12:27:00 PM	R90998
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	9/13/2022 11:07:30 AM	R91002
Toluene	ND	0.20	1.0		µg/L	1	9/13/2022 11:07:30 AM	R91002
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/13/2022 11:07:30 AM	R91002
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/13/2022 11:07:30 AM	R91002
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/13/2022 11:07:30 AM	R91002
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 11:07:30 AM	R91002
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/13/2022 11:07:30 AM	R91002
Acetone	18	2.5	10		µg/L	1	9/13/2022 11:07:30 AM	R91002
Bromomethane	ND	0.85	3.0		µg/L	1	9/13/2022 11:07:30 AM	R91002
2-Butanone	22	2.0	10		µg/L	1	9/13/2022 11:07:30 AM	R91002
Carbon disulfide	ND	0.59	10		µg/L	1	9/13/2022 11:07:30 AM	R91002
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/13/2022 11:07:30 AM	R91002
Chloroform	ND	0.13	1.0		µg/L	1	9/13/2022 11:07:30 AM	R91002
Chloromethane	ND	0.41	3.0		µg/L	1	9/13/2022 11:07:30 AM	R91002
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/13/2022 11:07:30 AM	R91002
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/13/2022 11:07:30 AM	R91002
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/13/2022 11:07:30 AM	R91002
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 11:07:30 AM	R91002
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/13/2022 11:07:30 AM	R91002
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/13/2022 11:07:30 AM	R91002
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/13/2022 11:07:30 AM	R91002
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 11:07:30 AM	R91002
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/13/2022 11:07:30 AM	R91002
Styrene	ND	0.14	1.0		µg/L	1	9/13/2022 11:07:30 AM	R91002
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/13/2022 11:07:30 AM	R91002
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/13/2022 11:07:30 AM	R91002
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/13/2022 11:07:30 AM	R91002
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/13/2022 11:07:30 AM	R91002
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/13/2022 11:07:30 AM	R91002
Surr: 1,2-Dichloroethane-d4	102	0	70-130		%Rec	1	9/13/2022 11:07:30 AM	R91002
Surr: 4-Bromofluorobenzene	106	0	70-130		%Rec	1	9/13/2022 11:07:30 AM	R91002
Surr: Dibromofluoromethane	112	0	70-130		%Rec	1	9/13/2022 11:07:30 AM	R91002
Surr: Toluene-d8	103	0	70-130		%Rec	1	9/13/2022 11:07:30 AM	R91002

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-9-7-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 8:00:00 AM
Lab ID: 2209349-001B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0093		µg/L	1	9/13/2022 5:23:42 PM	70123

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-9-7-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 8:00:00 AM
Lab ID: 2209349-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.64	0.016	0.064		mg/L	1	9/9/2022 4:51:15 PM	70050
Motor Oil Range Organics (MRO)	0.91	0.052	0.080		mg/L	1	9/9/2022 4:51:15 PM	70050
Surr: DNOP	100	0	42.2-138		%Rec	1	9/9/2022 4:51:15 PM	70050
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	9/13/2022 3:12:22 PM	70053
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/13/2022 3:12:22 PM	70053
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	9/13/2022 3:12:22 PM	70053
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/13/2022 3:12:22 PM	70053
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/13/2022 3:12:22 PM	70053
Diethyl phthalate	ND	6.0	10		µg/L	1	9/13/2022 3:12:22 PM	70053
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/13/2022 3:12:22 PM	70053
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	9/13/2022 3:12:22 PM	70053
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/13/2022 3:12:22 PM	70053
2-Methylphenol	ND	5.0	10		µg/L	1	9/13/2022 3:12:22 PM	70053
3+4-Methylphenol	ND	5.1	10		µg/L	1	9/13/2022 3:12:22 PM	70053
Phenol	ND	18	20		µg/L	1	9/13/2022 3:12:22 PM	70053
Pyridine	ND	14	40		µg/L	1	9/13/2022 3:12:22 PM	70053
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/13/2022 3:12:22 PM	70053
Surr: 2-Fluorophenol	52.8	0	15-84.5		%Rec	1	9/13/2022 3:12:22 PM	70053
Surr: Phenol-d5	40.9	0	15-67		%Rec	1	9/13/2022 3:12:22 PM	70053
Surr: 2,4,6-Tribromophenol	55.3	0	15-108		%Rec	1	9/13/2022 3:12:22 PM	70053
Surr: Nitrobenzene-d5	60.9	0	16.8-112		%Rec	1	9/13/2022 3:12:22 PM	70053
Surr: 2-Fluorobiphenyl	59.4	0	15-101		%Rec	1	9/13/2022 3:12:22 PM	70053
Surr: 4-Terphenyl-d14	76.6	0	34.4-134		%Rec	1	9/13/2022 3:12:22 PM	70053
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	9/12/2022 11:19:00 AM	70053
Naphthalene	ND	0.20	0.30		µg/L	1	9/12/2022 11:19:00 AM	70053
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	9/12/2022 11:19:00 AM	70053
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	9/12/2022 11:19:00 AM	70053
Acenaphthene	ND	0.14	0.30		µg/L	1	9/12/2022 11:19:00 AM	70053
Fluorene	ND	0.095	0.30		µg/L	1	9/12/2022 11:19:00 AM	70053
Phenanthrene	ND	0.16	0.30		µg/L	1	9/12/2022 11:19:00 AM	70053
Anthracene	ND	0.14	0.30		µg/L	1	9/12/2022 11:19:00 AM	70053
Fluoranthene	ND	0.14	0.30		µg/L	1	9/12/2022 11:19:00 AM	70053
Pyrene	ND	0.32	1.0		µg/L	1	9/12/2022 11:19:00 AM	70053
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/12/2022 11:19:00 AM	70053
Chrysene	ND	0.25	0.30		µg/L	1	9/12/2022 11:19:00 AM	70053
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/12/2022 11:19:00 AM	70053
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/12/2022 11:19:00 AM	70053

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-9-7-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 8:00:00 AM
Lab ID: 2209349-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	58.9	0	31.6-100		%Rec	1	9/12/2022 11:19:00 AM	70053
Surr: 2-Fluorobiphenyl	57.7	0	26.7-90.1		%Rec	1	9/12/2022 11:19:00 AM	70053
Surr: 4-Terphenyl-d14	78.9	0	72.3-147		%Rec	1	9/12/2022 11:19:00 AM	70053

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-9-7-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 8:00:00 AM
Lab ID: 2209349-001D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	ND	0.0016	0.0030		mg/L	1	9/9/2022 3:02:49 PM	70055
Beryllium	ND	0.00088	0.0020		mg/L	1	9/9/2022 3:02:49 PM	70055
Cadmium	ND	0.0018	0.0020		mg/L	1	9/9/2022 3:02:49 PM	70055
Chromium	ND	0.0020	0.0060		mg/L	1	9/9/2022 3:02:49 PM	70055
Cobalt	ND	0.0035	0.0060		mg/L	1	9/9/2022 3:02:49 PM	70055
Nickel	ND	0.0053	0.010		mg/L	1	9/9/2022 3:02:49 PM	70055
Silver	ND	0.0018	0.0050		mg/L	1	9/9/2022 3:02:49 PM	70055
Vanadium	ND	0.0035	0.050		mg/L	1	9/9/2022 3:02:49 PM	70055
Zinc	0.0062	0.0039	0.010	J	mg/L	1	9/9/2022 3:02:49 PM	70055
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/12/2022 1:00:34 PM	70055
Arsenic	ND	0.00013	0.0010		mg/L	1	9/12/2022 1:00:34 PM	70055
Lead	ND	0.000061	0.00050		mg/L	1	9/12/2022 1:00:34 PM	70055
Selenium	ND	0.00037	0.0010		mg/L	1	9/12/2022 1:00:34 PM	70055
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00018	0.000091	0.00020	J	mg/L	1	9/17/2022 9:29:12 AM	70231

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-9-7-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 8:00:00 AM
Lab ID: 2209349-001E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	ND	0.0011	0.0020		mg/L	1	9/15/2022 5:05:17 PM	B91088
Beryllium	ND	0.00088	0.0020		mg/L	1	9/15/2022 5:05:17 PM	B91088
Cadmium	ND	0.00098	0.0020		mg/L	1	9/15/2022 5:05:17 PM	B91088
Chromium	0.0025	0.0020	0.0060	J	mg/L	1	9/15/2022 5:05:17 PM	B91088
Cobalt	ND	0.0024	0.0060		mg/L	1	9/15/2022 5:05:17 PM	B91088
Nickel	ND	0.0033	0.010		mg/L	1	9/15/2022 5:05:17 PM	B91088
Silver	ND	0.0013	0.0050		mg/L	1	9/15/2022 5:05:17 PM	B91088
Vanadium	ND	0.0017	0.050		mg/L	1	9/15/2022 5:05:17 PM	B91088
Zinc	0.0046	0.0032	0.010	J	mg/L	1	9/15/2022 5:05:17 PM	B91088
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/13/2022 1:44:09 PM	A91030
Arsenic	ND	0.00012	0.0010		mg/L	1	9/13/2022 1:44:09 PM	A91030
Lead	ND	0.000057	0.00050		mg/L	1	9/13/2022 1:44:09 PM	A91030
Selenium	ND	0.00034	0.0010		mg/L	1	9/13/2022 1:44:09 PM	A91030
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00019	0.000091	0.00020	J	mg/L	1	9/17/2022 9:31:18 AM	70231

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-9-7-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 8:00:00 AM
Lab ID: 2209349-001F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PAC**	
Cyanide	ND	1.80	5.00		ug/L	1	9/16/2022 12:28:00 PM	R91489

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-50
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 8:30:00 AM
Lab ID: 2209349-002A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.055	0.0090	0.050		mg/L	1	9/13/2022 12:47:00 PM	R90998
Surr: BFB	103	0	70-130		%Rec	1	9/13/2022 12:47:00 PM	R90998
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	9/13/2022 11:36:05 AM	R91002
Toluene	ND	0.20	1.0		µg/L	1	9/13/2022 11:36:05 AM	R91002
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/13/2022 11:36:05 AM	R91002
Methyl tert-butyl ether (MTBE)	56	0.39	1.0		µg/L	1	9/13/2022 11:36:05 AM	R91002
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/13/2022 11:36:05 AM	R91002
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 11:36:05 AM	R91002
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/13/2022 11:36:05 AM	R91002
Acetone	ND	2.5	10		µg/L	1	9/13/2022 11:36:05 AM	R91002
Bromomethane	ND	0.85	3.0		µg/L	1	9/13/2022 11:36:05 AM	R91002
2-Butanone	ND	2.0	10		µg/L	1	9/13/2022 11:36:05 AM	R91002
Carbon disulfide	ND	0.59	10		µg/L	1	9/13/2022 11:36:05 AM	R91002
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/13/2022 11:36:05 AM	R91002
Chloroform	ND	0.13	1.0		µg/L	1	9/13/2022 11:36:05 AM	R91002
Chloromethane	ND	0.41	3.0		µg/L	1	9/13/2022 11:36:05 AM	R91002
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/13/2022 11:36:05 AM	R91002
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/13/2022 11:36:05 AM	R91002
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/13/2022 11:36:05 AM	R91002
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 11:36:05 AM	R91002
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/13/2022 11:36:05 AM	R91002
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/13/2022 11:36:05 AM	R91002
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/13/2022 11:36:05 AM	R91002
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 11:36:05 AM	R91002
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/13/2022 11:36:05 AM	R91002
Styrene	ND	0.14	1.0		µg/L	1	9/13/2022 11:36:05 AM	R91002
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/13/2022 11:36:05 AM	R91002
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/13/2022 11:36:05 AM	R91002
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/13/2022 11:36:05 AM	R91002
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/13/2022 11:36:05 AM	R91002
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/13/2022 11:36:05 AM	R91002
Surr: 1,2-Dichloroethane-d4	104	0	70-130		%Rec	1	9/13/2022 11:36:05 AM	R91002
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	9/13/2022 11:36:05 AM	R91002
Surr: Dibromofluoromethane	113	0	70-130		%Rec	1	9/13/2022 11:36:05 AM	R91002
Surr: Toluene-d8	103	0	70-130		%Rec	1	9/13/2022 11:36:05 AM	R91002

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-50
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 8:30:00 AM
Lab ID: 2209349-002B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0093		µg/L	1	9/13/2022 5:38:49 PM	70123

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-50
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 8:30:00 AM
Lab ID: 2209349-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.065	0.016	0.064		mg/L	1	9/9/2022 5:14:58 PM	70050
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	9/9/2022 5:14:58 PM	70050
Surr: DNOP	63.2	0	42.2-138		%Rec	1	9/9/2022 5:14:58 PM	70050
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	9/13/2022 3:54:27 PM	70053
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/13/2022 3:54:27 PM	70053
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	9/13/2022 3:54:27 PM	70053
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/13/2022 3:54:27 PM	70053
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/13/2022 3:54:27 PM	70053
Diethyl phthalate	ND	6.0	10		µg/L	1	9/13/2022 3:54:27 PM	70053
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/13/2022 3:54:27 PM	70053
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	9/13/2022 3:54:27 PM	70053
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/13/2022 3:54:27 PM	70053
2-Methylphenol	ND	5.0	10		µg/L	1	9/13/2022 3:54:27 PM	70053
3+4-Methylphenol	ND	5.1	10		µg/L	1	9/13/2022 3:54:27 PM	70053
Phenol	ND	18	20		µg/L	1	9/13/2022 3:54:27 PM	70053
Pyridine	ND	14	40		µg/L	1	9/13/2022 3:54:27 PM	70053
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/13/2022 3:54:27 PM	70053
Surr: 2-Fluorophenol	45.0	0	15-84.5		%Rec	1	9/13/2022 3:54:27 PM	70053
Surr: Phenol-d5	35.2	0	15-67		%Rec	1	9/13/2022 3:54:27 PM	70053
Surr: 2,4,6-Tribromophenol	53.9	0	15-108		%Rec	1	9/13/2022 3:54:27 PM	70053
Surr: Nitrobenzene-d5	58.0	0	16.8-112		%Rec	1	9/13/2022 3:54:27 PM	70053
Surr: 2-Fluorobiphenyl	57.6	0	15-101		%Rec	1	9/13/2022 3:54:27 PM	70053
Surr: 4-Terphenyl-d14	75.6	0	34.4-134		%Rec	1	9/13/2022 3:54:27 PM	70053
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	9/12/2022 12:03:00 PM	70053
Naphthalene	ND	0.20	0.30		µg/L	1	9/12/2022 12:03:00 PM	70053
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	9/12/2022 12:03:00 PM	70053
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	9/12/2022 12:03:00 PM	70053
Acenaphthene	ND	0.14	0.30		µg/L	1	9/12/2022 12:03:00 PM	70053
Fluorene	ND	0.095	0.30		µg/L	1	9/12/2022 12:03:00 PM	70053
Phenanthrene	ND	0.16	0.30		µg/L	1	9/12/2022 12:03:00 PM	70053
Anthracene	ND	0.14	0.30		µg/L	1	9/12/2022 12:03:00 PM	70053
Fluoranthene	ND	0.14	0.30		µg/L	1	9/12/2022 12:03:00 PM	70053
Pyrene	ND	0.32	1.0		µg/L	1	9/12/2022 12:03:00 PM	70053
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/12/2022 12:03:00 PM	70053
Chrysene	ND	0.25	0.30		µg/L	1	9/12/2022 12:03:00 PM	70053
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/12/2022 12:03:00 PM	70053
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/12/2022 12:03:00 PM	70053

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-50
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 8:30:00 AM
Lab ID: 2209349-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	54.9	0	31.6-100		%Rec	1	9/12/2022 12:03:00 PM	70053
Surr: 2-Fluorobiphenyl	54.3	0	26.7-90.1		%Rec	1	9/12/2022 12:03:00 PM	70053
Surr: 4-Terphenyl-d14	74.8	0	72.3-147		%Rec	1	9/12/2022 12:03:00 PM	70053

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-50
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 8:30:00 AM
Lab ID: 2209349-002D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.047	0.0016	0.0030		mg/L	1	9/9/2022 3:17:52 PM	70055
Beryllium	ND	0.00088	0.0020		mg/L	1	9/9/2022 3:17:52 PM	70055
Cadmium	ND	0.0018	0.0020		mg/L	1	9/9/2022 3:17:52 PM	70055
Chromium	ND	0.0020	0.0060		mg/L	1	9/9/2022 3:17:52 PM	70055
Cobalt	ND	0.0035	0.0060		mg/L	1	9/9/2022 3:17:52 PM	70055
Nickel	ND	0.0053	0.010		mg/L	1	9/9/2022 3:17:52 PM	70055
Silver	ND	0.0018	0.0050		mg/L	1	9/9/2022 3:17:52 PM	70055
Vanadium	ND	0.0035	0.050		mg/L	1	9/9/2022 3:17:52 PM	70055
Zinc	ND	0.0039	0.010		mg/L	1	9/9/2022 3:17:52 PM	70055
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/12/2022 1:03:01 PM	70055
Arsenic	0.0020	0.00013	0.0010		mg/L	1	9/12/2022 1:03:01 PM	70055
Lead	0.000078	0.000061	0.00050	J	mg/L	1	9/12/2022 1:03:01 PM	70055
Selenium	ND	0.00037	0.0010		mg/L	1	9/12/2022 1:03:01 PM	70055
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00019	0.000091	0.00020	J	mg/L	1	9/17/2022 9:33:24 AM	70231

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-50
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 8:30:00 AM
Lab ID: 2209349-002E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.052	0.0011	0.0020		mg/L	1	9/15/2022 5:09:33 PM	B91088
Beryllium	ND	0.00088	0.0020		mg/L	1	9/15/2022 5:09:33 PM	B91088
Cadmium	ND	0.00098	0.0020		mg/L	1	9/15/2022 5:09:33 PM	B91088
Chromium	ND	0.0020	0.0060		mg/L	1	9/15/2022 5:09:33 PM	B91088
Cobalt	ND	0.0024	0.0060		mg/L	1	9/15/2022 5:09:33 PM	B91088
Nickel	ND	0.0033	0.010		mg/L	1	9/15/2022 5:09:33 PM	B91088
Silver	ND	0.0013	0.0050		mg/L	1	9/15/2022 5:09:33 PM	B91088
Vanadium	ND	0.0017	0.050		mg/L	1	9/15/2022 5:09:33 PM	B91088
Zinc	0.044	0.0032	0.010		mg/L	1	9/15/2022 5:09:33 PM	B91088
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/13/2022 1:52:14 PM	A91030
Arsenic	0.0018	0.00012	0.0010		mg/L	1	9/13/2022 1:52:14 PM	A91030
Lead	ND	0.000057	0.00050		mg/L	1	9/13/2022 1:52:14 PM	A91030
Selenium	ND	0.00034	0.0010		mg/L	1	9/13/2022 1:52:14 PM	A91030
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00018	0.000091	0.00020	J	mg/L	1	9/17/2022 9:35:29 AM	70231

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-50
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 8:30:00 AM
Lab ID: 2209349-002F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PAC**	
Cyanide	2.30	1.80	5.00	J	ug/L	1	9/16/2022 12:30:00 PM	R91489

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-52
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 9:00:00 AM
Lab ID: 2209349-003A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	9/13/2022 1:06:00 PM	R90998
Surr: BFB	110	0	70-130		%Rec	1	9/13/2022 1:06:00 PM	R90998
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	9/13/2022 1:01:48 PM	R91002
Toluene	ND	0.20	1.0		µg/L	1	9/13/2022 1:01:48 PM	R91002
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/13/2022 1:01:48 PM	R91002
Methyl tert-butyl ether (MTBE)	4.1	0.39	1.0		µg/L	1	9/13/2022 1:01:48 PM	R91002
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/13/2022 1:01:48 PM	R91002
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 1:01:48 PM	R91002
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/13/2022 1:01:48 PM	R91002
Acetone	ND	2.5	10		µg/L	1	9/13/2022 1:01:48 PM	R91002
Bromomethane	ND	0.85	3.0		µg/L	1	9/13/2022 1:01:48 PM	R91002
2-Butanone	ND	2.0	10		µg/L	1	9/13/2022 1:01:48 PM	R91002
Carbon disulfide	ND	0.59	10		µg/L	1	9/13/2022 1:01:48 PM	R91002
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/13/2022 1:01:48 PM	R91002
Chloroform	ND	0.13	1.0		µg/L	1	9/13/2022 1:01:48 PM	R91002
Chloromethane	ND	0.41	3.0		µg/L	1	9/13/2022 1:01:48 PM	R91002
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/13/2022 1:01:48 PM	R91002
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/13/2022 1:01:48 PM	R91002
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/13/2022 1:01:48 PM	R91002
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 1:01:48 PM	R91002
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/13/2022 1:01:48 PM	R91002
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/13/2022 1:01:48 PM	R91002
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/13/2022 1:01:48 PM	R91002
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 1:01:48 PM	R91002
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/13/2022 1:01:48 PM	R91002
Styrene	ND	0.14	1.0		µg/L	1	9/13/2022 1:01:48 PM	R91002
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/13/2022 1:01:48 PM	R91002
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/13/2022 1:01:48 PM	R91002
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/13/2022 1:01:48 PM	R91002
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/13/2022 1:01:48 PM	R91002
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/13/2022 1:01:48 PM	R91002
Surr: 1,2-Dichloroethane-d4	104	0	70-130		%Rec	1	9/13/2022 1:01:48 PM	R91002
Surr: 4-Bromofluorobenzene	107	0	70-130		%Rec	1	9/13/2022 1:01:48 PM	R91002
Surr: Dibromofluoromethane	118	0	70-130		%Rec	1	9/13/2022 1:01:48 PM	R91002
Surr: Toluene-d8	101	0	70-130		%Rec	1	9/13/2022 1:01:48 PM	R91002

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-52
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 9:00:00 AM
Lab ID: 2209349-003B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	9/13/2022 5:54:01 PM	70123

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-52
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 9:00:00 AM
Lab ID: 2209349-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.029	0.016	0.064	J	mg/L	1	9/9/2022 5:38:46 PM	70050
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	9/9/2022 5:38:46 PM	70050
Surr: DNOP	95.6	0	42.2-138		%Rec	1	9/9/2022 5:38:46 PM	70050
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	9/13/2022 4:36:16 PM	70053
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/13/2022 4:36:16 PM	70053
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	9/13/2022 4:36:16 PM	70053
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/13/2022 4:36:16 PM	70053
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/13/2022 4:36:16 PM	70053
Diethyl phthalate	ND	6.0	10		µg/L	1	9/13/2022 4:36:16 PM	70053
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/13/2022 4:36:16 PM	70053
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	9/13/2022 4:36:16 PM	70053
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/13/2022 4:36:16 PM	70053
2-Methylphenol	ND	5.0	10		µg/L	1	9/13/2022 4:36:16 PM	70053
3+4-Methylphenol	ND	5.1	10		µg/L	1	9/13/2022 4:36:16 PM	70053
Phenol	ND	18	20		µg/L	1	9/13/2022 4:36:16 PM	70053
Pyridine	ND	14	40		µg/L	1	9/13/2022 4:36:16 PM	70053
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/13/2022 4:36:16 PM	70053
Surr: 2-Fluorophenol	48.2	0	15-84.5		%Rec	1	9/13/2022 4:36:16 PM	70053
Surr: Phenol-d5	37.4	0	15-67		%Rec	1	9/13/2022 4:36:16 PM	70053
Surr: 2,4,6-Tribromophenol	62.5	0	15-108		%Rec	1	9/13/2022 4:36:16 PM	70053
Surr: Nitrobenzene-d5	65.7	0	16.8-112		%Rec	1	9/13/2022 4:36:16 PM	70053
Surr: 2-Fluorobiphenyl	65.5	0	15-101		%Rec	1	9/13/2022 4:36:16 PM	70053
Surr: 4-Terphenyl-d14	83.2	0	34.4-134		%Rec	1	9/13/2022 4:36:16 PM	70053
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	9/12/2022 12:46:00 PM	70053
Naphthalene	ND	0.20	0.30		µg/L	1	9/12/2022 12:46:00 PM	70053
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	9/12/2022 12:46:00 PM	70053
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	9/12/2022 12:46:00 PM	70053
Acenaphthene	ND	0.14	0.30		µg/L	1	9/12/2022 12:46:00 PM	70053
Fluorene	ND	0.095	0.30		µg/L	1	9/12/2022 12:46:00 PM	70053
Phenanthrene	ND	0.16	0.30		µg/L	1	9/12/2022 12:46:00 PM	70053
Anthracene	ND	0.14	0.30		µg/L	1	9/12/2022 12:46:00 PM	70053
Fluoranthene	ND	0.14	0.30		µg/L	1	9/12/2022 12:46:00 PM	70053
Pyrene	ND	0.32	1.0		µg/L	1	9/12/2022 12:46:00 PM	70053
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/12/2022 12:46:00 PM	70053
Chrysene	ND	0.25	0.30		µg/L	1	9/12/2022 12:46:00 PM	70053
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/12/2022 12:46:00 PM	70053
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/12/2022 12:46:00 PM	70053

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-52
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 9:00:00 AM
Lab ID: 2209349-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	61.6	0	31.6-100		%Rec	1	9/12/2022 12:46:00 PM	70053
Surr: 2-Fluorobiphenyl	60.5	0	26.7-90.1		%Rec	1	9/12/2022 12:46:00 PM	70053
Surr: 4-Terphenyl-d14	76.9	0	72.3-147		%Rec	1	9/12/2022 12:46:00 PM	70053

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-52
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 9:00:00 AM
Lab ID: 2209349-003D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.038	0.0016	0.0030		mg/L	1	9/9/2022 3:21:13 PM	70055
Beryllium	ND	0.00088	0.0020		mg/L	1	9/9/2022 3:21:13 PM	70055
Cadmium	ND	0.0018	0.0020		mg/L	1	9/9/2022 3:21:13 PM	70055
Chromium	0.0020	0.0020	0.0060	J	mg/L	1	9/9/2022 3:21:13 PM	70055
Cobalt	ND	0.0035	0.0060		mg/L	1	9/9/2022 3:21:13 PM	70055
Nickel	ND	0.0053	0.010		mg/L	1	9/9/2022 3:21:13 PM	70055
Silver	ND	0.0018	0.0050		mg/L	1	9/9/2022 3:21:13 PM	70055
Vanadium	ND	0.0035	0.050		mg/L	1	9/9/2022 3:21:13 PM	70055
Zinc	ND	0.0039	0.010		mg/L	1	9/9/2022 3:21:13 PM	70055
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/12/2022 1:05:27 PM	70055
Arsenic	0.00078	0.00013	0.0010	J	mg/L	1	9/12/2022 1:05:27 PM	70055
Lead	0.00045	0.000061	0.00050	J	mg/L	1	9/12/2022 1:05:27 PM	70055
Selenium	ND	0.00037	0.0010		mg/L	1	9/12/2022 1:05:27 PM	70055
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00019	0.000091	0.00020	J	mg/L	1	9/17/2022 9:41:47 AM	70231

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-52
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 9:00:00 AM
Lab ID: 2209349-003E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.029	0.0011	0.0020		mg/L	1	9/15/2022 5:28:18 PM	B91088
Beryllium	ND	0.00088	0.0020		mg/L	1	9/15/2022 5:28:18 PM	B91088
Cadmium	ND	0.00098	0.0020		mg/L	1	9/15/2022 5:28:18 PM	B91088
Chromium	ND	0.0020	0.0060		mg/L	1	9/15/2022 5:28:18 PM	B91088
Cobalt	ND	0.0024	0.0060		mg/L	1	9/15/2022 5:28:18 PM	B91088
Nickel	ND	0.0033	0.010		mg/L	1	9/15/2022 5:28:18 PM	B91088
Silver	ND	0.0013	0.0050		mg/L	1	9/15/2022 5:28:18 PM	B91088
Vanadium	ND	0.0017	0.050		mg/L	1	9/15/2022 5:28:18 PM	B91088
Zinc	0.012	0.0032	0.010		mg/L	1	9/15/2022 5:28:18 PM	B91088
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/13/2022 1:57:38 PM	A91030
Arsenic	0.00061	0.00012	0.0010	J	mg/L	1	9/13/2022 1:57:38 PM	A91030
Lead	ND	0.000057	0.00050		mg/L	1	9/13/2022 1:57:38 PM	A91030
Selenium	ND	0.00034	0.0010		mg/L	1	9/13/2022 1:57:38 PM	A91030
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00019	0.000091	0.00020	J	mg/L	1	9/17/2022 9:43:55 AM	70231

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-52
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 9:00:00 AM
Lab ID: 2209349-003F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PAC**	
Cyanide	ND	1.80	5.00		ug/L	1	9/16/2022 12:35:00 PM	R91489

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-29
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 10:00:00 AM
Lab ID: 2209349-004A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	2.6	0.0090	0.050		mg/L	1	9/13/2022 1:26:00 PM	R90998
Surr: BFB	117	0	70-130		%Rec	1	9/13/2022 1:26:00 PM	R90998
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	9/13/2022 1:30:23 PM	R91002
Toluene	ND	0.20	1.0		µg/L	1	9/13/2022 1:30:23 PM	R91002
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/13/2022 1:30:23 PM	R91002
Methyl tert-butyl ether (MTBE)	3100	39	100		µg/L	100	9/14/2022 12:29:52 PM	R91045
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/13/2022 1:30:23 PM	R91002
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 1:30:23 PM	R91002
1,2-Dichloroethane (EDC)	0.56	0.25	1.0	J	µg/L	1	9/13/2022 1:30:23 PM	R91002
Acetone	ND	2.5	10		µg/L	1	9/13/2022 1:30:23 PM	R91002
Bromomethane	ND	0.85	3.0		µg/L	1	9/13/2022 1:30:23 PM	R91002
2-Butanone	ND	2.0	10		µg/L	1	9/13/2022 1:30:23 PM	R91002
Carbon disulfide	ND	0.59	10		µg/L	1	9/13/2022 1:30:23 PM	R91002
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/13/2022 1:30:23 PM	R91002
Chloroform	ND	0.13	1.0		µg/L	1	9/13/2022 1:30:23 PM	R91002
Chloromethane	ND	0.41	3.0		µg/L	1	9/13/2022 1:30:23 PM	R91002
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/13/2022 1:30:23 PM	R91002
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/13/2022 1:30:23 PM	R91002
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/13/2022 1:30:23 PM	R91002
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 1:30:23 PM	R91002
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/13/2022 1:30:23 PM	R91002
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/13/2022 1:30:23 PM	R91002
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/13/2022 1:30:23 PM	R91002
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 1:30:23 PM	R91002
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/13/2022 1:30:23 PM	R91002
Styrene	ND	0.14	1.0		µg/L	1	9/13/2022 1:30:23 PM	R91002
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/13/2022 1:30:23 PM	R91002
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/13/2022 1:30:23 PM	R91002
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/13/2022 1:30:23 PM	R91002
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/13/2022 1:30:23 PM	R91002
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/13/2022 1:30:23 PM	R91002
Surr: 1,2-Dichloroethane-d4	98.0	0	70-130		%Rec	1	9/13/2022 1:30:23 PM	R91002
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	9/13/2022 1:30:23 PM	R91002
Surr: Dibromofluoromethane	111	0	70-130		%Rec	1	9/13/2022 1:30:23 PM	R91002
Surr: Toluene-d8	104	0	70-130		%Rec	1	9/13/2022 1:30:23 PM	R91002

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-29
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 10:00:00 AM
Lab ID: 2209349-004B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	9/13/2022 6:09:12 PM	70123

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-29
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 10:00:00 AM
Lab ID: 2209349-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.44	0.016	0.064		mg/L	1	9/9/2022 6:02:34 PM	70050
Motor Oil Range Organics (MRO)	0.068	0.052	0.080	J	mg/L	1	9/9/2022 6:02:34 PM	70050
Surr: DNOP	99.7	0	42.2-138		%Rec	1	9/9/2022 6:02:34 PM	70050
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	9/13/2022 5:17:59 PM	70053
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/13/2022 5:17:59 PM	70053
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	9/13/2022 5:17:59 PM	70053
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/13/2022 5:17:59 PM	70053
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/13/2022 5:17:59 PM	70053
Diethyl phthalate	ND	6.0	10		µg/L	1	9/13/2022 5:17:59 PM	70053
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/13/2022 5:17:59 PM	70053
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	9/13/2022 5:17:59 PM	70053
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/13/2022 5:17:59 PM	70053
2-Methylphenol	ND	5.0	10		µg/L	1	9/13/2022 5:17:59 PM	70053
3+4-Methylphenol	ND	5.1	10		µg/L	1	9/13/2022 5:17:59 PM	70053
Phenol	ND	18	20		µg/L	1	9/13/2022 5:17:59 PM	70053
Pyridine	ND	14	40		µg/L	1	9/13/2022 5:17:59 PM	70053
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/13/2022 5:17:59 PM	70053
Surr: 2-Fluorophenol	38.4	0	15-84.5		%Rec	1	9/13/2022 5:17:59 PM	70053
Surr: Phenol-d5	29.6	0	15-67		%Rec	1	9/13/2022 5:17:59 PM	70053
Surr: 2,4,6-Tribromophenol	54.1	0	15-108		%Rec	1	9/13/2022 5:17:59 PM	70053
Surr: Nitrobenzene-d5	52.9	0	16.8-112		%Rec	1	9/13/2022 5:17:59 PM	70053
Surr: 2-Fluorobiphenyl	50.1	0	15-101		%Rec	1	9/13/2022 5:17:59 PM	70053
Surr: 4-Terphenyl-d14	72.4	0	34.4-134		%Rec	1	9/13/2022 5:17:59 PM	70053
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	0.82	0.11	1.0	J	µg/L	1	9/12/2022 1:30:00 PM	70053
Naphthalene	ND	0.20	0.30		µg/L	1	9/12/2022 1:30:00 PM	70053
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	9/12/2022 1:30:00 PM	70053
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	9/12/2022 1:30:00 PM	70053
Acenaphthene	ND	0.14	0.30		µg/L	1	9/12/2022 1:30:00 PM	70053
Fluorene	ND	0.095	0.30		µg/L	1	9/12/2022 1:30:00 PM	70053
Phenanthrene	ND	0.16	0.30		µg/L	1	9/12/2022 1:30:00 PM	70053
Anthracene	ND	0.14	0.30		µg/L	1	9/12/2022 1:30:00 PM	70053
Fluoranthene	ND	0.14	0.30		µg/L	1	9/12/2022 1:30:00 PM	70053
Pyrene	ND	0.32	1.0		µg/L	1	9/12/2022 1:30:00 PM	70053
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/12/2022 1:30:00 PM	70053
Chrysene	ND	0.25	0.30		µg/L	1	9/12/2022 1:30:00 PM	70053
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/12/2022 1:30:00 PM	70053
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/12/2022 1:30:00 PM	70053

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-29
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 10:00:00 AM
Lab ID: 2209349-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	47.5	0	31.6-100		%Rec	1	9/12/2022 1:30:00 PM	70053
Surr: 2-Fluorobiphenyl	44.9	0	26.7-90.1		%Rec	1	9/12/2022 1:30:00 PM	70053
Surr: 4-Terphenyl-d14	58.0	0	72.3-147	S	%Rec	1	9/12/2022 1:30:00 PM	70053

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-29
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 10:00:00 AM
Lab ID: 2209349-004D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.075	0.0016	0.0030		mg/L	1	9/9/2022 3:24:33 PM	70055
Beryllium	ND	0.00088	0.0020		mg/L	1	9/9/2022 3:24:33 PM	70055
Cadmium	ND	0.0018	0.0020		mg/L	1	9/9/2022 3:24:33 PM	70055
Chromium	ND	0.0020	0.0060		mg/L	1	9/9/2022 3:24:33 PM	70055
Cobalt	0.0075	0.0035	0.0060		mg/L	1	9/9/2022 3:24:33 PM	70055
Nickel	0.023	0.0053	0.010		mg/L	1	9/9/2022 3:24:33 PM	70055
Silver	ND	0.0018	0.0050		mg/L	1	9/9/2022 3:24:33 PM	70055
Vanadium	ND	0.0035	0.050		mg/L	1	9/9/2022 3:24:33 PM	70055
Zinc	ND	0.0039	0.010		mg/L	1	9/9/2022 3:24:33 PM	70055
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/12/2022 1:07:54 PM	70055
Arsenic	0.00055	0.00013	0.0010	J	mg/L	1	9/12/2022 1:07:54 PM	70055
Lead	ND	0.000061	0.00050		mg/L	1	9/12/2022 1:07:54 PM	70055
Selenium	ND	0.00037	0.0010		mg/L	1	9/12/2022 1:07:54 PM	70055
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00016	0.000091	0.00020	J	mg/L	1	9/17/2022 9:46:03 AM	70231

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-29
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 10:00:00 AM
Lab ID: 2209349-004E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.078	0.0011	0.0020		mg/L	1	9/15/2022 5:32:25 PM	B91088
Beryllium	ND	0.00088	0.0020		mg/L	1	9/15/2022 5:32:25 PM	B91088
Cadmium	ND	0.00098	0.0020		mg/L	1	9/15/2022 5:32:25 PM	B91088
Chromium	ND	0.0020	0.0060		mg/L	1	9/15/2022 5:32:25 PM	B91088
Cobalt	ND	0.0024	0.0060		mg/L	1	9/15/2022 5:32:25 PM	B91088
Nickel	0.027	0.0033	0.010		mg/L	1	9/15/2022 5:32:25 PM	B91088
Silver	0.0016	0.0013	0.0050	J	mg/L	1	9/15/2022 5:32:25 PM	B91088
Vanadium	0.0017	0.0017	0.050	J	mg/L	1	9/15/2022 5:32:25 PM	B91088
Zinc	0.030	0.0032	0.010		mg/L	1	9/15/2022 5:32:25 PM	B91088
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/13/2022 2:00:19 PM	A91030
Arsenic	0.00055	0.00012	0.0010	J	mg/L	1	9/13/2022 2:00:19 PM	A91030
Lead	ND	0.000057	0.00050		mg/L	1	9/13/2022 2:00:19 PM	A91030
Selenium	ND	0.00034	0.0010		mg/L	1	9/13/2022 2:00:19 PM	A91030
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00017	0.000091	0.00020	J	mg/L	1	9/17/2022 9:48:12 AM	70231

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-29
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 10:00:00 AM
Lab ID: 2209349-004F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PAC**	
Cyanide	4.74	1.80	5.00	J	ug/L	1	9/16/2022 12:36:00 PM	R91489

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-54
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 10:35:00 AM
Lab ID: 2209349-005A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	1.3	0.0090	0.050		mg/L	1	9/13/2022 1:46:00 PM	R90998
Surr: BFB	110	0	70-130		%Rec	1	9/13/2022 1:46:00 PM	R90998
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	7.6	1.1	5.0		µg/L	5	9/13/2022 2:27:37 PM	R91002
Toluene	ND	1.0	5.0		µg/L	5	9/13/2022 2:27:37 PM	R91002
Ethylbenzene	7.3	1.1	5.0		µg/L	5	9/13/2022 2:27:37 PM	R91002
Methyl tert-butyl ether (MTBE)	1200	20	50		µg/L	50	9/13/2022 1:59:00 PM	R91002
1,2,4-Trimethylbenzene	2.7	0.61	5.0	J	µg/L	5	9/13/2022 2:27:37 PM	R91002
1,3,5-Trimethylbenzene	ND	0.91	5.0		µg/L	5	9/13/2022 2:27:37 PM	R91002
1,2-Dichloroethane (EDC)	ND	1.3	5.0		µg/L	5	9/13/2022 2:27:37 PM	R91002
Acetone	ND	13	50		µg/L	5	9/13/2022 2:27:37 PM	R91002
Bromomethane	ND	4.3	15		µg/L	5	9/13/2022 2:27:37 PM	R91002
2-Butanone	ND	10	50		µg/L	5	9/13/2022 2:27:37 PM	R91002
Carbon disulfide	ND	3.0	50		µg/L	5	9/13/2022 2:27:37 PM	R91002
Chlorobenzene	ND	0.78	5.0		µg/L	5	9/13/2022 2:27:37 PM	R91002
Chloroform	ND	0.67	5.0		µg/L	5	9/13/2022 2:27:37 PM	R91002
Chloromethane	ND	2.1	15		µg/L	5	9/13/2022 2:27:37 PM	R91002
cis-1,2-DCE	ND	1.9	5.0		µg/L	5	9/13/2022 2:27:37 PM	R91002
1,1-Dichloroethane	ND	1.4	5.0		µg/L	5	9/13/2022 2:27:37 PM	R91002
1,1-Dichloroethene	ND	1.0	5.0		µg/L	5	9/13/2022 2:27:37 PM	R91002
Isopropylbenzene	ND	0.91	5.0		µg/L	5	9/13/2022 2:27:37 PM	R91002
4-Isopropyltoluene	ND	1.0	5.0		µg/L	5	9/13/2022 2:27:37 PM	R91002
Methylene Chloride	ND	2.5	15		µg/L	5	9/13/2022 2:27:37 PM	R91002
n-Butylbenzene	ND	1.3	15		µg/L	5	9/13/2022 2:27:37 PM	R91002
n-Propylbenzene	ND	0.91	5.0		µg/L	5	9/13/2022 2:27:37 PM	R91002
sec-Butylbenzene	ND	0.72	5.0		µg/L	5	9/13/2022 2:27:37 PM	R91002
Styrene	ND	0.68	5.0		µg/L	5	9/13/2022 2:27:37 PM	R91002
Tetrachloroethene (PCE)	ND	1.8	5.0		µg/L	5	9/13/2022 2:27:37 PM	R91002
1,1,1-Trichloroethane	ND	1.5	5.0		µg/L	5	9/13/2022 2:27:37 PM	R91002
Trichloroethene (TCE)	ND	1.0	5.0		µg/L	5	9/13/2022 2:27:37 PM	R91002
Vinyl chloride	ND	1.6	5.0		µg/L	5	9/13/2022 2:27:37 PM	R91002
Xylenes, Total	ND	1.9	7.5		µg/L	5	9/13/2022 2:27:37 PM	R91002
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%Rec	5	9/13/2022 2:27:37 PM	R91002
Surr: 4-Bromofluorobenzene	106	0	70-130		%Rec	5	9/13/2022 2:27:37 PM	R91002
Surr: Dibromofluoromethane	110	0	70-130		%Rec	5	9/13/2022 2:27:37 PM	R91002
Surr: Toluene-d8	104	0	70-130		%Rec	5	9/13/2022 2:27:37 PM	R91002

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-54
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 10:35:00 AM
Lab ID: 2209349-005B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	9/13/2022 6:24:31 PM	70123

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-54
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 10:35:00 AM
Lab ID: 2209349-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	2.0	0.016	0.064		mg/L	1	9/9/2022 6:26:24 PM	70050
Motor Oil Range Organics (MRO)	0.12	0.052	0.080		mg/L	1	9/9/2022 6:26:24 PM	70050
Surr: DNOP	80.9	0	42.2-138		%Rec	1	9/9/2022 6:26:24 PM	70050
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	9/13/2022 6:00:22 PM	70053
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/13/2022 6:00:22 PM	70053
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	9/13/2022 6:00:22 PM	70053
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/13/2022 6:00:22 PM	70053
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/13/2022 6:00:22 PM	70053
Diethyl phthalate	ND	6.0	10		µg/L	1	9/13/2022 6:00:22 PM	70053
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/13/2022 6:00:22 PM	70053
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	9/13/2022 6:00:22 PM	70053
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/13/2022 6:00:22 PM	70053
2-Methylphenol	ND	5.0	10		µg/L	1	9/13/2022 6:00:22 PM	70053
3+4-Methylphenol	ND	5.1	10		µg/L	1	9/13/2022 6:00:22 PM	70053
Phenol	ND	18	20		µg/L	1	9/13/2022 6:00:22 PM	70053
Pyridine	ND	14	40		µg/L	1	9/13/2022 6:00:22 PM	70053
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/13/2022 6:00:22 PM	70053
Surr: 2-Fluorophenol	33.9	0	15-84.5		%Rec	1	9/13/2022 6:00:22 PM	70053
Surr: Phenol-d5	26.0	0	15-67		%Rec	1	9/13/2022 6:00:22 PM	70053
Surr: 2,4,6-Tribromophenol	60.0	0	15-108		%Rec	1	9/13/2022 6:00:22 PM	70053
Surr: Nitrobenzene-d5	45.4	0	16.8-112		%Rec	1	9/13/2022 6:00:22 PM	70053
Surr: 2-Fluorobiphenyl	46.1	0	15-101		%Rec	1	9/13/2022 6:00:22 PM	70053
Surr: 4-Terphenyl-d14	66.4	0	34.4-134		%Rec	1	9/13/2022 6:00:22 PM	70053
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	0.68	0.11	1.0	J	µg/L	1	9/12/2022 2:14:00 PM	70053
Naphthalene	ND	0.20	0.30		µg/L	1	9/12/2022 2:14:00 PM	70053
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	9/12/2022 2:14:00 PM	70053
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	9/12/2022 2:14:00 PM	70053
Acenaphthene	ND	0.14	0.30		µg/L	1	9/12/2022 2:14:00 PM	70053
Fluorene	ND	0.095	0.30		µg/L	1	9/12/2022 2:14:00 PM	70053
Phenanthrene	ND	0.16	0.30		µg/L	1	9/12/2022 2:14:00 PM	70053
Anthracene	ND	0.14	0.30		µg/L	1	9/12/2022 2:14:00 PM	70053
Fluoranthene	ND	0.14	0.30		µg/L	1	9/12/2022 2:14:00 PM	70053
Pyrene	ND	0.32	1.0		µg/L	1	9/12/2022 2:14:00 PM	70053
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/12/2022 2:14:00 PM	70053
Chrysene	ND	0.25	0.30		µg/L	1	9/12/2022 2:14:00 PM	70053
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/12/2022 2:14:00 PM	70053
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/12/2022 2:14:00 PM	70053

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-54
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 10:35:00 AM
Lab ID: 2209349-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	43.6	0	31.6-100		%Rec	1	9/12/2022 2:14:00 PM	70053
Surr: 2-Fluorobiphenyl	39.4	0	26.7-90.1		%Rec	1	9/12/2022 2:14:00 PM	70053
Surr: 4-Terphenyl-d14	48.7	0	72.3-147	S	%Rec	1	9/12/2022 2:14:00 PM	70053

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-54
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 10:35:00 AM
Lab ID: 2209349-005D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.47	0.0016	0.0030		mg/L	1	9/9/2022 3:27:53 PM	70055
Beryllium	ND	0.00088	0.0020		mg/L	1	9/9/2022 3:27:53 PM	70055
Cadmium	ND	0.0018	0.0020		mg/L	1	9/9/2022 3:27:53 PM	70055
Chromium	0.012	0.0020	0.0060		mg/L	1	9/9/2022 3:27:53 PM	70055
Cobalt	0.082	0.0035	0.0060		mg/L	1	9/9/2022 3:27:53 PM	70055
Nickel	0.21	0.0053	0.010	*	mg/L	1	9/9/2022 3:27:53 PM	70055
Silver	ND	0.0018	0.0050		mg/L	1	9/9/2022 3:27:53 PM	70055
Vanadium	0.025	0.0035	0.050	J	mg/L	1	9/9/2022 3:27:53 PM	70055
Zinc	0.020	0.0039	0.010		mg/L	1	9/9/2022 3:27:53 PM	70055
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/12/2022 1:10:21 PM	70055
Arsenic	0.011	0.00013	0.0010	*	mg/L	1	9/12/2022 1:10:21 PM	70055
Lead	0.033	0.00031	0.0025	*	mg/L	5	9/14/2022 3:38:07 PM	70055
Selenium	0.0017	0.00037	0.0010		mg/L	1	9/14/2022 3:35:41 PM	70055
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00022	0.000091	0.00020		mg/L	1	9/17/2022 9:50:19 AM	70231

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-54
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 10:35:00 AM
Lab ID: 2209349-005E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.17	0.0011	0.0020		mg/L	1	9/15/2022 5:36:38 PM	B91088
Beryllium	ND	0.00088	0.0020		mg/L	1	9/15/2022 5:36:38 PM	B91088
Cadmium	ND	0.00098	0.0020		mg/L	1	9/15/2022 5:36:38 PM	B91088
Chromium	ND	0.0020	0.0060		mg/L	1	9/15/2022 5:36:38 PM	B91088
Cobalt	0.071	0.0024	0.0060		mg/L	1	9/15/2022 5:36:38 PM	B91088
Nickel	0.23	0.0033	0.010	*	mg/L	1	9/15/2022 5:36:38 PM	B91088
Silver	0.0019	0.0013	0.0050	J	mg/L	1	9/15/2022 5:36:38 PM	B91088
Vanadium	0.0034	0.0017	0.050	J	mg/L	1	9/15/2022 5:36:38 PM	B91088
Zinc	0.017	0.0032	0.010		mg/L	1	9/15/2022 5:36:38 PM	B91088
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/13/2022 2:03:01 PM	A91030
Arsenic	0.0080	0.00012	0.0010		mg/L	1	9/13/2022 2:03:01 PM	A91030
Lead	0.010	0.000057	0.00050		mg/L	1	9/13/2022 2:03:01 PM	A91030
Selenium	ND	0.00034	0.0010		mg/L	1	9/13/2022 2:03:01 PM	A91030
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00016	0.000091	0.00020	J	mg/L	1	9/17/2022 9:52:26 AM	70231

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-54
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 10:35:00 AM
Lab ID: 2209349-005F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PAC**	
Cyanide	5.33	1.80	5.00		ug/L	1	9/16/2022 12:37:00 PM	R91489

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-66
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 11:00:00 AM
Lab ID: 2209349-006A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	170	0.45	2.5		mg/L	50	9/13/2022 2:05:00 PM	R90998
Surr: BFB	105	0	70-130		%Rec	50	9/13/2022 2:05:00 PM	R90998
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	27000	110	500		µg/L	500	9/13/2022 2:56:12 PM	R91002
Toluene	31000	100	500		µg/L	500	9/13/2022 2:56:12 PM	R91002
Ethylbenzene	1300	11	50		µg/L	50	9/13/2022 3:24:49 PM	R91002
Methyl tert-butyl ether (MTBE)	740	20	50		µg/L	50	9/13/2022 3:24:49 PM	R91002
1,2,4-Trimethylbenzene	1600	6.1	50		µg/L	50	9/13/2022 3:24:49 PM	R91002
1,3,5-Trimethylbenzene	410	9.1	50		µg/L	50	9/13/2022 3:24:49 PM	R91002
1,2-Dichloroethane (EDC)	ND	13	50		µg/L	50	9/13/2022 3:24:49 PM	R91002
Acetone	ND	130	500		µg/L	50	9/13/2022 3:24:49 PM	R91002
Bromomethane	ND	43	150		µg/L	50	9/13/2022 3:24:49 PM	R91002
2-Butanone	ND	100	500		µg/L	50	9/13/2022 3:24:49 PM	R91002
Carbon disulfide	ND	30	500		µg/L	50	9/13/2022 3:24:49 PM	R91002
Chlorobenzene	ND	7.8	50		µg/L	50	9/13/2022 3:24:49 PM	R91002
Chloroform	ND	6.7	50		µg/L	50	9/13/2022 3:24:49 PM	R91002
Chloromethane	ND	21	150		µg/L	50	9/13/2022 3:24:49 PM	R91002
cis-1,2-DCE	ND	19	50		µg/L	50	9/13/2022 3:24:49 PM	R91002
1,1-Dichloroethane	ND	14	50		µg/L	50	9/13/2022 3:24:49 PM	R91002
1,1-Dichloroethene	ND	10	50		µg/L	50	9/13/2022 3:24:49 PM	R91002
Isopropylbenzene	ND	9.1	50		µg/L	50	9/13/2022 3:24:49 PM	R91002
4-Isopropyltoluene	ND	10	50		µg/L	50	9/13/2022 3:24:49 PM	R91002
Methylene Chloride	ND	25	150		µg/L	50	9/13/2022 3:24:49 PM	R91002
n-Butylbenzene	ND	13	150		µg/L	50	9/13/2022 3:24:49 PM	R91002
n-Propylbenzene	61	9.1	50		µg/L	50	9/13/2022 3:24:49 PM	R91002
sec-Butylbenzene	ND	7.2	50		µg/L	50	9/13/2022 3:24:49 PM	R91002
Styrene	ND	6.8	50		µg/L	50	9/13/2022 3:24:49 PM	R91002
Tetrachloroethene (PCE)	ND	18	50		µg/L	50	9/13/2022 3:24:49 PM	R91002
1,1,1-Trichloroethane	ND	15	50		µg/L	50	9/13/2022 3:24:49 PM	R91002
Trichloroethene (TCE)	ND	10	50		µg/L	50	9/13/2022 3:24:49 PM	R91002
Vinyl chloride	ND	16	50		µg/L	50	9/13/2022 3:24:49 PM	R91002
Xylenes, Total	13000	19	75		µg/L	50	9/13/2022 3:24:49 PM	R91002
Surr: 1,2-Dichloroethane-d4	94.8	0	70-130		%Rec	50	9/13/2022 3:24:49 PM	R91002
Surr: 4-Bromofluorobenzene	91.1	0	70-130		%Rec	50	9/13/2022 3:24:49 PM	R91002
Surr: Dibromofluoromethane	104	0	70-130		%Rec	50	9/13/2022 3:24:49 PM	R91002
Surr: Toluene-d8	101	0	70-130		%Rec	50	9/13/2022 3:24:49 PM	R91002

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-66
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 11:00:00 AM
Lab ID: 2209349-006B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	9/13/2022 6:39:43 PM	70123

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-66
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 11:00:00 AM
Lab ID: 2209349-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	7.1	0.080	0.32		mg/L	5	9/12/2022 10:17:47 AM	70050
Motor Oil Range Organics (MRO)	ND	0.26	0.40	D	mg/L	5	9/12/2022 10:17:47 AM	70050
Surr: DNOP	102	0	42.2-138		%Rec	5	9/12/2022 10:17:47 AM	70050
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	9/13/2022 6:43:01 PM	70053
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/13/2022 6:43:01 PM	70053
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	9/13/2022 6:43:01 PM	70053
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/13/2022 6:43:01 PM	70053
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/13/2022 6:43:01 PM	70053
Diethyl phthalate	ND	6.0	10		µg/L	1	9/13/2022 6:43:01 PM	70053
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/13/2022 6:43:01 PM	70053
2,4-Dimethylphenol	16	5.8	10		µg/L	1	9/13/2022 6:43:01 PM	70053
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/13/2022 6:43:01 PM	70053
2-Methylnaphthalene	40	4.2	5.0		µg/L	1	9/13/2022 6:43:01 PM	70053
2-Methylphenol	31	5.0	10		µg/L	1	9/13/2022 6:43:01 PM	70053
3+4-Methylphenol	48	5.1	10		µg/L	1	9/13/2022 6:43:01 PM	70053
Naphthalene	160	3.2	5.0		µg/L	1	9/13/2022 6:43:01 PM	70053
Phenol	41	18	20		µg/L	1	9/13/2022 6:43:01 PM	70053
Pyridine	ND	14	40		µg/L	1	9/13/2022 6:43:01 PM	70053
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/13/2022 6:43:01 PM	70053
Surr: 2-Fluorophenol	0	0	15-84.5	S	%Rec	1	9/13/2022 6:43:01 PM	70053
Surr: Phenol-d5	31.5	0	15-67		%Rec	1	9/13/2022 6:43:01 PM	70053
Surr: 2,4,6-Tribromophenol	73.8	0	15-108		%Rec	1	9/13/2022 6:43:01 PM	70053
Surr: Nitrobenzene-d5	60.2	0	16.8-112		%Rec	1	9/13/2022 6:43:01 PM	70053
Surr: 2-Fluorobiphenyl	55.6	0	15-101		%Rec	1	9/13/2022 6:43:01 PM	70053
Surr: 4-Terphenyl-d14	81.2	0	34.4-134		%Rec	1	9/13/2022 6:43:01 PM	70053
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	1.2	0.11	1.0		µg/L	1	9/12/2022 2:58:00 PM	70053
1-Methylnaphthalene	19	0.15	0.30		µg/L	1	9/12/2022 2:58:00 PM	70053
Acenaphthene	0.24	0.14	0.30	J	µg/L	1	9/12/2022 2:58:00 PM	70053
Fluorene	0.74	0.095	0.30		µg/L	1	9/12/2022 2:58:00 PM	70053
Phenanthrene	1.1	0.16	0.30		µg/L	1	9/12/2022 2:58:00 PM	70053
Anthracene	0.20	0.14	0.30	J	µg/L	1	9/12/2022 2:58:00 PM	70053
Fluoranthene	ND	0.14	0.30		µg/L	1	9/12/2022 2:58:00 PM	70053
Pyrene	ND	0.32	1.0		µg/L	1	9/12/2022 2:58:00 PM	70053
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/12/2022 2:58:00 PM	70053
Chrysene	ND	0.25	0.30		µg/L	1	9/12/2022 2:58:00 PM	70053
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/12/2022 2:58:00 PM	70053
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/12/2022 2:58:00 PM	70053

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Estimated value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-66
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 11:00:00 AM
Lab ID: 2209349-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	55.4	0	31.6-100		%Rec	1	9/12/2022 2:58:00 PM	70053
Surr: 2-Fluorobiphenyl	45.3	0	26.7-90.1		%Rec	1	9/12/2022 2:58:00 PM	70053
Surr: 4-Terphenyl-d14	56.8	0	72.3-147	S	%Rec	1	9/12/2022 2:58:00 PM	70053

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-66
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 11:00:00 AM
Lab ID: 2209349-006D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	2.5	0.0079	0.015	*	mg/L	5	9/9/2022 3:32:30 PM	70055
Beryllium	ND	0.00088	0.0020		mg/L	1	9/9/2022 3:31:03 PM	70055
Cadmium	ND	0.0018	0.0020		mg/L	1	9/9/2022 3:31:03 PM	70055
Chromium	0.017	0.0020	0.0060		mg/L	1	9/9/2022 3:31:03 PM	70055
Cobalt	0.0093	0.0035	0.0060		mg/L	1	9/9/2022 3:31:03 PM	70055
Nickel	0.30	0.0053	0.010	*	mg/L	1	9/9/2022 3:31:03 PM	70055
Silver	ND	0.0018	0.0050		mg/L	1	9/9/2022 3:31:03 PM	70055
Vanadium	0.036	0.0035	0.050	J	mg/L	1	9/9/2022 3:31:03 PM	70055
Zinc	0.0078	0.0039	0.010	J	mg/L	1	9/9/2022 3:31:03 PM	70055
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/12/2022 1:12:47 PM	70055
Arsenic	0.0086	0.00013	0.0010		mg/L	1	9/12/2022 1:12:47 PM	70055
Lead	0.028	0.00031	0.0025	*	mg/L	5	9/14/2022 3:43:00 PM	70055
Selenium	0.0023	0.00037	0.0010		mg/L	1	9/14/2022 3:40:34 PM	70055
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00019	0.000091	0.00020	J	mg/L	1	9/17/2022 9:54:36 AM	70231

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-66
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 11:00:00 AM
Lab ID: 2209349-006E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	2.1	0.0056	0.010	*	mg/L	5	9/15/2022 5:42:48 PM	B91088
Beryllium	ND	0.00088	0.0020		mg/L	1	9/15/2022 5:40:53 PM	B91088
Cadmium	ND	0.00098	0.0020		mg/L	1	9/15/2022 5:40:53 PM	B91088
Chromium	ND	0.0020	0.0060		mg/L	1	9/15/2022 5:40:53 PM	B91088
Cobalt	ND	0.0024	0.0060		mg/L	1	9/15/2022 5:40:53 PM	B91088
Nickel	0.33	0.0033	0.010	*	mg/L	1	9/15/2022 5:40:53 PM	B91088
Silver	ND	0.0013	0.0050		mg/L	1	9/15/2022 5:40:53 PM	B91088
Vanadium	0.0041	0.0017	0.050	J	mg/L	1	9/15/2022 5:40:53 PM	B91088
Zinc	0.010	0.0032	0.010		mg/L	1	9/15/2022 5:40:53 PM	B91088
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/13/2022 2:05:42 PM	A91030
Arsenic	0.0059	0.00012	0.0010		mg/L	1	9/13/2022 2:05:42 PM	A91030
Lead	0.00045	0.000057	0.00050	J	mg/L	1	9/13/2022 2:05:42 PM	A91030
Selenium	0.00045	0.00034	0.0010	J	mg/L	1	9/13/2022 2:05:42 PM	A91030
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00017	0.000091	0.00020	J	mg/L	1	9/17/2022 9:56:43 AM	70231

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-66
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 11:00:00 AM
Lab ID: 2209349-006F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PAC**	
Cyanide	10.1	1.80	5.00		ug/L	1	9/16/2022 12:38:00 PM	R91489

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-55
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 11:20:00 AM
Lab ID: 2209349-007A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	20	0.45	2.5		mg/L	50	9/13/2022 2:25:00 PM	R90998
Surr: BFB	107	0	70-130		%Rec	50	9/13/2022 2:25:00 PM	R90998
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	6100	110	500		µg/L	500	9/13/2022 3:53:26 PM	R91002
Toluene	190	10	50		µg/L	50	9/13/2022 4:22:07 PM	R91002
Ethylbenzene	380	11	50		µg/L	50	9/13/2022 4:22:07 PM	R91002
Methyl tert-butyl ether (MTBE)	930	20	50		µg/L	50	9/13/2022 4:22:07 PM	R91002
1,2,4-Trimethylbenzene	170	6.1	50		µg/L	50	9/13/2022 4:22:07 PM	R91002
1,3,5-Trimethylbenzene	41	9.1	50	J	µg/L	50	9/13/2022 4:22:07 PM	R91002
1,2-Dichloroethane (EDC)	ND	13	50		µg/L	50	9/13/2022 4:22:07 PM	R91002
Acetone	ND	130	500		µg/L	50	9/13/2022 4:22:07 PM	R91002
Bromomethane	ND	43	150		µg/L	50	9/13/2022 4:22:07 PM	R91002
2-Butanone	ND	100	500		µg/L	50	9/13/2022 4:22:07 PM	R91002
Carbon disulfide	ND	30	500		µg/L	50	9/13/2022 4:22:07 PM	R91002
Chlorobenzene	ND	7.8	50		µg/L	50	9/13/2022 4:22:07 PM	R91002
Chloroform	ND	6.7	50		µg/L	50	9/13/2022 4:22:07 PM	R91002
Chloromethane	ND	21	150		µg/L	50	9/13/2022 4:22:07 PM	R91002
cis-1,2-DCE	ND	19	50		µg/L	50	9/13/2022 4:22:07 PM	R91002
1,1-Dichloroethane	ND	14	50		µg/L	50	9/13/2022 4:22:07 PM	R91002
1,1-Dichloroethene	ND	10	50		µg/L	50	9/13/2022 4:22:07 PM	R91002
Isopropylbenzene	19	9.1	50	J	µg/L	50	9/13/2022 4:22:07 PM	R91002
4-Isopropyltoluene	ND	10	50		µg/L	50	9/13/2022 4:22:07 PM	R91002
Methylene Chloride	ND	25	150		µg/L	50	9/13/2022 4:22:07 PM	R91002
n-Butylbenzene	ND	13	150		µg/L	50	9/13/2022 4:22:07 PM	R91002
n-Propylbenzene	41	9.1	50	J	µg/L	50	9/13/2022 4:22:07 PM	R91002
sec-Butylbenzene	ND	7.2	50		µg/L	50	9/13/2022 4:22:07 PM	R91002
Styrene	ND	6.8	50		µg/L	50	9/13/2022 4:22:07 PM	R91002
Tetrachloroethene (PCE)	ND	18	50		µg/L	50	9/13/2022 4:22:07 PM	R91002
1,1,1-Trichloroethane	ND	15	50		µg/L	50	9/13/2022 4:22:07 PM	R91002
Trichloroethene (TCE)	ND	10	50		µg/L	50	9/13/2022 4:22:07 PM	R91002
Vinyl chloride	ND	16	50		µg/L	50	9/13/2022 4:22:07 PM	R91002
Xylenes, Total	480	19	75		µg/L	50	9/13/2022 4:22:07 PM	R91002
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%Rec	50	9/13/2022 4:22:07 PM	R91002
Surr: 4-Bromofluorobenzene	105	0	70-130		%Rec	50	9/13/2022 4:22:07 PM	R91002
Surr: Dibromofluoromethane	113	0	70-130		%Rec	50	9/13/2022 4:22:07 PM	R91002
Surr: Toluene-d8	102	0	70-130		%Rec	50	9/13/2022 4:22:07 PM	R91002

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-55
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 11:20:00 AM
Lab ID: 2209349-007B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	9/13/2022 6:54:56 PM	70123

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-55
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 11:20:00 AM
Lab ID: 2209349-007C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	4.5	0.080	0.32		mg/L	5	9/12/2022 10:41:27 AM	70050
Motor Oil Range Organics (MRO)	ND	0.26	0.40	D	mg/L	5	9/12/2022 10:41:27 AM	70050
Surr: DNOP	112	0	42.2-138		%Rec	5	9/12/2022 10:41:27 AM	70050
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	9/13/2022 7:25:41 PM	70053
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/13/2022 7:25:41 PM	70053
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	9/13/2022 7:25:41 PM	70053
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/13/2022 7:25:41 PM	70053
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/13/2022 7:25:41 PM	70053
Diethyl phthalate	ND	6.0	10		µg/L	1	9/13/2022 7:25:41 PM	70053
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/13/2022 7:25:41 PM	70053
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	9/13/2022 7:25:41 PM	70053
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/13/2022 7:25:41 PM	70053
1-Methylnaphthalene	25	4.3	5.0		µg/L	1	9/13/2022 7:25:41 PM	70053
2-Methylphenol	ND	5.0	10		µg/L	1	9/13/2022 7:25:41 PM	70053
3+4-Methylphenol	ND	5.1	10		µg/L	1	9/13/2022 7:25:41 PM	70053
Phenol	33	18	20		µg/L	1	9/13/2022 7:25:41 PM	70053
Pyridine	ND	14	40		µg/L	1	9/13/2022 7:25:41 PM	70053
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/13/2022 7:25:41 PM	70053
Surr: 2-Fluorophenol	47.8	0	15-84.5		%Rec	1	9/13/2022 7:25:41 PM	70053
Surr: Phenol-d5	36.5	0	15-67		%Rec	1	9/13/2022 7:25:41 PM	70053
Surr: 2,4,6-Tribromophenol	70.9	0	15-108		%Rec	1	9/13/2022 7:25:41 PM	70053
Surr: Nitrobenzene-d5	64.8	0	16.8-112		%Rec	1	9/13/2022 7:25:41 PM	70053
Surr: 2-Fluorobiphenyl	62.2	0	15-101		%Rec	1	9/13/2022 7:25:41 PM	70053
Surr: 4-Terphenyl-d14	84.1	0	34.4-134		%Rec	1	9/13/2022 7:25:41 PM	70053
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	1.3	0.11	1.0		µg/L	1	9/12/2022 3:42:00 PM	70053
Naphthalene	19	0.20	0.30		µg/L	1	9/12/2022 3:42:00 PM	70053
2-Methylnaphthalene	10	0.14	0.30		µg/L	1	9/12/2022 3:42:00 PM	70053
Acenaphthene	0.56	0.14	0.30		µg/L	1	9/12/2022 3:42:00 PM	70053
Fluorene	1.6	0.095	0.30		µg/L	1	9/12/2022 3:42:00 PM	70053
Phenanthrene	1.3	0.16	0.30		µg/L	1	9/12/2022 3:42:00 PM	70053
Anthracene	ND	0.14	0.30		µg/L	1	9/12/2022 3:42:00 PM	70053
Fluoranthene	ND	0.14	0.30		µg/L	1	9/12/2022 3:42:00 PM	70053
Pyrene	ND	0.32	1.0		µg/L	1	9/12/2022 3:42:00 PM	70053
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/12/2022 3:42:00 PM	70053
Chrysene	ND	0.25	0.30		µg/L	1	9/12/2022 3:42:00 PM	70053
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/12/2022 3:42:00 PM	70053
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/12/2022 3:42:00 PM	70053

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Estimated value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-55
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 11:20:00 AM
Lab ID: 2209349-007C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	61.7	0	31.6-100		%Rec	1	9/12/2022 3:42:00 PM	70053
Surr: 2-Fluorobiphenyl	46.8	0	26.7-90.1		%Rec	1	9/12/2022 3:42:00 PM	70053
Surr: 4-Terphenyl-d14	55.5	0	72.3-147	S	%Rec	1	9/12/2022 3:42:00 PM	70053

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-55
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 11:20:00 AM
Lab ID: 2209349-007D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.69	0.0016	0.0030		mg/L	1	9/9/2022 3:39:00 PM	70055
Beryllium	ND	0.00088	0.0020		mg/L	1	9/9/2022 3:39:00 PM	70055
Cadmium	ND	0.0018	0.0020		mg/L	1	9/9/2022 3:39:00 PM	70055
Chromium	0.011	0.0020	0.0060		mg/L	1	9/9/2022 3:39:00 PM	70055
Cobalt	0.035	0.0035	0.0060		mg/L	1	9/9/2022 3:39:00 PM	70055
Nickel	0.22	0.0053	0.010	*	mg/L	1	9/9/2022 3:39:00 PM	70055
Silver	ND	0.0018	0.0050		mg/L	1	9/9/2022 3:39:00 PM	70055
Vanadium	0.027	0.0035	0.050	J	mg/L	1	9/9/2022 3:39:00 PM	70055
Zinc	0.026	0.0039	0.010		mg/L	1	9/9/2022 3:39:00 PM	70055
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/12/2022 1:15:14 PM	70055
Arsenic	0.0096	0.00013	0.0010		mg/L	1	9/12/2022 1:15:14 PM	70055
Lead	0.0074	0.000061	0.00050		mg/L	1	9/12/2022 1:15:14 PM	70055
Selenium	0.0015	0.00037	0.0010		mg/L	1	9/14/2022 3:50:21 PM	70055
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00017	0.000091	0.00020	J	mg/L	1	9/17/2022 9:58:51 AM	70231

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-55
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 11:20:00 AM
Lab ID: 2209349-007E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.58	0.0011	0.0020		mg/L	1	9/15/2022 5:45:07 PM	B91088
Beryllium	ND	0.00088	0.0020		mg/L	1	9/15/2022 5:45:07 PM	B91088
Cadmium	ND	0.00098	0.0020		mg/L	1	9/15/2022 5:45:07 PM	B91088
Chromium	ND	0.0020	0.0060		mg/L	1	9/15/2022 5:45:07 PM	B91088
Cobalt	0.0082	0.0024	0.0060		mg/L	1	9/15/2022 5:45:07 PM	B91088
Nickel	0.23	0.0033	0.010	*	mg/L	1	9/15/2022 5:45:07 PM	B91088
Silver	0.0019	0.0013	0.0050	J	mg/L	1	9/15/2022 5:45:07 PM	B91088
Vanadium	0.0052	0.0017	0.050	J	mg/L	1	9/15/2022 5:45:07 PM	B91088
Zinc	0.014	0.0032	0.010		mg/L	1	9/15/2022 5:45:07 PM	B91088
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/13/2022 2:13:48 PM	A91030
Arsenic	0.0052	0.00012	0.0010		mg/L	1	9/13/2022 2:13:48 PM	A91030
Lead	ND	0.000057	0.00050		mg/L	1	9/13/2022 2:13:48 PM	A91030
Selenium	ND	0.00034	0.0010		mg/L	1	9/13/2022 4:21:08 PM	A91030
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00016	0.000091	0.00020	J	mg/L	1	9/17/2022 10:00:59 AM	70231

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-55
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 11:20:00 AM
Lab ID: 2209349-007F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PAC**	
Cyanide	6.38	1.80	5.00		ug/L	1	9/16/2022 12:39:00 PM	R91489

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-13
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 11:45:00 AM
Lab ID: 2209349-008A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.10	0.0090	0.050		mg/L	1	9/13/2022 2:45:00 PM	R90998
Surr: BFB	98.9	0	70-130		%Rec	1	9/13/2022 2:45:00 PM	R90998
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	9/13/2022 4:50:43 PM	R91002
Toluene	ND	0.20	1.0		µg/L	1	9/13/2022 4:50:43 PM	R91002
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/13/2022 4:50:43 PM	R91002
Methyl tert-butyl ether (MTBE)	120	0.39	1.0		µg/L	1	9/13/2022 4:50:43 PM	R91002
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/13/2022 4:50:43 PM	R91002
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 4:50:43 PM	R91002
1,2-Dichloroethane (EDC)	0.83	0.25	1.0	J	µg/L	1	9/13/2022 4:50:43 PM	R91002
Acetone	ND	2.5	10		µg/L	1	9/13/2022 4:50:43 PM	R91002
Bromomethane	ND	0.85	3.0		µg/L	1	9/13/2022 4:50:43 PM	R91002
2-Butanone	ND	2.0	10		µg/L	1	9/13/2022 4:50:43 PM	R91002
Carbon disulfide	ND	0.59	10		µg/L	1	9/13/2022 4:50:43 PM	R91002
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/13/2022 4:50:43 PM	R91002
Chloroform	ND	0.13	1.0		µg/L	1	9/13/2022 4:50:43 PM	R91002
Chloromethane	ND	0.41	3.0		µg/L	1	9/13/2022 4:50:43 PM	R91002
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/13/2022 4:50:43 PM	R91002
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/13/2022 4:50:43 PM	R91002
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/13/2022 4:50:43 PM	R91002
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 4:50:43 PM	R91002
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/13/2022 4:50:43 PM	R91002
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/13/2022 4:50:43 PM	R91002
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/13/2022 4:50:43 PM	R91002
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 4:50:43 PM	R91002
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/13/2022 4:50:43 PM	R91002
Styrene	ND	0.14	1.0		µg/L	1	9/13/2022 4:50:43 PM	R91002
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/13/2022 4:50:43 PM	R91002
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/13/2022 4:50:43 PM	R91002
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/13/2022 4:50:43 PM	R91002
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/13/2022 4:50:43 PM	R91002
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/13/2022 4:50:43 PM	R91002
Surr: 1,2-Dichloroethane-d4	103	0	70-130		%Rec	1	9/13/2022 4:50:43 PM	R91002
Surr: 4-Bromofluorobenzene	107	0	70-130		%Rec	1	9/13/2022 4:50:43 PM	R91002
Surr: Dibromofluoromethane	116	0	70-130		%Rec	1	9/13/2022 4:50:43 PM	R91002
Surr: Toluene-d8	103	0	70-130		%Rec	1	9/13/2022 4:50:43 PM	R91002

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-13
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 11:45:00 AM
Lab ID: 2209349-008B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	9/13/2022 7:10:04 PM	70123

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-13
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 11:45:00 AM
Lab ID: 2209349-008C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.076	0.016	0.064		mg/L	1	9/9/2022 8:25:26 PM	70050
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	9/9/2022 8:25:26 PM	70050
Surr: DNOP	99.3	0	42.2-138		%Rec	1	9/9/2022 8:25:26 PM	70050
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	9/13/2022 8:08:24 PM	70053
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/13/2022 8:08:24 PM	70053
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	9/13/2022 8:08:24 PM	70053
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/13/2022 8:08:24 PM	70053
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/13/2022 8:08:24 PM	70053
Diethyl phthalate	ND	6.0	10		µg/L	1	9/13/2022 8:08:24 PM	70053
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/13/2022 8:08:24 PM	70053
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	9/13/2022 8:08:24 PM	70053
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/13/2022 8:08:24 PM	70053
2-Methylphenol	ND	5.0	10		µg/L	1	9/13/2022 8:08:24 PM	70053
3+4-Methylphenol	ND	5.1	10		µg/L	1	9/13/2022 8:08:24 PM	70053
Phenol	ND	18	20		µg/L	1	9/13/2022 8:08:24 PM	70053
Pyridine	ND	14	40		µg/L	1	9/13/2022 8:08:24 PM	70053
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/13/2022 8:08:24 PM	70053
Surr: 2-Fluorophenol	42.7	0	15-84.5		%Rec	1	9/13/2022 8:08:24 PM	70053
Surr: Phenol-d5	32.9	0	15-67		%Rec	1	9/13/2022 8:08:24 PM	70053
Surr: 2,4,6-Tribromophenol	52.7	0	15-108		%Rec	1	9/13/2022 8:08:24 PM	70053
Surr: Nitrobenzene-d5	58.5	0	16.8-112		%Rec	1	9/13/2022 8:08:24 PM	70053
Surr: 2-Fluorobiphenyl	56.4	0	15-101		%Rec	1	9/13/2022 8:08:24 PM	70053
Surr: 4-Terphenyl-d14	77.6	0	34.4-134		%Rec	1	9/13/2022 8:08:24 PM	70053
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	9/12/2022 4:26:00 PM	70053
Naphthalene	ND	0.20	0.30		µg/L	1	9/12/2022 4:26:00 PM	70053
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	9/12/2022 4:26:00 PM	70053
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	9/12/2022 4:26:00 PM	70053
Acenaphthene	ND	0.14	0.30		µg/L	1	9/12/2022 4:26:00 PM	70053
Fluorene	ND	0.095	0.30		µg/L	1	9/12/2022 4:26:00 PM	70053
Phenanthrene	ND	0.16	0.30		µg/L	1	9/12/2022 4:26:00 PM	70053
Anthracene	ND	0.14	0.30		µg/L	1	9/12/2022 4:26:00 PM	70053
Fluoranthene	ND	0.14	0.30		µg/L	1	9/12/2022 4:26:00 PM	70053
Pyrene	ND	0.32	1.0		µg/L	1	9/12/2022 4:26:00 PM	70053
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/12/2022 4:26:00 PM	70053
Chrysene	ND	0.25	0.30		µg/L	1	9/12/2022 4:26:00 PM	70053
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/12/2022 4:26:00 PM	70053
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/12/2022 4:26:00 PM	70053

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-13
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 11:45:00 AM
Lab ID: 2209349-008C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	56.4	0	31.6-100		%Rec	1	9/12/2022 4:26:00 PM	70053
Surr: 2-Fluorobiphenyl	49.8	0	26.7-90.1		%Rec	1	9/12/2022 4:26:00 PM	70053
Surr: 4-Terphenyl-d14	61.0	0	72.3-147	S	%Rec	1	9/12/2022 4:26:00 PM	70053

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-13
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 11:45:00 AM
Lab ID: 2209349-008D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.019	0.0016	0.0030		mg/L	1	9/9/2022 3:41:53 PM	70055
Beryllium	ND	0.00088	0.0020		mg/L	1	9/9/2022 3:41:53 PM	70055
Cadmium	ND	0.0018	0.0020		mg/L	1	9/9/2022 3:41:53 PM	70055
Chromium	ND	0.0020	0.0060		mg/L	1	9/9/2022 3:41:53 PM	70055
Cobalt	ND	0.0035	0.0060		mg/L	1	9/9/2022 3:41:53 PM	70055
Nickel	ND	0.0053	0.010		mg/L	1	9/9/2022 3:41:53 PM	70055
Silver	ND	0.0018	0.0050		mg/L	1	9/9/2022 3:41:53 PM	70055
Vanadium	ND	0.0035	0.050		mg/L	1	9/9/2022 3:41:53 PM	70055
Zinc	ND	0.0039	0.010		mg/L	1	9/9/2022 3:41:53 PM	70055
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/12/2022 1:22:35 PM	70055
Arsenic	0.00063	0.00013	0.0010	J	mg/L	1	9/12/2022 1:22:35 PM	70055
Lead	ND	0.000061	0.00050		mg/L	1	9/12/2022 1:22:35 PM	70055
Selenium	ND	0.00037	0.0010		mg/L	1	9/12/2022 1:22:35 PM	70055
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00017	0.000091	0.00020	J	mg/L	1	9/17/2022 11:21:48 AM	70231

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-13
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 11:45:00 AM
Lab ID: 2209349-008E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.021	0.0011	0.0020		mg/L	1	9/15/2022 5:55:48 PM	B91088
Beryllium	ND	0.00088	0.0020		mg/L	1	9/15/2022 5:55:48 PM	B91088
Cadmium	ND	0.00098	0.0020		mg/L	1	9/15/2022 5:55:48 PM	B91088
Chromium	ND	0.0020	0.0060		mg/L	1	9/15/2022 5:55:48 PM	B91088
Cobalt	ND	0.0024	0.0060		mg/L	1	9/15/2022 5:55:48 PM	B91088
Nickel	ND	0.0033	0.010		mg/L	1	9/15/2022 5:55:48 PM	B91088
Silver	ND	0.0013	0.0050		mg/L	1	9/15/2022 5:55:48 PM	B91088
Vanadium	0.0031	0.0017	0.050	J	mg/L	1	9/15/2022 5:55:48 PM	B91088
Zinc	0.031	0.0032	0.010		mg/L	1	9/15/2022 5:55:48 PM	B91088
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/13/2022 2:16:30 PM	A91030
Arsenic	0.00057	0.00012	0.0010	J	mg/L	1	9/13/2022 2:16:30 PM	A91030
Lead	ND	0.000057	0.00050		mg/L	1	9/13/2022 2:16:30 PM	A91030
Selenium	ND	0.00034	0.0010		mg/L	1	9/13/2022 4:23:49 PM	A91030
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00016	0.000091	0.00020	J	mg/L	1	9/17/2022 11:23:54 AM	70231

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-13
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 11:45:00 AM
Lab ID: 2209349-008F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PAC**	
Cyanide	ND	1.80	5.00		ug/L	1	9/16/2022 12:40:00 PM	R91489

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-56
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 12:10:00 PM
Lab ID: 2209349-009A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.27	0.0090	0.050		mg/L	1	9/13/2022 3:04:00 PM	R90998
Surr: BFB	951	0	70-130	S	%Rec	1	9/13/2022 3:04:00 PM	R90998
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	0.88	0.23	1.0	J	µg/L	1	9/13/2022 5:19:22 PM	R91002
Toluene	ND	0.20	1.0		µg/L	1	9/13/2022 5:19:22 PM	R91002
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/13/2022 5:19:22 PM	R91002
Methyl tert-butyl ether (MTBE)	21	0.39	1.0		µg/L	1	9/13/2022 5:19:22 PM	R91002
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/13/2022 5:19:22 PM	R91002
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 5:19:22 PM	R91002
1,2-Dichloroethane (EDC)	9.5	0.25	1.0		µg/L	1	9/13/2022 5:19:22 PM	R91002
Acetone	ND	2.5	10		µg/L	1	9/13/2022 5:19:22 PM	R91002
Bromomethane	ND	0.85	3.0		µg/L	1	9/13/2022 5:19:22 PM	R91002
2-Butanone	ND	2.0	10		µg/L	1	9/13/2022 5:19:22 PM	R91002
Carbon disulfide	ND	0.59	10		µg/L	1	9/13/2022 5:19:22 PM	R91002
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/13/2022 5:19:22 PM	R91002
Chloroform	ND	0.13	1.0		µg/L	1	9/13/2022 5:19:22 PM	R91002
Chloromethane	ND	0.41	3.0		µg/L	1	9/13/2022 5:19:22 PM	R91002
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/13/2022 5:19:22 PM	R91002
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/13/2022 5:19:22 PM	R91002
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/13/2022 5:19:22 PM	R91002
Isopropylbenzene	1.2	0.18	1.0		µg/L	1	9/13/2022 5:19:22 PM	R91002
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/13/2022 5:19:22 PM	R91002
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/13/2022 5:19:22 PM	R91002
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/13/2022 5:19:22 PM	R91002
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 5:19:22 PM	R91002
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/13/2022 5:19:22 PM	R91002
Styrene	ND	0.14	1.0		µg/L	1	9/13/2022 5:19:22 PM	R91002
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/13/2022 5:19:22 PM	R91002
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/13/2022 5:19:22 PM	R91002
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/13/2022 5:19:22 PM	R91002
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/13/2022 5:19:22 PM	R91002
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/13/2022 5:19:22 PM	R91002
Surr: 1,2-Dichloroethane-d4	105	0	70-130		%Rec	1	9/13/2022 5:19:22 PM	R91002
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	9/13/2022 5:19:22 PM	R91002
Surr: Dibromofluoromethane	113	0	70-130		%Rec	1	9/13/2022 5:19:22 PM	R91002
Surr: Toluene-d8	104	0	70-130		%Rec	1	9/13/2022 5:19:22 PM	R91002

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-56
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 12:10:00 PM
Lab ID: 2209349-009B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	9/13/2022 7:25:21 PM	70123

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-56
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 12:10:00 PM
Lab ID: 2209349-009C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	9/13/2022 8:50:50 PM	70053
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/13/2022 8:50:50 PM	70053
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	9/13/2022 8:50:50 PM	70053
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/13/2022 8:50:50 PM	70053
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/13/2022 8:50:50 PM	70053
Diethyl phthalate	ND	6.0	10		µg/L	1	9/13/2022 8:50:50 PM	70053
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/13/2022 8:50:50 PM	70053
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	9/13/2022 8:50:50 PM	70053
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/13/2022 8:50:50 PM	70053
2-Methylphenol	ND	5.0	10		µg/L	1	9/13/2022 8:50:50 PM	70053
3+4-Methylphenol	ND	5.1	10		µg/L	1	9/13/2022 8:50:50 PM	70053
Phenol	ND	18	20		µg/L	1	9/13/2022 8:50:50 PM	70053
Pyridine	ND	14	40		µg/L	1	9/13/2022 8:50:50 PM	70053
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/13/2022 8:50:50 PM	70053
Surr: 2-Fluorophenol	44.5	0	15-84.5		%Rec	1	9/13/2022 8:50:50 PM	70053
Surr: Phenol-d5	34.3	0	15-67		%Rec	1	9/13/2022 8:50:50 PM	70053
Surr: 2,4,6-Tribromophenol	58.8	0	15-108		%Rec	1	9/13/2022 8:50:50 PM	70053
Surr: Nitrobenzene-d5	59.3	0	16.8-112		%Rec	1	9/13/2022 8:50:50 PM	70053
Surr: 2-Fluorobiphenyl	58.6	0	15-101		%Rec	1	9/13/2022 8:50:50 PM	70053
Surr: 4-Terphenyl-d14	76.7	0	34.4-134		%Rec	1	9/13/2022 8:50:50 PM	70053
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	0.68	0.11	1.0	J	µg/L	1	9/12/2022 5:11:00 PM	70053
Naphthalene	ND	0.20	0.30		µg/L	1	9/12/2022 5:11:00 PM	70053
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	9/12/2022 5:11:00 PM	70053
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	9/12/2022 5:11:00 PM	70053
Acenaphthene	ND	0.14	0.30		µg/L	1	9/12/2022 5:11:00 PM	70053
Fluorene	ND	0.095	0.30		µg/L	1	9/12/2022 5:11:00 PM	70053
Phenanthrene	ND	0.16	0.30		µg/L	1	9/12/2022 5:11:00 PM	70053
Anthracene	ND	0.14	0.30		µg/L	1	9/12/2022 5:11:00 PM	70053
Fluoranthene	ND	0.14	0.30		µg/L	1	9/12/2022 5:11:00 PM	70053
Pyrene	ND	0.32	1.0		µg/L	1	9/12/2022 5:11:00 PM	70053
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/12/2022 5:11:00 PM	70053
Chrysene	ND	0.25	0.30		µg/L	1	9/12/2022 5:11:00 PM	70053
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/12/2022 5:11:00 PM	70053
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/12/2022 5:11:00 PM	70053
Surr: Nitrobenzene-d5	55.9	0	31.6-100		%Rec	1	9/12/2022 5:11:00 PM	70053
Surr: 2-Fluorobiphenyl	49.2	0	26.7-90.1		%Rec	1	9/12/2022 5:11:00 PM	70053
Surr: 4-Terphenyl-d14	53.8	0	72.3-147	S	%Rec	1	9/12/2022 5:11:00 PM	70053

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-56
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 12:10:00 PM
Lab ID: 2209349-009D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.41	0.0016	0.0030		mg/L	1	9/9/2022 3:45:12 PM	70055
Beryllium	ND	0.00088	0.0020		mg/L	1	9/9/2022 3:45:12 PM	70055
Cadmium	ND	0.0018	0.0020		mg/L	1	9/9/2022 3:45:12 PM	70055
Chromium	0.0049	0.0020	0.0060	J	mg/L	1	9/9/2022 3:45:12 PM	70055
Cobalt	0.0066	0.0035	0.0060		mg/L	1	9/9/2022 3:45:12 PM	70055
Nickel	0.064	0.0053	0.010		mg/L	1	9/9/2022 3:45:12 PM	70055
Silver	ND	0.0018	0.0050		mg/L	1	9/9/2022 3:45:12 PM	70055
Vanadium	0.014	0.0035	0.050	J	mg/L	1	9/9/2022 3:45:12 PM	70055
Zinc	0.0093	0.0039	0.010	J	mg/L	1	9/9/2022 3:45:12 PM	70055
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/12/2022 1:25:02 PM	70055
Arsenic	0.0036	0.00013	0.0010		mg/L	1	9/12/2022 1:25:02 PM	70055
Lead	0.0021	0.000061	0.00050		mg/L	1	9/12/2022 1:25:02 PM	70055
Selenium	0.00050	0.00037	0.0010	J	mg/L	1	9/12/2022 1:25:02 PM	70055
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00016	0.000091	0.00020	J	mg/L	1	9/17/2022 11:26:02 AM	70231

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-56
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 12:10:00 PM
Lab ID: 2209349-009E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.36	0.0011	0.0020		mg/L	1	9/15/2022 6:00:06 PM	B91088
Beryllium	ND	0.00088	0.0020		mg/L	1	9/15/2022 6:00:06 PM	B91088
Cadmium	ND	0.00098	0.0020		mg/L	1	9/15/2022 6:00:06 PM	B91088
Chromium	ND	0.0020	0.0060		mg/L	1	9/15/2022 6:00:06 PM	B91088
Cobalt	ND	0.0024	0.0060		mg/L	1	9/15/2022 6:00:06 PM	B91088
Nickel	0.065	0.0033	0.010		mg/L	1	9/15/2022 6:00:06 PM	B91088
Silver	ND	0.0013	0.0050		mg/L	1	9/15/2022 6:00:06 PM	B91088
Vanadium	0.0067	0.0017	0.050	J	mg/L	1	9/15/2022 6:00:06 PM	B91088
Zinc	0.012	0.0032	0.010		mg/L	1	9/15/2022 6:00:06 PM	B91088
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/13/2022 2:19:11 PM	A91030
Arsenic	0.0023	0.00012	0.0010		mg/L	1	9/13/2022 2:19:11 PM	A91030
Lead	0.00041	0.000057	0.00050	J	mg/L	1	9/13/2022 2:19:11 PM	A91030
Selenium	ND	0.00034	0.0010		mg/L	1	9/13/2022 4:26:30 PM	A91030
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00015	0.000091	0.00020	J	mg/L	1	9/17/2022 11:28:09 AM	70231

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-56
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 12:10:00 PM
Lab ID: 2209349-009F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PAC**	
Cyanide	3.73	1.80	5.00	J	ug/L	1	9/16/2022 12:41:00 PM	R91489

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB-9-7-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022 12:10:00 PM
Lab ID: 2209349-010A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	9/13/2022 5:47:58 PM	R91002
Toluene	ND	0.20	1.0		µg/L	1	9/13/2022 5:47:58 PM	R91002
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/13/2022 5:47:58 PM	R91002
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/13/2022 5:47:58 PM	R91002
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/13/2022 5:47:58 PM	R91002
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 5:47:58 PM	R91002
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/13/2022 5:47:58 PM	R91002
Acetone	ND	2.5	10		µg/L	1	9/13/2022 5:47:58 PM	R91002
Bromomethane	ND	0.85	3.0		µg/L	1	9/13/2022 5:47:58 PM	R91002
2-Butanone	6.8	2.0	10	J	µg/L	1	9/13/2022 5:47:58 PM	R91002
Carbon disulfide	ND	0.59	10		µg/L	1	9/13/2022 5:47:58 PM	R91002
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/13/2022 5:47:58 PM	R91002
Chloroform	ND	0.13	1.0		µg/L	1	9/13/2022 5:47:58 PM	R91002
Chloromethane	ND	0.41	3.0		µg/L	1	9/13/2022 5:47:58 PM	R91002
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/13/2022 5:47:58 PM	R91002
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/13/2022 5:47:58 PM	R91002
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/13/2022 5:47:58 PM	R91002
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 5:47:58 PM	R91002
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/13/2022 5:47:58 PM	R91002
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/13/2022 5:47:58 PM	R91002
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/13/2022 5:47:58 PM	R91002
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 5:47:58 PM	R91002
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/13/2022 5:47:58 PM	R91002
Styrene	ND	0.14	1.0		µg/L	1	9/13/2022 5:47:58 PM	R91002
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/13/2022 5:47:58 PM	R91002
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/13/2022 5:47:58 PM	R91002
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/13/2022 5:47:58 PM	R91002
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/13/2022 5:47:58 PM	R91002
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/13/2022 5:47:58 PM	R91002
Surr: 1,2-Dichloroethane-d4	102	0	70-130		%Rec	1	9/13/2022 5:47:58 PM	R91002
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	1	9/13/2022 5:47:58 PM	R91002
Surr: Dibromofluoromethane	114	0	70-130		%Rec	1	9/13/2022 5:47:58 PM	R91002
Surr: Toluene-d8	102	0	70-130		%Rec	1	9/13/2022 5:47:58 PM	R91002

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-9-7-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022
Lab ID: 2209349-011A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	9/13/2022 3:24:00 PM	R90998
Surr: BFB	103	0	70-130		%Rec	1	9/13/2022 3:24:00 PM	R90998
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	9/14/2022 12:58:26 PM	R91045
Toluene	ND	0.20	1.0		µg/L	1	9/14/2022 12:58:26 PM	R91045
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/14/2022 12:58:26 PM	R91045
Methyl tert-butyl ether (MTBE)	4.2	0.39	1.0		µg/L	1	9/14/2022 12:58:26 PM	R91045
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/14/2022 12:58:26 PM	R91045
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/14/2022 12:58:26 PM	R91045
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/14/2022 12:58:26 PM	R91045
Acetone	ND	2.5	10		µg/L	1	9/14/2022 12:58:26 PM	R91045
Bromomethane	ND	0.85	3.0		µg/L	1	9/14/2022 12:58:26 PM	R91045
2-Butanone	ND	2.0	10		µg/L	1	9/14/2022 12:58:26 PM	R91045
Carbon disulfide	ND	0.59	10		µg/L	1	9/14/2022 12:58:26 PM	R91045
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/14/2022 12:58:26 PM	R91045
Chloroform	ND	0.13	1.0		µg/L	1	9/14/2022 12:58:26 PM	R91045
Chloromethane	ND	0.41	3.0		µg/L	1	9/14/2022 12:58:26 PM	R91045
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/14/2022 12:58:26 PM	R91045
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/14/2022 12:58:26 PM	R91045
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/14/2022 12:58:26 PM	R91045
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/14/2022 12:58:26 PM	R91045
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/14/2022 12:58:26 PM	R91045
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/14/2022 12:58:26 PM	R91045
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/14/2022 12:58:26 PM	R91045
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/14/2022 12:58:26 PM	R91045
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/14/2022 12:58:26 PM	R91045
Styrene	ND	0.14	1.0		µg/L	1	9/14/2022 12:58:26 PM	R91045
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/14/2022 12:58:26 PM	R91045
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/14/2022 12:58:26 PM	R91045
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/14/2022 12:58:26 PM	R91045
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/14/2022 12:58:26 PM	R91045
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/14/2022 12:58:26 PM	R91045
Surr: 1,2-Dichloroethane-d4	106	0	70-130		%Rec	1	9/14/2022 12:58:26 PM	R91045
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	9/14/2022 12:58:26 PM	R91045
Surr: Dibromofluoromethane	122	0	70-130		%Rec	1	9/14/2022 12:58:26 PM	R91045
Surr: Toluene-d8	102	0	70-130		%Rec	1	9/14/2022 12:58:26 PM	R91045

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-9-7-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022
Lab ID: 2209349-011B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	9/13/2022 7:55:40 PM	70123

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-9-7-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022
Lab ID: 2209349-011C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.031	0.016	0.064	J	mg/L	1	9/9/2022 8:49:13 PM	70050
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	9/9/2022 8:49:13 PM	70050
Surr: DNOP	94.1	0	42.2-138		%Rec	1	9/9/2022 8:49:13 PM	70050
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	9/13/2022 9:33:22 PM	70053
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/13/2022 9:33:22 PM	70053
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	9/13/2022 9:33:22 PM	70053
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/13/2022 9:33:22 PM	70053
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/13/2022 9:33:22 PM	70053
Diethyl phthalate	ND	6.0	10		µg/L	1	9/13/2022 9:33:22 PM	70053
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/13/2022 9:33:22 PM	70053
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	9/13/2022 9:33:22 PM	70053
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/13/2022 9:33:22 PM	70053
2-Methylphenol	ND	5.0	10		µg/L	1	9/13/2022 9:33:22 PM	70053
3+4-Methylphenol	ND	5.1	10		µg/L	1	9/13/2022 9:33:22 PM	70053
Phenol	ND	18	20		µg/L	1	9/13/2022 9:33:22 PM	70053
Pyridine	ND	14	40		µg/L	1	9/13/2022 9:33:22 PM	70053
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/13/2022 9:33:22 PM	70053
Surr: 2-Fluorophenol	47.1	0	15-84.5		%Rec	1	9/13/2022 9:33:22 PM	70053
Surr: Phenol-d5	37.6	0	15-67		%Rec	1	9/13/2022 9:33:22 PM	70053
Surr: 2,4,6-Tribromophenol	59.3	0	15-108		%Rec	1	9/13/2022 9:33:22 PM	70053
Surr: Nitrobenzene-d5	61.3	0	16.8-112		%Rec	1	9/13/2022 9:33:22 PM	70053
Surr: 2-Fluorobiphenyl	59.5	0	15-101		%Rec	1	9/13/2022 9:33:22 PM	70053
Surr: 4-Terphenyl-d14	87.3	0	34.4-134		%Rec	1	9/13/2022 9:33:22 PM	70053
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	9/12/2022 5:56:00 PM	70053
Naphthalene	ND	0.20	0.30		µg/L	1	9/12/2022 5:56:00 PM	70053
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	9/12/2022 5:56:00 PM	70053
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	9/12/2022 5:56:00 PM	70053
Acenaphthene	ND	0.14	0.30		µg/L	1	9/12/2022 5:56:00 PM	70053
Fluorene	ND	0.095	0.30		µg/L	1	9/12/2022 5:56:00 PM	70053
Phenanthrene	ND	0.16	0.30		µg/L	1	9/12/2022 5:56:00 PM	70053
Anthracene	ND	0.14	0.30		µg/L	1	9/12/2022 5:56:00 PM	70053
Fluoranthene	ND	0.14	0.30		µg/L	1	9/12/2022 5:56:00 PM	70053
Pyrene	ND	0.32	1.0		µg/L	1	9/12/2022 5:56:00 PM	70053
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/12/2022 5:56:00 PM	70053
Chrysene	ND	0.25	0.30		µg/L	1	9/12/2022 5:56:00 PM	70053
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/12/2022 5:56:00 PM	70053
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/12/2022 5:56:00 PM	70053

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-9-7-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022
Lab ID: 2209349-011C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	58.0	0	31.6-100		%Rec	1	9/12/2022 5:56:00 PM	70053
Surr: 2-Fluorobiphenyl	52.5	0	26.7-90.1		%Rec	1	9/12/2022 5:56:00 PM	70053
Surr: 4-Terphenyl-d14	67.0	0	72.3-147	S	%Rec	1	9/12/2022 5:56:00 PM	70053

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-9-7-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022
Lab ID: 2209349-011D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.036	0.0016	0.0030		mg/L	1	9/9/2022 3:48:35 PM	70055
Beryllium	ND	0.00088	0.0020		mg/L	1	9/9/2022 3:48:35 PM	70055
Cadmium	ND	0.0018	0.0020		mg/L	1	9/9/2022 3:48:35 PM	70055
Chromium	0.0033	0.0020	0.0060	J	mg/L	1	9/9/2022 3:48:35 PM	70055
Cobalt	ND	0.0035	0.0060		mg/L	1	9/9/2022 3:48:35 PM	70055
Nickel	ND	0.0053	0.010		mg/L	1	9/9/2022 3:48:35 PM	70055
Silver	ND	0.0018	0.0050		mg/L	1	9/9/2022 3:48:35 PM	70055
Vanadium	ND	0.0035	0.050		mg/L	1	9/9/2022 3:48:35 PM	70055
Zinc	ND	0.0039	0.010		mg/L	1	9/9/2022 3:48:35 PM	70055
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/12/2022 1:27:28 PM	70055
Arsenic	0.00064	0.00013	0.0010	J	mg/L	1	9/12/2022 1:27:28 PM	70055
Lead	0.00032	0.000061	0.00050	J	mg/L	1	9/12/2022 1:27:28 PM	70055
Selenium	ND	0.00037	0.0010		mg/L	1	9/12/2022 1:27:28 PM	70055
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00015	0.000091	0.00020	J	mg/L	1	9/17/2022 11:30:16 AM	70231

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-9-7-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022
Lab ID: 2209349-011E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.032	0.0011	0.0020		mg/L	1	9/15/2022 6:04:23 PM	B91088
Beryllium	ND	0.00088	0.0020		mg/L	1	9/15/2022 6:04:23 PM	B91088
Cadmium	ND	0.00098	0.0020		mg/L	1	9/15/2022 6:04:23 PM	B91088
Chromium	ND	0.0020	0.0060		mg/L	1	9/15/2022 6:04:23 PM	B91088
Cobalt	ND	0.0024	0.0060		mg/L	1	9/15/2022 6:04:23 PM	B91088
Nickel	ND	0.0033	0.010		mg/L	1	9/15/2022 6:04:23 PM	B91088
Silver	ND	0.0013	0.0050		mg/L	1	9/15/2022 6:04:23 PM	B91088
Vanadium	ND	0.0017	0.050		mg/L	1	9/15/2022 6:04:23 PM	B91088
Zinc	0.025	0.0032	0.010		mg/L	1	9/15/2022 6:04:23 PM	B91088
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/13/2022 2:21:52 PM	A91030
Arsenic	0.00051	0.00012	0.0010	J	mg/L	1	9/13/2022 2:21:52 PM	A91030
Lead	0.00013	0.000057	0.00050	J	mg/L	1	9/13/2022 2:21:52 PM	A91030
Selenium	ND	0.00034	0.0010		mg/L	1	9/13/2022 4:29:12 PM	A91030
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00017	0.000091	0.00020	J	mg/L	1	9/17/2022 11:36:41 AM	70231

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-9-7-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/7/2022
Lab ID: 2209349-011F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PAC**	
Cyanide	ND	1.80	5.00		ug/L	1	9/19/2022 3:44:00 PM	R91489

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 3rd Quarter
Collection Date:
Lab ID: 2209349-012A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	9/13/2022 6:45:08 PM	R91002
Toluene	ND	0.20	1.0		µg/L	1	9/13/2022 6:45:08 PM	R91002
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/13/2022 6:45:08 PM	R91002
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/13/2022 6:45:08 PM	R91002
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/13/2022 6:45:08 PM	R91002
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 6:45:08 PM	R91002
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/13/2022 6:45:08 PM	R91002
Acetone	ND	2.5	10		µg/L	1	9/13/2022 6:45:08 PM	R91002
Bromomethane	ND	0.85	3.0		µg/L	1	9/13/2022 6:45:08 PM	R91002
2-Butanone	ND	2.0	10		µg/L	1	9/13/2022 6:45:08 PM	R91002
Carbon disulfide	ND	0.59	10		µg/L	1	9/13/2022 6:45:08 PM	R91002
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/13/2022 6:45:08 PM	R91002
Chloroform	ND	0.13	1.0		µg/L	1	9/13/2022 6:45:08 PM	R91002
Chloromethane	ND	0.41	3.0		µg/L	1	9/13/2022 6:45:08 PM	R91002
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/13/2022 6:45:08 PM	R91002
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/13/2022 6:45:08 PM	R91002
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/13/2022 6:45:08 PM	R91002
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 6:45:08 PM	R91002
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/13/2022 6:45:08 PM	R91002
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/13/2022 6:45:08 PM	R91002
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/13/2022 6:45:08 PM	R91002
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 6:45:08 PM	R91002
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/13/2022 6:45:08 PM	R91002
Styrene	ND	0.14	1.0		µg/L	1	9/13/2022 6:45:08 PM	R91002
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/13/2022 6:45:08 PM	R91002
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/13/2022 6:45:08 PM	R91002
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/13/2022 6:45:08 PM	R91002
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/13/2022 6:45:08 PM	R91002
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/13/2022 6:45:08 PM	R91002
Surr: 1,2-Dichloroethane-d4	103	0	70-130		%Rec	1	9/13/2022 6:45:08 PM	R91002
Surr: 4-Bromofluorobenzene	106	0	70-130		%Rec	1	9/13/2022 6:45:08 PM	R91002
Surr: Dibromofluoromethane	112	0	70-130		%Rec	1	9/13/2022 6:45:08 PM	R91002
Surr: Toluene-d8	101	0	70-130		%Rec	1	9/13/2022 6:45:08 PM	R91002

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209349**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 3rd Quarter
Collection Date:
Lab ID: 2209349-012B
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	9/13/2022 8:10:52 PM	70123

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

ANALYTICAL REPORT

September 19, 2022

Hall Environmental Analysis Laboratory

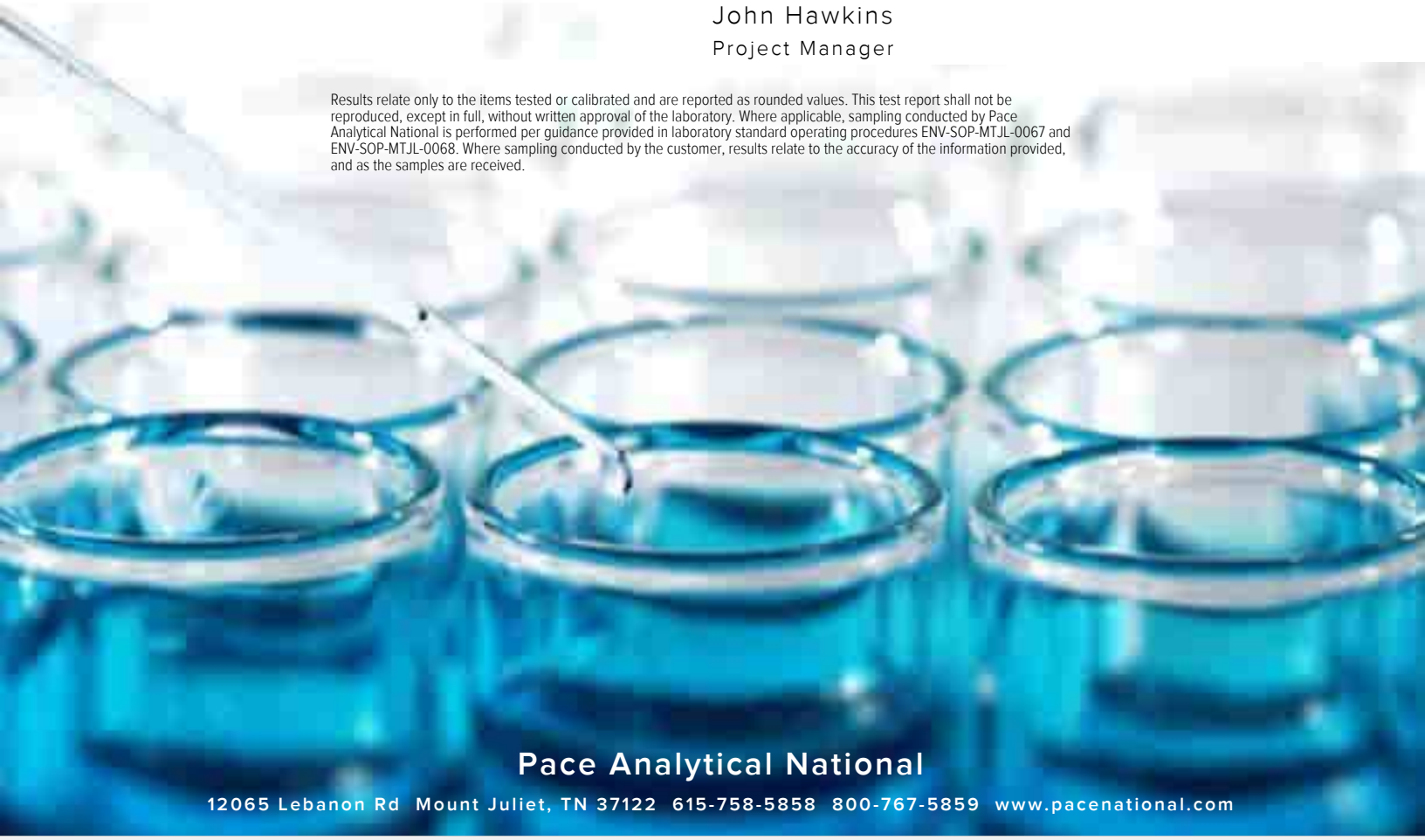
Sample Delivery Group:	L1534232
Samples Received:	09/09/2022
Project Number:	
Description:	

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By: John V Hawkins

John Hawkins
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 5

Sr: Sample Results 6

2209349-001F EB-9-7-22 L1534232-01 6

2209349-002F OW-50 L1534232-02 7

2209349-003F OW-52 L1534232-03 8

2209349-004F OW-29 L1534232-04 9

2209349-005F OW-54 L1534232-05 10

2209349-006F OW-66 L1534232-06 11

2209349-007F OW-55 L1534232-07 12

2209349-008F OW-13 L1534232-08 13

2209349-009F OW-56 L1534232-09 14

2209349-0011F DUP-9-7-22 L1534232-10 15

Qc: Quality Control Summary 16

Wet Chemistry by Method 4500CN E-2016 16

Gl: Glossary of Terms 18

Al: Accreditations & Locations 19

Sc: Sample Chain of Custody 20

SAMPLE SUMMARY

2209349-001F EB-9-7-22 L1534232-01 GW

Collected by	Collected date/time	Received date/time
	09/07/22 08:00	09/09/22 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1925221	1	09/14/22 17:32	09/16/22 12:28	CAT	Mt. Juliet, TN

2209349-002F OW-50 L1534232-02 GW

Collected by	Collected date/time	Received date/time
	09/07/22 08:30	09/09/22 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1925221	1	09/14/22 17:32	09/16/22 12:30	CAT	Mt. Juliet, TN

2209349-003F OW-52 L1534232-03 GW

Collected by	Collected date/time	Received date/time
	09/07/22 09:00	09/09/22 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1925221	1	09/14/22 17:32	09/16/22 12:35	CAT	Mt. Juliet, TN

2209349-004F OW-29 L1534232-04 GW

Collected by	Collected date/time	Received date/time
	09/07/22 10:00	09/09/22 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1925221	1	09/14/22 17:32	09/16/22 12:36	CAT	Mt. Juliet, TN

2209349-005F OW-54 L1534232-05 GW

Collected by	Collected date/time	Received date/time
	09/07/22 10:35	09/09/22 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1925221	1	09/14/22 17:32	09/16/22 12:37	CAT	Mt. Juliet, TN

2209349-006F OW-66 L1534232-06 GW

Collected by	Collected date/time	Received date/time
	09/07/22 11:00	09/09/22 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1925221	1	09/14/22 17:32	09/16/22 12:38	CAT	Mt. Juliet, TN

2209349-007F OW-55 L1534232-07 GW

Collected by	Collected date/time	Received date/time
	09/07/22 11:20	09/09/22 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1925221	1	09/14/22 17:32	09/16/22 12:39	CAT	Mt. Juliet, TN

2209349-008F OW-13 L1534232-08 GW

Collected by	Collected date/time	Received date/time
	09/07/22 11:45	09/09/22 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1925221	1	09/14/22 17:32	09/16/22 12:40	CAT	Mt. Juliet, TN

SAMPLE SUMMARY

2209349-009F OW-56 L1534232-09 GW

Collected by	Collected date/time	Received date/time
	09/07/22 12:10	09/09/22 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1925221	1	09/14/22 17:32	09/16/22 12:41	CAT	Mt. Juliet, TN

2209349-0011F DUP-9-7-22 L1534232-10 GW

Collected by	Collected date/time	Received date/time
	09/07/22 00:00	09/09/22 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1925290	1	09/19/22 00:58	09/19/22 15:44	CAT	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John V Hawkins

John Hawkins
Project Manager

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	U		1.80	5.00	1	09/16/2022 12:28	WG1925221

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	2.30	J J6	1.80	5.00	1	09/16/2022 12:30	WG1925221

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	U		1.80	5.00	1	09/16/2022 12:35	WG1925221

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	4.74	J	1.80	5.00	1	09/16/2022 12:36	WG1925221

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	5.33		1.80	5.00	1	09/16/2022 12:37	WG1925221

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	10.1		1.80	5.00	1	09/16/2022 12:38	WG1925221

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	6.38		1.80	5.00	1	09/16/2022 12:39	WG1925221

Received by OCD: 4/21/2023 9:21:57 AM

2209349-008I OW-13
Collected date/time: 09/07/22 11:45
L1534232

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	U		1.80	5.00	1	09/16/2022 12:40	WG1925221

Released to Imaging: 4/21/2023 9:40:26 AM

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	3.73	J	1.80	5.00	1	09/16/2022 12:41	WG1925221

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	U		1.80	5.00	1	09/19/2022 15:44	WG1925290

Method Blank (MB)

(MB) R3838025-1 09/16/22 12:10

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Cyanide	U		1.80	5.00

L1533594-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1533594-01 09/16/22 12:16 • (DUP) R3838025-3 09/16/22 12:17

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	2.59	U	1	200	P1	20

L1534232-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1534232-01 09/16/22 12:28 • (DUP) R3838025-6 09/16/22 12:29

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3838025-2 09/16/22 12:11

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	100	96.6	96.6	87.1-120	

L1534230-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1534230-01 09/16/22 12:25 • (MS) R3838025-4 09/16/22 12:26 • (MSD) R3838025-5 09/16/22 12:27

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	100	U	94.9	95.8	94.9	95.8	1	90.0-110			0.944	20

L1534232-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1534232-02 09/16/22 12:30 • (MS) R3838025-7 09/16/22 12:31 • (MSD) R3838025-8 09/16/22 12:34

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	100	2.30	80.9	82.0	78.6	79.7	1	90.0-110	J6	J6	1.35	20

Method Blank (MB)

(MB) R3838823-1 09/19/22 15:37

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Cyanide	U		1.80	5.00

L1533610-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1533610-02 09/19/22 15:41 • (DUP) R3838823-3 09/19/22 15:42

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	U	U	1	0.000		20

L1534252-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1534252-02 09/19/22 15:49 • (DUP) R3838823-6 09/19/22 15:50

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3838823-2 09/19/22 15:38

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	100	95.9	95.9	87.1-120	

L1534232-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1534232-10 09/19/22 15:44 • (MS) R3838823-4 09/19/22 15:45 • (MSD) R3838823-5 09/19/22 15:46

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	100	U	94.7	94.8	94.7	94.8	1	90.0-110			0.106	20

L1535062-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1535062-02 09/19/22 15:57 • (MS) R3838823-7 09/19/22 15:59 • (MSD) R3838823-8 09/19/22 16:02

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	100	U	93.6	91.9	93.6	91.9	1	90.0-110			1.83	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Received by OCD: 4/21/2023 9:21:57 AM

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

L-050

ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

SUB CONTRATOR: Pace TN	COMPANY: PACE TN	PHONE: (800) 767-5859	FAX: (615) 758-5859
ADDRESS: 12065 Lebanon Rd		ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: Mt. Juliet, TN 37122			

L1534232

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS	
1	2209349-001F	EB-9-7-22	500AMBHDP F-NAOH	Groundw ater	9/7/2022 8:00:00 AM	1	Total Cyanide J and MDL	-01
2	2209349-002F	OW-50	500AMBHDP F-NAOH	Groundw ater	9/7/2022 8:30:00 AM	1	Total Cyanide J and MDL	-02
3	2209349-003F	OW-52	500AMBHDP F-NAOH	Groundw ater	9/7/2022 9:00:00 AM	1	Total Cyanide J and MDL	-03
4	2209349-004F	OW-29	500AMBHDP F-NAOH	Groundw ater	9/7/2022 10:00:00 AM	1	Total Cyanide J and MDL	-04
5	2209349-005F	OW-54	500AMBHDP F-NAOH	Groundw ater	9/7/2022 10:35:00 AM	1	Total Cyanide J and MDL	-05
6	2209349-006F	OW-66	500AMBHDP F-NAOH	Groundw ater	9/7/2022 11:00:00 AM	1	Total Cyanide J and MDL	-06
7	2209349-007F	OW-55	500AMBHDP F-NAOH	Groundw ater	9/7/2022 11:20:00 AM	1	Total Cyanide J and MDL	-07
8	2209349-008F	OW-13	500AMBHDP F-NAOH	Groundw ater	9/7/2022 11:45:00 AM	1	Total Cyanide J and MDL	-08
9	2209349-009F	OW-56	500AMBHDP F-NAOH	Groundw ater	9/7/2022 12:10:00 PM	1	Total Cyanide J and MDL	-09
10	2209349-011F	DUP-9-7-22	500AMBHDP F-NAOH	Groundw ater	9/7/2022	1	Total Cyanide J and MDL	-10

Cont.- 10
TB- Ø

Sample Receipt Checklist
COC Seal Present/Intact: Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
RAD Screen <0.5 mR/hr: Y N
If Applicable
VOA Zero Headspace: Y N
Pres.Correct/Check: Y N

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By: Chris	Date: 9/8/2022	Time: 8:45 AM	Received By: [signature]	Date: 09/09/22	Time: 0845
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☑ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY
Temp of samples 2.9+0=2.9 °C Attempt to Cool ?
Comments:

Released to Imaging: 4/21/2023 9:40:26 AM

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209349**
04-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70055** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **70055** RunNo: **90928**
Prep Date: **9/8/2022** Analysis Date: **9/9/2022** SeqNo: **3251055** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	0.0040	0.010								J

Sample ID: **LCSLL-S-70055** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **70055** RunNo: **90928**
Prep Date: **9/8/2022** Analysis Date: **9/9/2022** SeqNo: **3251056** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0010	0.0030	0.002000	0	51.0	50	150			J
Beryllium	0.0021	0.0020	0.002000	0	104	50	150			
Cadmium	0.0019	0.0020	0.002000	0	93.2	50	150			J
Chromium	0.0053	0.0060	0.006000	0	89.1	50	150			J
Cobalt	0.0068	0.0060	0.006000	0	113	50	150			
Nickel	0.0071	0.010	0.005000	0	142	50	150			J
Silver	0.0052	0.0050	0.005000	0	103	50	150			
Vanadium	0.010	0.050	0.01000	0	104	50	150			J
Zinc	0.014	0.010	0.01000	0	140	50	150			

Sample ID: **LCS-S-70055** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **70055** RunNo: **90928**
Prep Date: **9/8/2022** Analysis Date: **9/9/2022** SeqNo: **3251057** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0030	0.5000	0	98.1	85	115			
Beryllium	0.50	0.0020	0.5000	0	101	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.2	85	115			
Chromium	0.49	0.0060	0.5000	0	97.9	85	115			
Cobalt	0.49	0.0060	0.5000	0	97.4	85	115			
Nickel	0.48	0.010	0.5000	0	95.1	85	115			
Silver	0.097	0.0050	0.1000	0	97.2	85	115			
Vanadium	0.51	0.050	0.5000	0	101	85	115			
Zinc	0.50	0.010	0.5000	0	100	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209349**
04-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **2209349-001DMS** SampType: **MS** TestCode: **EPA Method 200.7: Metals**
Client ID: **EB-9-7-22** Batch ID: **70055** RunNo: **90928**
Prep Date: **9/8/2022** Analysis Date: **9/9/2022** SeqNo: **3251083** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0030	0.5000	0	99.3	70	130			
Beryllium	0.52	0.0020	0.5000	0	103	70	130			
Cadmium	0.50	0.0020	0.5000	0	100	70	130			
Chromium	0.50	0.0060	0.5000	0	99.6	70	130			
Cobalt	0.49	0.0060	0.5000	0	97.5	70	130			
Nickel	0.49	0.010	0.5000	0	97.4	70	130			
Silver	0.10	0.0050	0.1000	0	99.8	70	130			
Vanadium	0.50	0.050	0.5000	0	101	70	130			
Zinc	0.50	0.010	0.5000	0.006223	98.2	70	130			

Sample ID: **2209349-001DMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Metals**
Client ID: **EB-9-7-22** Batch ID: **70055** RunNo: **90928**
Prep Date: **9/8/2022** Analysis Date: **9/9/2022** SeqNo: **3251084** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0030	0.5000	0	100	70	130	1.00	20	
Beryllium	0.54	0.0020	0.5000	0	107	70	130	4.01	20	
Cadmium	0.51	0.0020	0.5000	0	101	70	130	0.998	20	
Chromium	0.51	0.0060	0.5000	0	102	70	130	2.21	20	
Cobalt	0.49	0.0060	0.5000	0	99.0	70	130	1.46	20	
Nickel	0.49	0.010	0.5000	0	98.8	70	130	1.49	20	
Silver	0.10	0.0050	0.1000	0	100	70	130	0.412	20	
Vanadium	0.53	0.050	0.5000	0	105	70	130	4.39	20	
Zinc	0.51	0.010	0.5000	0.006223	99.9	70	130	1.70	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209349**
04-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-B** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW** Batch ID: **B91088** RunNo: **91088**
Prep Date: Analysis Date: **9/15/2022** SeqNo: **3258295** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS-B** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **B91088** RunNo: **91088**
Prep Date: Analysis Date: **9/15/2022** SeqNo: **3258297** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0015	0.0020	0.002000	0	75.8	50	150			J
Beryllium	0.0020	0.0020	0.002000	0	101	50	150			
Cadmium	0.0018	0.0020	0.002000	0	91.7	50	150			J
Chromium	0.0073	0.0060	0.006000	0	121	50	150			
Cobalt	0.0068	0.0060	0.006000	0	114	50	150			
Nickel	0.0052	0.010	0.005000	0	105	50	150			J
Silver	0.0057	0.0050	0.005000	0	114	50	150			
Vanadium	0.011	0.050	0.01000	0	115	50	150			J
Zinc	0.012	0.010	0.01000	0	124	50	150			

Sample ID: **LCS-B** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **B91088** RunNo: **91088**
Prep Date: Analysis Date: **9/15/2022** SeqNo: **3258298** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0020	0.5000	0	102	85	115			
Beryllium	0.53	0.0020	0.5000	0	106	85	115			
Cadmium	0.52	0.0020	0.5000	0	105	85	115			
Chromium	0.52	0.0060	0.5000	0	103	85	115			
Cobalt	0.50	0.0060	0.5000	0	100	85	115			
Nickel	0.51	0.010	0.5000	0	102	85	115			
Silver	0.11	0.0050	0.1000	0	108	85	115			
Vanadium	0.53	0.050	0.5000	0	105	85	115			
Zinc	0.51	0.010	0.5000	0	103	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209349**

04-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **2209349-002EMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **OW-50**	Batch ID: **B91088**	RunNo: **91088**
Prep Date:	Analysis Date: **9/15/2022**	SeqNo: **3258364** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.54	0.0020	0.5000	0.05197	98.3	70	130			
Beryllium	0.53	0.0020	0.5000	0	107	70	130			
Cadmium	0.52	0.0020	0.5000	0	105	70	130			
Chromium	0.50	0.0060	0.5000	0	99.3	70	130			
Cobalt	0.49	0.0060	0.5000	0	97.9	70	130			
Nickel	0.50	0.010	0.5000	0	99.3	70	130			
Silver	0.098	0.0050	0.1000	0	98.4	70	130			
Vanadium	0.52	0.050	0.5000	0	104	70	130			
Zinc	0.54	0.010	0.5000	0.04435	100	70	130			

Sample ID: **2209349-002EMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **OW-50**	Batch ID: **B91088**	RunNo: **91088**
Prep Date:	Analysis Date: **9/15/2022**	SeqNo: **3258365** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.53	0.0020	0.5000	0.05197	96.6	70	130	1.60	20	
Beryllium	0.53	0.0020	0.5000	0	106	70	130	0.321	20	
Cadmium	0.51	0.0020	0.5000	0	102	70	130	2.40	20	
Chromium	0.49	0.0060	0.5000	0	97.9	70	130	1.46	20	
Cobalt	0.48	0.0060	0.5000	0	96.3	70	130	1.67	20	
Nickel	0.49	0.010	0.5000	0	97.7	70	130	1.65	20	
Silver	0.097	0.0050	0.1000	0	96.8	70	130	1.65	20	
Vanadium	0.51	0.050	0.5000	0	102	70	130	1.57	20	
Zinc	0.53	0.010	0.5000	0.04435	97.1	70	130	2.77	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209349**
04-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70055**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **70055**	RunNo: **90957**
Prep Date: **9/8/2022**	Analysis Date: **9/12/2022**	SeqNo: **3252707** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **MSLCSLL-70055**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **70055**	RunNo: **90957**
Prep Date: **9/8/2022**	Analysis Date: **9/12/2022**	SeqNo: **3252708** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0011	0.0010	0.001000	0	110	50	150			
Arsenic	0.0011	0.0010	0.001000	0	106	50	150			
Lead	0.00051	0.00050	0.0005000	0	102	50	150			
Selenium	0.0013	0.0010	0.001000	0	135	50	150			

Sample ID: **MSLCS-70055**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **70055**	RunNo: **90957**
Prep Date: **9/8/2022**	Analysis Date: **9/12/2022**	SeqNo: **3252721** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	102	85	115			
Arsenic	0.025	0.0010	0.02500	0	99.5	85	115			
Lead	0.013	0.00050	0.01250	0	101	85	115			
Selenium	0.026	0.0010	0.02500	0	105	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209349**
04-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A91030**	RunNo: **91030**
Prep Date:	Analysis Date: **9/13/2022**	SeqNo: **3255541** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A91030**	RunNo: **91030**
Prep Date:	Analysis Date: **9/13/2022**	SeqNo: **3255542** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0010	0.0010	0.001000	0	102	50	150			
Arsenic	0.0010	0.0010	0.001000	0	102	50	150			
Lead	0.00050	0.00050	0.0005000	0	100	50	150			
Selenium	0.00088	0.0010	0.001000	0	87.9	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A91030**	RunNo: **91030**
Prep Date:	Analysis Date: **9/13/2022**	SeqNo: **3255543** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	94.3	85	115			
Arsenic	0.025	0.0010	0.02500	0	98.9	85	115			
Lead	0.012	0.00050	0.01250	0	97.6	85	115			
Selenium	0.023	0.0010	0.02500	0	91.8	85	115			

Sample ID: **2209349-001EMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **EB-9-7-22**	Batch ID: **A91030**	RunNo: **91030**
Prep Date:	Analysis Date: **9/13/2022**	SeqNo: **3255559** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.023	0.0010	0.02500	0	90.9	70	130			
Arsenic	0.024	0.0010	0.02500	0	96.6	70	130			
Lead	0.012	0.00050	0.01250	0	93.3	70	130			
Selenium	0.024	0.0010	0.02500	0	96.6	70	130			

Sample ID: **2209349-001EMSDL**	SampType: **MSD**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **EB-9-7-22**	Batch ID: **A91030**	RunNo: **91030**
Prep Date:	Analysis Date: **9/13/2022**	SeqNo: **3255560** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209349**

04-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **2209349-001EMSDL**	SampType: **MSD**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **EB-9-7-22**	Batch ID: **A91030**	RunNo: **91030**
Prep Date:	Analysis Date: **9/13/2022**	SeqNo: **3255560** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.023	0.0010	0.02500	0	92.1	70	130	1.39	20	
Arsenic	0.025	0.0010	0.02500	0	101	70	130	4.58	20	
Lead	0.012	0.00050	0.01250	0	95.0	70	130	1.77	20	
Selenium	0.023	0.0010	0.02500	0	91.9	70	130	5.01	20	

Sample ID: **2209349-002EMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **OW-50**	Batch ID: **A91030**	RunNo: **91030**
Prep Date:	Analysis Date: **9/13/2022**	SeqNo: **3255562** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	98.4	70	130			
Arsenic	0.027	0.0010	0.02500	0.001755	101	70	130			
Lead	0.012	0.00050	0.01250	0	95.1	70	130			
Selenium	0.024	0.0010	0.02500	0	95.6	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209349**
04-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70231** SampType: **MBLK** TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW** Batch ID: **70231** RunNo: **91107**
Prep Date: **9/16/2022** Analysis Date: **9/17/2022** SeqNo: **3259047** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-70231** SampType: **LCSLL** TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC** Batch ID: **70231** RunNo: **91107**
Prep Date: **9/16/2022** Analysis Date: **9/17/2022** SeqNo: **3259048** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00017	0.00020	0.0001500	0	113	50	150			J

Sample ID: **LCS-70231** SampType: **LCS** TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW** Batch ID: **70231** RunNo: **91107**
Prep Date: **9/16/2022** Analysis Date: **9/17/2022** SeqNo: **3259049** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0052	0.00020	0.005000	0	105	85	115			

Sample ID: **2209349-011DMS** SampType: **MS** TestCode: **EPA Method 245.1: Mercury**
Client ID: **DUP-9-7-22** Batch ID: **70231** RunNo: **91107**
Prep Date: **9/16/2022** Analysis Date: **9/17/2022** SeqNo: **3259079** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0054	0.00020	0.005000	0.0001545	105	75	125			

Sample ID: **2209349-011DMSD** SampType: **MSD** TestCode: **EPA Method 245.1: Mercury**
Client ID: **DUP-9-7-22** Batch ID: **70231** RunNo: **91107**
Prep Date: **9/16/2022** Analysis Date: **9/17/2022** SeqNo: **3259080** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0.0001545	98.4	75	125	6.02	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209349**
04-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70123**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **70123**	RunNo: **91007**							
Prep Date: **9/13/2022**	Analysis Date: **9/13/2022**	SeqNo: **3254670**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-70123**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **LCSW**	Batch ID: **70123**	RunNo: **91007**							
Prep Date: **9/13/2022**	Analysis Date: **9/13/2022**	SeqNo: **3254671**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.091	0.010	0.1000	0	91.5	70	130			

Sample ID: **LCSD-70123**	SampType: **LCSD**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **LCSS02**	Batch ID: **70123**	RunNo: **91007**							
Prep Date: **9/13/2022**	Analysis Date: **9/13/2022**	SeqNo: **3254672**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.098	0.010	0.1000	0	98.3	70	130	7.22	20	

Sample ID: **MB-70123**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **70123**	RunNo: **91007**							
Prep Date: **9/13/2022**	Analysis Date: **9/13/2022**	SeqNo: **3254696**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209349**
04-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70050**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **PBW**	Batch ID: **70050**	RunNo: **90940**							
Prep Date: **9/8/2022**	Analysis Date: **9/9/2022**	SeqNo: **3251439**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.031	0.064								J
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.033		0.03750		86.9	42.2	138			

Sample ID: **LCS-70050**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSW**	Batch ID: **70050**	RunNo: **90940**							
Prep Date: **9/8/2022**	Analysis Date: **9/9/2022**	SeqNo: **3251440**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.17	0.064	0.1875	0	91.6	31.7	75.4			S
Surr: DNOP	0.020		0.01875		108	42.2	138			

Sample ID: **LCSD-70050**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSS02**	Batch ID: **70050**	RunNo: **90940**							
Prep Date: **9/8/2022**	Analysis Date: **9/9/2022**	SeqNo: **3251441**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.16	0.064	0.1875	0	84.5	31.7	75.4	8.04	20	S
Surr: DNOP	0.018		0.01875		98.5	42.2	138	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209349**
04-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **R90998**	RunNo: **90998**
Prep Date:	Analysis Date: **9/13/2022**	SeqNo: **3254363** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.50	0.050	0.5000	0	99.6	80	120			
Surr: BFB	45		20.00		223	70	130			S

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **R90998**	RunNo: **90998**
Prep Date:	Analysis Date: **9/13/2022**	SeqNo: **3254366** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	21		20.00		105	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209349**

04-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R91002**	RunNo: **91002**
Prep Date:	Analysis Date: **9/13/2022**	SeqNo: **3254499** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	93.5	70	130			
Toluene	19	1.0	20.00	0	93.5	70	130			
Chlorobenzene	20	1.0	20.00	0	97.9	70	130			
1,1-Dichloroethene	17	1.0	20.00	0	84.8	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	88.6	70	130			
Surr: 1,2-Dichloroethane-d4	9.8		10.00		98.5	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	11		10.00		112	70	130			
Surr: Toluene-d8	9.8		10.00		98.3	70	130			

Sample ID: **2209349-002ams**	SampType: **MS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **OW-50**	Batch ID: **R91002**	RunNo: **91002**
Prep Date:	Analysis Date: **9/13/2022**	SeqNo: **3254503** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	97.6	70	130			
Toluene	19	1.0	20.00	0	95.6	70	130			
Chlorobenzene	20	1.0	20.00	0	99.2	70	130			
1,1-Dichloroethene	18	1.0	20.00	0	90.6	70	130			
Trichloroethene (TCE)	19	1.0	20.00	0	92.9	70	130			
Surr: 1,2-Dichloroethane-d4	9.9		10.00		99.0	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		106	70	130			
Surr: Dibromofluoromethane	12		10.00		117	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Sample ID: **2209349-002amsd**	SampType: **MSD**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **OW-50**	Batch ID: **R91002**	RunNo: **91002**
Prep Date:	Analysis Date: **9/13/2022**	SeqNo: **3254504** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	90.1	70	130	8.00	20	
Toluene	18	1.0	20.00	0	88.7	70	130	7.48	20	
Chlorobenzene	18	1.0	20.00	0	91.8	70	130	7.77	20	
1,1-Dichloroethene	16	1.0	20.00	0	80.0	70	130	12.4	20	
Trichloroethene (TCE)	17	1.0	20.00	0	85.5	70	130	8.25	20	
Surr: 1,2-Dichloroethane-d4	9.5		10.00		94.7	70	130	0	0	
Surr: 4-Bromofluorobenzene	11		10.00		106	70	130	0	0	
Surr: Dibromofluoromethane	11		10.00		111	70	130	0	0	
Surr: Toluene-d8	9.9		10.00		98.6	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209349**
04-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R91002**	RunNo: **91002**
Prep Date:	Analysis Date: **9/13/2022**	SeqNo: **3254527** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	11		10.00		113	70	130			
Surr: Toluene-d8	10		10.00		103	70	130			

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R91045**	RunNo: **91045**
Prep Date:	Analysis Date: **9/14/2022**	SeqNo: **3256206** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209349**
04-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R91045**	RunNo: **91045**
Prep Date:	Analysis Date: **9/14/2022**	SeqNo: **3256206** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	97.4	70	130			
Toluene	19	1.0	20.00	0	95.6	70	130			
Chlorobenzene	20	1.0	20.00	0	99.9	70	130			
1,1-Dichloroethene	18	1.0	20.00	0	90.0	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	91.0	70	130			
Surr: 1,2-Dichloroethane-d4	9.6		10.00		96.3	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		105	70	130			
Surr: Dibromofluoromethane	11		10.00		114	70	130			
Surr: Toluene-d8	10		10.00		99.7	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R91045**	RunNo: **91045**
Prep Date:	Analysis Date: **9/14/2022**	SeqNo: **3256210** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209349**
04-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R91045**	RunNo: **91045**
Prep Date:	Analysis Date: **9/14/2022**	SeqNo: **3256210** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		104	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		105	70	130			
Surr: Dibromofluoromethane	12		10.00		116	70	130			
Surr: Toluene-d8	10		10.00		103	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209349**
04-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **mb-70053**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **70053**	RunNo: **91001**
Prep Date: **9/9/2022**	Analysis Date: **9/13/2022**	SeqNo: **3254483** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Anthracene	ND	10								
Benz(a)anthracene	ND	5.0								
Benzo(b)fluoranthene	ND	10								
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	10								
2,4-Dinitrophenol	ND	20								
Fluoranthene	ND	10								
Fluorene	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
1-Methylnaphthalene	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
Naphthalene	ND	5.0								
Phenanthrene	ND	10								
Phenol	ND	20								
Pyrene	ND	10								
Pyridine	ND	40								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	89		200.0		44.7	15	84.5			
Surr: Phenol-d5	70		200.0		35.2	15	67			
Surr: 2,4,6-Tribromophenol	96		200.0		47.8	15	108			
Surr: Nitrobenzene-d5	59		100.0		59.3	16.8	112			
Surr: 2-Fluorobiphenyl	54		100.0		54.4	15	101			
Surr: 4-Terphenyl-d14	83		100.0		83.2	34.4	134			

Sample ID: **lcs-70053**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **70053**	RunNo: **91001**
Prep Date: **9/9/2022**	Analysis Date: **9/13/2022**	SeqNo: **3254484** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209349**
04-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **lcs-70053** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW** Batch ID: **70053** RunNo: **91001**
Prep Date: **9/9/2022** Analysis Date: **9/13/2022** SeqNo: **3254484** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	57	10	100.0	0	57.0	21.3	104			
1,4-Dichlorobenzene	53	5.0	100.0	0	52.7	15	89.8			
Phenol	76	20	200.0	0	37.9	17	61.1			
Pyrene	79	10	100.0	0	78.7	61	123			
Surr: 2-Fluorophenol	84		200.0		42.0	15	84.5			
Surr: Phenol-d5	67		200.0		33.5	15	67			
Surr: 2,4,6-Tribromophenol	99		200.0		49.5	15	108			
Surr: Nitrobenzene-d5	58		100.0		57.8	16.8	112			
Surr: 2-Fluorobiphenyl	54		100.0		54.2	15	101			
Surr: 4-Terphenyl-d14	83		100.0		82.5	34.4	134			

Sample ID: **lcsd-70053** SampType: **LCSD** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02** Batch ID: **70053** RunNo: **91001**
Prep Date: **9/9/2022** Analysis Date: **9/13/2022** SeqNo: **3254485** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	58	10	100.0	0	57.8	21.3	104	1.48	45.3	
1,4-Dichlorobenzene	55	5.0	100.0	0	55.1	15	89.8	4.39	39.6	
Phenol	77	20	200.0	0	38.6	17	61.1	1.72	42.5	
Pyrene	92	10	100.0	0	92.1	61	123	15.7	11.8	R
Surr: 2-Fluorophenol	87		200.0		43.7	15	84.5	0	0	
Surr: Phenol-d5	70		200.0		34.8	15	67	0	0	
Surr: 2,4,6-Tribromophenol	120		200.0		61.6	15	108	0	0	
Surr: Nitrobenzene-d5	60		100.0		59.9	16.8	112	0	0	
Surr: 2-Fluorobiphenyl	56		100.0		56.2	15	101	0	0	
Surr: 4-Terphenyl-d14	93		100.0		92.8	34.4	134	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209349**
04-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **mb-70053**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**							
Client ID: **PBW**	Batch ID: **70053**	RunNo: **90964**							
Prep Date: **9/9/2022**	Analysis Date: **9/12/2022**	SeqNo: **3253020**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.30								
1-Methylnaphthalene	ND	0.30								
2-Methylnaphthalene	ND	0.30								
Acenaphthene	ND	0.30								
Fluorene	ND	0.30								
Phenanthrene	ND	0.30								
Anthracene	ND	0.30								
Fluoranthene	ND	0.30								
Pyrene	ND	1.0								
Benz(a)anthracene	ND	0.30								
Chrysene	ND	0.30								
Benzo(b)fluoranthene	ND	0.30								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	50		100.0		49.9	31.6	100			
Surr: 2,4,6-Tribromophenol	57		200.0		28.4	22	101			
Surr: 2-Fluorobiphenyl	49		100.0		48.8	26.7	90.1			
Surr: 4-Terphenyl-d14	71		100.0		71.4	72.3	147			S

Sample ID: **lcs-70053-lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**							
Client ID: **LCSW**	Batch ID: **70053**	RunNo: **90964**							
Prep Date: **9/9/2022**	Analysis Date: **9/12/2022**	SeqNo: **3253021**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.58	0.10	2.000	0	29.0	20.2	48.4			
Naphthalene	0.56	0.30	2.000	0	28.0	21.3	79.9			
1-Methylnaphthalene	0.52	0.30	2.000	0	26.0	22.2	80.3			
2-Methylnaphthalene	0.50	0.30	2.000	0	25.0	20.6	80.1			
Acenaphthene	0.66	0.30	2.000	0	33.0	29.8	82.7			
Fluorene	0.82	0.30	2.000	0	41.0	33.3	86			
Phenanthrene	1.1	0.30	2.000	0	53.0	38.2	93.9			
Anthracene	1.1	0.30	2.000	0	53.0	41.1	95.6			
Fluoranthene	1.2	0.30	2.000	0	61.0	52.9	123			
Pyrene	1.3	1.0	2.000	0	67.0	51	113			
Benz(a)anthracene	1.4	0.30	2.000	0	68.0	51	147			
Chrysene	1.3	0.30	2.000	0	67.0	55.3	115			
Benzo(b)fluoranthene	1.4	0.30	2.000	0	68.0	44.4	136			
Indeno(1,2,3-cd)pyrene	1.4	0.30	2.000	0	68.0	31.4	165			
Surr: Nitrobenzene-d5	54		100.0		54.0	31.6	100			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209349**
04-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **lcs-70053-lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**							
Client ID: **LCSW**	Batch ID: **70053**	RunNo: **90964**							
Prep Date: **9/9/2022**	Analysis Date: **9/12/2022**	SeqNo: **3253021**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	73		200.0		36.5	22	101			
Surr: 2-Fluorobiphenyl	53		100.0		52.9	26.7	90.1			
Surr: 4-Terphenyl-d14	70		100.0		70.2	72.3	147			S

Sample ID: **lcsd-70053-lf**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**							
Client ID: **LCSS02**	Batch ID: **70053**	RunNo: **90964**							
Prep Date: **9/9/2022**	Analysis Date: **9/12/2022**	SeqNo: **3253022**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.74	0.10	2.000	0	37.0	20.2	48.4	24.2	30.1	
Naphthalene	1.1	0.30	2.000	0	54.0	21.3	79.9	63.4	25.6	R
1-Methylnaphthalene	1.0	0.30	2.000	0	51.0	22.2	80.3	64.9	25	R
2-Methylnaphthalene	1.0	0.30	2.000	0	51.0	20.6	80.1	68.4	25	R
Acenaphthene	1.1	0.30	2.000	0	56.0	29.8	82.7	51.7	27.8	R
Fluorene	1.1	0.30	2.000	0	57.0	33.3	86	32.7	26.4	R
Phenanthrene	1.2	0.30	2.000	0	60.0	38.2	93.9	12.4	27.9	
Anthracene	1.2	0.30	2.000	0	58.0	41.1	95.6	9.01	25.6	
Fluoranthene	1.2	0.30	2.000	0	62.0	52.9	123	1.63	22.8	
Pyrene	1.3	1.0	2.000	0	67.0	51	113	0	20	
Benz(a)anthracene	1.4	0.30	2.000	0	68.0	51	147	0	24.1	
Chrysene	1.4	0.30	2.000	0	68.0	55.3	115	1.48	20	
Benzo(b)fluoranthene	1.3	0.30	2.000	0	66.0	44.4	136	2.99	24.5	
Indeno(1,2,3-cd)pyrene	1.4	0.30	2.000	0	69.0	31.4	165	1.46	21.1	
Surr: Nitrobenzene-d5	68		100.0		67.9	31.6	100	0	0	
Surr: 2,4,6-Tribromophenol	76		200.0		38.0	22	101	0	0	
Surr: 2-Fluorobiphenyl	65		100.0		65.3	26.7	90.1	0	0	
Surr: 4-Terphenyl-d14	68		100.0		68.2	72.3	147	0	0	S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **Marathon** Work Order Number: **2209349** RcptNo: **1**

Received By: **Joseph Alderette** **9/8/2022 7:35:00 AM**

Completed By: **Cheyenne Cason** **9/8/2022 8:31:04 AM**

Reviewed By: TMC 9/8/22

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐ JM 9/8/22
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☑ No ☐ NA ☐
10. Were any sample containers received broken? Yes ☐ No ☑

    # of preserved bottles checked for pH: 20 JM 9/8/22
    (<2 or >12 unless noted) 10/10
    Adjusted? YES
    Checked by: JM 9/8/22

11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

    Person Notified: _____ Date: _____
    By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
    Regarding: _____
    Client Instructions: _____

16. Additional remarks: 0.5ml of HNO3 was added to sample 006D for pH<2. JM 9/8/22.

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.3	Good	Yes			
2	0.3	Good	Yes			
3	0.9	Good	Yes			
4	2.9	Good	Yes			

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **Marathon** Work Order Number: **2209349** RcptNo: 1

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
5	1.3	Good	Yes			

Released to Imaging: 4/21/2023 9:21:28 AM

Chain-of-Custody Record

Marathon Gallup Refinery

g Address: 92 Giant Crossing Road
Jamestown, NM,87347
#: 808-640-1823
or Fax#:
Package:
ndard ☐ Level 4 (Full Validation)
itation: ☐ Az Compliance
AC ☐ Other
DD (Type)

Turn-Around Time:
X Standard Rush

Project Name:
2022 GW Sampling 3rd Quarter
~~2022 GW Sampling 1st Quarter~~ 10/4/22 as per Lesli Alexander

Project #: 697-080-001

Project Manager:
Lesli Alexander/Mackensie Swift

Sampler:
On Ice: ☑ Yes ☐ No
# of Coolers: 5
Cooler Temp(including CF): See Check list

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

e	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2209349	See Analyte List	8260B: VOC	8270C: SVOC	8270C SIM: PAH, 1,4 Dioxane	8015: TPH GRO/DRO/MRO	E200.7: Metals	E200.7: Dissolved Metals	E245.1 Mercury	E504.1: EDB	E335.4: Cyanide Subbed		537.1: PFAS	SM 5201B: BOD	410.4: COD	SM9223B E. Coli
9/7	8:00		EB-9-7-22	12		001	X	X	X	X	X	X	X	X	X	X					
9/7	8:30		OW-50	12		002	X	X	X	X	X	X	X	X	X	X					
9/7	9:00		OW-52	12		003	X	X	X	X	X	X	X	X	X	X					
9/7	10:00		OW-29	12		004	X	X	X	X	X	X	X	X	X	X					
9/7	10:35		OW-54	12		005	X	X	X	X	X	X	X	X	X	X					
9/7	10:50		OW-66	12		006	X	X	X	X	X	X	X	X	X	X					
9/7	11:20		OW-55	12		007	X	X	X	X	X	X	X	X	X	X					
9/7	11:45		OW-13	12		008	X	X	X	X	X	X	X	X	X	X					
9/7	12:10		OW-56	12		009	X	X	X	X	X	X	X	X	X	X					
9/7	12:10		FB-9-7-22	3		010		X	X	X											
9/7	—		Dup-9-7-22	12		011	X	X	X	X	X	X	X	X	X	X					
9/7	—		Trip BLANK	3		012		X	X	X											

Time:	Relinquished by:	Received by:	Via:	Date	Time
9/7 13:00	Hilary Tagi		courier	9-8-22	7:35
Time:	Relinquished by:	Received by:	Via:	Date	Time

OW-56 could only get 1 amber full.

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Received by OCD: 4/21/2023 9:21:57 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 07, 2022

Lesli Alexander

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX (505) 632-3911

RE: 2022 GW Sampling 3rd Quarter OrderNo.: 2209441

Dear Lesli Alexander:

Hall Environmental Analysis Laboratory received 8 sample(s) on 9/9/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **2209441**
Date: **10/7/2022**

CLIENT: Marathon
Project: 2022 GW Sampling 3rd Quarter

Analytical Notes Regarding this Workorder are listed below:

"S" flagged surrogates denote that the surrogate recovery was outstide of the standard limits.

Analytical Notes Regarding EPA Method 8270SIMS:
The recovery for chyrsene was low in the LCS/LCSD. This compound is reported in both the 8270SIM method and the standard 8270 method and is nondetect.
The recovery for 1,4-Dioxane was low in the LCSD.

Analytical Notes Regarding EPA Method 8270:
The "S" flagged surrogates for samples "East LDU" and "West LDU" were low due to the emulsive nature of the sample.

Analytical Notes Regarding EPA Method 8015DRO:
The LCS/LCSD had elevated recoveries.

Analytical Report
Lab Order: **2209441**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-08-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/8/2022 8:35:00 AM
Lab ID: 2209441-001A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	9/13/2022 3:44:00 PM	R90998
Surr: BFB	103	0	70-130		%Rec	1	9/13/2022 3:44:00 PM	R90998
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	9/13/2022 1:05:00 PM	R90977
Toluene	ND	0.20	1.0		µg/L	1	9/13/2022 1:05:00 PM	R90977
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/13/2022 1:05:00 PM	R90977
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/13/2022 1:05:00 PM	R90977
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/13/2022 1:05:00 PM	R90977
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 1:05:00 PM	R90977
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/13/2022 1:05:00 PM	R90977
Acetone	8.3	2.5	10	J	µg/L	1	9/13/2022 1:05:00 PM	R90977
Bromomethane	ND	0.85	3.0		µg/L	1	9/13/2022 1:05:00 PM	R90977
2-Butanone	ND	2.0	10		µg/L	1	9/13/2022 1:05:00 PM	R90977
Carbon disulfide	ND	0.59	10		µg/L	1	9/13/2022 1:05:00 PM	R90977
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/13/2022 1:05:00 PM	R90977
Chloroform	ND	0.13	1.0		µg/L	1	9/13/2022 1:05:00 PM	R90977
Chloromethane	ND	0.41	3.0		µg/L	1	9/13/2022 1:05:00 PM	R90977
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/13/2022 1:05:00 PM	R90977
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/13/2022 1:05:00 PM	R90977
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/13/2022 1:05:00 PM	R90977
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 1:05:00 PM	R90977
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/13/2022 1:05:00 PM	R90977
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/13/2022 1:05:00 PM	R90977
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/13/2022 1:05:00 PM	R90977
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 1:05:00 PM	R90977
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/13/2022 1:05:00 PM	R90977
Styrene	ND	0.14	1.0		µg/L	1	9/13/2022 1:05:00 PM	R90977
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/13/2022 1:05:00 PM	R90977
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/13/2022 1:05:00 PM	R90977
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/13/2022 1:05:00 PM	R90977
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/13/2022 1:05:00 PM	R90977
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/13/2022 1:05:00 PM	R90977
Surr: 1,2-Dichloroethane-d4	103	0	70-130		%Rec	1	9/13/2022 1:05:00 PM	R90977
Surr: 4-Bromofluorobenzene	90.4	0	70-130		%Rec	1	9/13/2022 1:05:00 PM	R90977
Surr: Dibromofluoromethane	102	0	70-130		%Rec	1	9/13/2022 1:05:00 PM	R90977
Surr: Toluene-d8	89.9	0	70-130		%Rec	1	9/13/2022 1:05:00 PM	R90977

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209441**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-08-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/8/2022 8:35:00 AM
Lab ID: 2209441-001B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	9/13/2022 9:41:57 PM	70123

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209441**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-08-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/8/2022 8:35:00 AM
Lab ID: 2209441-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.058	0.016	0.064	JE	mg/L	1	9/13/2022 6:50:32 PM	70105
Motor Oil Range Organics (MRO)	ND	0.052	0.080	E	mg/L	1	9/13/2022 6:50:32 PM	70105
Surr: DNOP	90.7	0	42.2-138		%Rec	1	9/13/2022 6:50:32 PM	70105
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	9/14/2022 2:19:46 PM	70094
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/14/2022 2:19:46 PM	70094
Chrysene	ND	5.3	10		µg/L	1	9/14/2022 2:19:46 PM	70094
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	9/14/2022 2:19:46 PM	70094
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/14/2022 2:19:46 PM	70094
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/14/2022 2:19:46 PM	70094
Diethyl phthalate	ND	6.0	10		µg/L	1	9/14/2022 2:19:46 PM	70094
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/14/2022 2:19:46 PM	70094
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	9/14/2022 2:19:46 PM	70094
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/14/2022 2:19:46 PM	70094
2-Methylphenol	ND	5.0	10		µg/L	1	9/14/2022 2:19:46 PM	70094
3+4-Methylphenol	ND	5.1	10		µg/L	1	9/14/2022 2:19:46 PM	70094
Phenol	ND	18	20		µg/L	1	9/14/2022 2:19:46 PM	70094
Pyridine	ND	14	40		µg/L	1	9/14/2022 2:19:46 PM	70094
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/14/2022 2:19:46 PM	70094
Surr: 2-Fluorophenol	43.5	0	15-84.5		%Rec	1	9/14/2022 2:19:46 PM	70094
Surr: Phenol-d5	32.9	0	15-67		%Rec	1	9/14/2022 2:19:46 PM	70094
Surr: 2,4,6-Tribromophenol	46.3	0	15-108		%Rec	1	9/14/2022 2:19:46 PM	70094
Surr: Nitrobenzene-d5	57.5	0	16.8-112		%Rec	1	9/14/2022 2:19:46 PM	70094
Surr: 2-Fluorobiphenyl	55.6	0	15-101		%Rec	1	9/14/2022 2:19:46 PM	70094
Surr: 4-Terphenyl-d14	74.9	0	34.4-134		%Rec	1	9/14/2022 2:19:46 PM	70094
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	ND	0.11	1.0	E	µg/L	1	9/13/2022 12:46:00 PM	70094
Naphthalene	ND	0.20	0.30		µg/L	1	9/13/2022 12:46:00 PM	70094
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	9/13/2022 12:46:00 PM	70094
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	9/13/2022 12:46:00 PM	70094
Acenaphthene	ND	0.14	0.30		µg/L	1	9/13/2022 12:46:00 PM	70094
Fluorene	ND	0.095	0.30		µg/L	1	9/13/2022 12:46:00 PM	70094
Phenanthrene	ND	0.16	0.30		µg/L	1	9/13/2022 12:46:00 PM	70094
Anthracene	ND	0.14	0.30		µg/L	1	9/13/2022 12:46:00 PM	70094
Fluoranthene	ND	0.14	0.30		µg/L	1	9/13/2022 12:46:00 PM	70094
Pyrene	ND	0.32	1.0		µg/L	1	9/13/2022 12:46:00 PM	70094
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/13/2022 12:46:00 PM	70094
Chrysene	ND	0.25	0.30	E	µg/L	1	9/13/2022 12:46:00 PM	70094
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/13/2022 12:46:00 PM	70094

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209441**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-08-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/8/2022 8:35:00 AM
Lab ID: 2209441-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/13/2022 12:46:00 PM	70094
Surr: Nitrobenzene-d5	53.8	0	31.6-100		%Rec	1	9/13/2022 12:46:00 PM	70094
Surr: 2-Fluorobiphenyl	49.0	0	26.7-90.1		%Rec	1	9/13/2022 12:46:00 PM	70094
Surr: 4-Terphenyl-d14	62.3	0	72.3-147	S	%Rec	1	9/13/2022 12:46:00 PM	70094

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209441**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-08-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/8/2022 8:35:00 AM
Lab ID: 2209441-001D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	ND	0.0016	0.0030		mg/L	1	9/13/2022 12:02:27 PM	70092
Beryllium	ND	0.00088	0.0020		mg/L	1	9/13/2022 12:02:27 PM	70092
Cadmium	ND	0.0018	0.0020		mg/L	1	9/13/2022 12:02:27 PM	70092
Chromium	ND	0.0020	0.0060		mg/L	1	9/13/2022 12:02:27 PM	70092
Cobalt	ND	0.0035	0.0060		mg/L	1	9/13/2022 12:02:27 PM	70092
Nickel	ND	0.0053	0.010		mg/L	1	9/13/2022 12:02:27 PM	70092
Silver	ND	0.0018	0.0050		mg/L	1	9/13/2022 12:02:27 PM	70092
Vanadium	ND	0.0035	0.050		mg/L	1	9/13/2022 12:02:27 PM	70092
Zinc	ND	0.0039	0.010		mg/L	1	9/13/2022 12:02:27 PM	70092
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/14/2022 4:00:07 PM	70092
Arsenic	ND	0.00013	0.0010		mg/L	1	9/14/2022 4:00:07 PM	70092
Lead	ND	0.000061	0.00050		mg/L	1	9/14/2022 4:00:07 PM	70092
Selenium	ND	0.00037	0.0010		mg/L	1	9/14/2022 4:00:07 PM	70092
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00017	0.000091	0.00020	J	mg/L	1	9/17/2022 11:38:50 AM	70232

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209441**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-08-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/8/2022 8:35:00 AM
Lab ID: 2209441-001E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	ND	0.0011	0.0020		mg/L	1	9/15/2022 6:08:33 PM	B91088
Beryllium	ND	0.00088	0.0020		mg/L	1	9/15/2022 6:08:33 PM	B91088
Cadmium	ND	0.00098	0.0020		mg/L	1	9/15/2022 6:08:33 PM	B91088
Chromium	ND	0.0020	0.0060		mg/L	1	9/15/2022 6:08:33 PM	B91088
Cobalt	ND	0.0024	0.0060		mg/L	1	9/15/2022 6:08:33 PM	B91088
Nickel	ND	0.0033	0.010		mg/L	1	9/15/2022 6:08:33 PM	B91088
Silver	ND	0.0013	0.0050		mg/L	1	9/15/2022 6:08:33 PM	B91088
Vanadium	ND	0.0017	0.050		mg/L	1	9/15/2022 6:08:33 PM	B91088
Zinc	0.0067	0.0032	0.010	J	mg/L	1	9/15/2022 6:08:33 PM	B91088
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/13/2022 2:24:33 PM	A91030
Arsenic	ND	0.00012	0.0010		mg/L	1	9/13/2022 2:24:33 PM	A91030
Lead	ND	0.000057	0.00050		mg/L	1	9/13/2022 2:24:33 PM	A91030
Selenium	ND	0.00034	0.0010		mg/L	1	9/13/2022 4:31:52 PM	A91030
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00012	0.000091	0.00020	J	mg/L	1	9/17/2022 11:40:57 AM	70232

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209441**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-3
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/8/2022 9:10:00 AM
Lab ID: 2209441-002A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	9/13/2022 4:04:00 PM	R90998
Surr: BFB	106	0	70-130		%Rec	1	9/13/2022 4:04:00 PM	R90998
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	9/13/2022 1:28:00 PM	R90977
Toluene	ND	0.20	1.0		µg/L	1	9/13/2022 1:28:00 PM	R90977
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/13/2022 1:28:00 PM	R90977
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/13/2022 1:28:00 PM	R90977
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/13/2022 1:28:00 PM	R90977
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 1:28:00 PM	R90977
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/13/2022 1:28:00 PM	R90977
Acetone	7.9	2.5	10	J	µg/L	1	9/13/2022 1:28:00 PM	R90977
Bromomethane	ND	0.85	3.0		µg/L	1	9/13/2022 1:28:00 PM	R90977
2-Butanone	ND	2.0	10		µg/L	1	9/13/2022 1:28:00 PM	R90977
Carbon disulfide	ND	0.59	10		µg/L	1	9/13/2022 1:28:00 PM	R90977
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/13/2022 1:28:00 PM	R90977
Chloroform	ND	0.13	1.0		µg/L	1	9/13/2022 1:28:00 PM	R90977
Chloromethane	ND	0.41	3.0		µg/L	1	9/13/2022 1:28:00 PM	R90977
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/13/2022 1:28:00 PM	R90977
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/13/2022 1:28:00 PM	R90977
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/13/2022 1:28:00 PM	R90977
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 1:28:00 PM	R90977
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/13/2022 1:28:00 PM	R90977
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/13/2022 1:28:00 PM	R90977
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/13/2022 1:28:00 PM	R90977
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 1:28:00 PM	R90977
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/13/2022 1:28:00 PM	R90977
Styrene	ND	0.14	1.0		µg/L	1	9/13/2022 1:28:00 PM	R90977
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/13/2022 1:28:00 PM	R90977
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/13/2022 1:28:00 PM	R90977
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/13/2022 1:28:00 PM	R90977
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/13/2022 1:28:00 PM	R90977
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/13/2022 1:28:00 PM	R90977
Surr: 1,2-Dichloroethane-d4	102	0	70-130		%Rec	1	9/13/2022 1:28:00 PM	R90977
Surr: 4-Bromofluorobenzene	89.0	0	70-130		%Rec	1	9/13/2022 1:28:00 PM	R90977
Surr: Dibromofluoromethane	102	0	70-130		%Rec	1	9/13/2022 1:28:00 PM	R90977
Surr: Toluene-d8	91.2	0	70-130		%Rec	1	9/13/2022 1:28:00 PM	R90977

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209441**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-3
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/8/2022 9:10:00 AM
Lab ID: 2209441-002B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0093		µg/L	1	9/13/2022 9:57:08 PM	70123

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209441**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-3
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/8/2022 9:10:00 AM
Lab ID: 2209441-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.058	0.016	0.064	JE	mg/L	1	9/13/2022 7:14:11 PM	70105
Motor Oil Range Organics (MRO)	ND	0.052	0.080	E	mg/L	1	9/13/2022 7:14:11 PM	70105
Surr: DNOP	105	0	42.2-138		%Rec	1	9/13/2022 7:14:11 PM	70105
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	9/14/2022 3:01:31 PM	70094
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/14/2022 3:01:31 PM	70094
Chrysene	ND	5.3	10		µg/L	1	9/14/2022 3:01:31 PM	70094
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	9/14/2022 3:01:31 PM	70094
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/14/2022 3:01:31 PM	70094
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/14/2022 3:01:31 PM	70094
Diethyl phthalate	ND	6.0	10		µg/L	1	9/14/2022 3:01:31 PM	70094
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/14/2022 3:01:31 PM	70094
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	9/14/2022 3:01:31 PM	70094
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/14/2022 3:01:31 PM	70094
2-Methylphenol	ND	5.0	10		µg/L	1	9/14/2022 3:01:31 PM	70094
3+4-Methylphenol	ND	5.1	10		µg/L	1	9/14/2022 3:01:31 PM	70094
Phenol	ND	18	20		µg/L	1	9/14/2022 3:01:31 PM	70094
Pyridine	ND	14	40		µg/L	1	9/14/2022 3:01:31 PM	70094
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/14/2022 3:01:31 PM	70094
Surr: 2-Fluorophenol	42.3	0	15-84.5		%Rec	1	9/14/2022 3:01:31 PM	70094
Surr: Phenol-d5	34.1	0	15-67		%Rec	1	9/14/2022 3:01:31 PM	70094
Surr: 2,4,6-Tribromophenol	24.6	0	15-108		%Rec	1	9/14/2022 3:01:31 PM	70094
Surr: Nitrobenzene-d5	62.1	0	16.8-112		%Rec	1	9/14/2022 3:01:31 PM	70094
Surr: 2-Fluorobiphenyl	54.8	0	15-101		%Rec	1	9/14/2022 3:01:31 PM	70094
Surr: 4-Terphenyl-d14	75.0	0	34.4-134		%Rec	1	9/14/2022 3:01:31 PM	70094
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	ND	0.11	1.0	E	µg/L	1	9/13/2022 1:30:00 PM	70094
Naphthalene	ND	0.20	0.30		µg/L	1	9/13/2022 1:30:00 PM	70094
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	9/13/2022 1:30:00 PM	70094
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	9/13/2022 1:30:00 PM	70094
Acenaphthene	ND	0.14	0.30		µg/L	1	9/13/2022 1:30:00 PM	70094
Fluorene	ND	0.095	0.30		µg/L	1	9/13/2022 1:30:00 PM	70094
Phenanthrene	ND	0.16	0.30		µg/L	1	9/13/2022 1:30:00 PM	70094
Anthracene	ND	0.14	0.30		µg/L	1	9/13/2022 1:30:00 PM	70094
Fluoranthene	ND	0.14	0.30		µg/L	1	9/13/2022 1:30:00 PM	70094
Pyrene	ND	0.32	1.0		µg/L	1	9/13/2022 1:30:00 PM	70094
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/13/2022 1:30:00 PM	70094
Chrysene	ND	0.25	0.30	E	µg/L	1	9/13/2022 1:30:00 PM	70094
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/13/2022 1:30:00 PM	70094

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209441**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-3
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/8/2022 9:10:00 AM
Lab ID: 2209441-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/13/2022 1:30:00 PM	70094
Surr: Nitrobenzene-d5	54.8	0	31.6-100		%Rec	1	9/13/2022 1:30:00 PM	70094
Surr: 2-Fluorobiphenyl	51.2	0	26.7-90.1		%Rec	1	9/13/2022 1:30:00 PM	70094
Surr: 4-Terphenyl-d14	63.6	0	72.3-147	S	%Rec	1	9/13/2022 1:30:00 PM	70094

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209441**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-3
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/8/2022 9:10:00 AM
Lab ID: 2209441-002D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.010	0.0016	0.0030		mg/L	1	9/13/2022 12:05:47 PM	70092
Beryllium	ND	0.00088	0.0020		mg/L	1	9/13/2022 12:05:47 PM	70092
Cadmium	ND	0.0018	0.0020		mg/L	1	9/13/2022 12:05:47 PM	70092
Chromium	ND	0.0020	0.0060		mg/L	1	9/13/2022 12:05:47 PM	70092
Cobalt	0.013	0.0035	0.0060		mg/L	1	9/13/2022 12:05:47 PM	70092
Nickel	ND	0.0053	0.010		mg/L	1	9/13/2022 12:05:47 PM	70092
Silver	0.0019	0.0018	0.0050	J	mg/L	1	9/13/2022 12:05:47 PM	70092
Vanadium	ND	0.0035	0.050		mg/L	1	9/13/2022 12:05:47 PM	70092
Zinc	0.0087	0.0039	0.010	J	mg/L	1	9/13/2022 12:05:47 PM	70092
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/14/2022 4:02:34 PM	70092
Arsenic	0.0038	0.00013	0.0010		mg/L	1	9/14/2022 4:02:34 PM	70092
Lead	0.000070	0.000061	0.00050	J	mg/L	1	9/14/2022 4:02:34 PM	70092
Selenium	0.00077	0.00037	0.0010	J	mg/L	1	9/14/2022 4:02:34 PM	70092
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00018	0.000091	0.00020	J	mg/L	1	9/17/2022 11:47:19 AM	70232

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209441**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-3
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/8/2022 9:10:00 AM
Lab ID: 2209441-002E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.011	0.0011	0.0020		mg/L	1	9/15/2022 6:12:51 PM	B91088
Beryllium	ND	0.00088	0.0020		mg/L	1	9/15/2022 6:12:51 PM	B91088
Cadmium	ND	0.00098	0.0020		mg/L	1	9/15/2022 6:12:51 PM	B91088
Chromium	ND	0.0020	0.0060		mg/L	1	9/15/2022 6:12:51 PM	B91088
Cobalt	ND	0.0024	0.0060		mg/L	1	9/15/2022 6:12:51 PM	B91088
Nickel	ND	0.0033	0.010		mg/L	1	9/15/2022 6:12:51 PM	B91088
Silver	0.0058	0.0013	0.0050		mg/L	1	9/15/2022 6:12:51 PM	B91088
Vanadium	0.0024	0.0017	0.050	J	mg/L	1	9/15/2022 6:12:51 PM	B91088
Zinc	0.021	0.0032	0.010		mg/L	1	9/15/2022 6:12:51 PM	B91088
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/13/2022 2:27:15 PM	A91030
Arsenic	0.00013	0.00012	0.0010	J	mg/L	1	9/13/2022 2:27:15 PM	A91030
Lead	ND	0.000057	0.00050		mg/L	1	9/13/2022 2:27:15 PM	A91030
Selenium	0.0010	0.00034	0.0010		mg/L	1	9/13/2022 4:34:34 PM	A91030
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00017	0.000091	0.00020	J	mg/L	1	9/17/2022 11:49:27 AM	70232

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209441**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-4
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/8/2022 9:40:00 AM
Lab ID: 2209441-003A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	9/13/2022 4:23:00 PM	R90998
Surr: BFB	106	0	70-130		%Rec	1	9/13/2022 4:23:00 PM	R90998
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	9/13/2022 2:37:00 PM	R90977
Toluene	ND	0.20	1.0		µg/L	1	9/13/2022 2:37:00 PM	R90977
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/13/2022 2:37:00 PM	R90977
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/13/2022 2:37:00 PM	R90977
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/13/2022 2:37:00 PM	R90977
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 2:37:00 PM	R90977
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/13/2022 2:37:00 PM	R90977
Acetone	9.9	2.5	10	J	µg/L	1	9/13/2022 2:37:00 PM	R90977
Bromomethane	ND	0.85	3.0		µg/L	1	9/13/2022 2:37:00 PM	R90977
2-Butanone	ND	2.0	10		µg/L	1	9/13/2022 2:37:00 PM	R90977
Carbon disulfide	ND	0.59	10		µg/L	1	9/13/2022 2:37:00 PM	R90977
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/13/2022 2:37:00 PM	R90977
Chloroform	ND	0.13	1.0		µg/L	1	9/13/2022 2:37:00 PM	R90977
Chloromethane	ND	0.41	3.0		µg/L	1	9/13/2022 2:37:00 PM	R90977
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/13/2022 2:37:00 PM	R90977
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/13/2022 2:37:00 PM	R90977
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/13/2022 2:37:00 PM	R90977
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 2:37:00 PM	R90977
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/13/2022 2:37:00 PM	R90977
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/13/2022 2:37:00 PM	R90977
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/13/2022 2:37:00 PM	R90977
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 2:37:00 PM	R90977
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/13/2022 2:37:00 PM	R90977
Styrene	ND	0.14	1.0		µg/L	1	9/13/2022 2:37:00 PM	R90977
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/13/2022 2:37:00 PM	R90977
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/13/2022 2:37:00 PM	R90977
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/13/2022 2:37:00 PM	R90977
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/13/2022 2:37:00 PM	R90977
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/13/2022 2:37:00 PM	R90977
Surr: 1,2-Dichloroethane-d4	103	0	70-130		%Rec	1	9/13/2022 2:37:00 PM	R90977
Surr: 4-Bromofluorobenzene	90.1	0	70-130		%Rec	1	9/13/2022 2:37:00 PM	R90977
Surr: Dibromofluoromethane	99.5	0	70-130		%Rec	1	9/13/2022 2:37:00 PM	R90977
Surr: Toluene-d8	88.5	0	70-130		%Rec	1	9/13/2022 2:37:00 PM	R90977

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Estimated value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference

Analytical Report
Lab Order: **2209441**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-4
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/8/2022 9:40:00 AM
Lab ID: 2209441-003B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	9/15/2022 1:39:10 PM	70173

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209441**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-4
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/8/2022 9:40:00 AM
Lab ID: 2209441-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.049	0.016	0.064	JE	mg/L	1	9/13/2022 7:37:55 PM	70105
Motor Oil Range Organics (MRO)	ND	0.052	0.080	E	mg/L	1	9/13/2022 7:37:55 PM	70105
Surr: DNOP	92.7	0	42.2-138		%Rec	1	9/13/2022 7:37:55 PM	70105
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	9/14/2022 3:43:20 PM	70094
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/14/2022 3:43:20 PM	70094
Chrysene	ND	5.3	10		µg/L	1	9/14/2022 3:43:20 PM	70094
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	9/14/2022 3:43:20 PM	70094
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/14/2022 3:43:20 PM	70094
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/14/2022 3:43:20 PM	70094
Diethyl phthalate	ND	6.0	10		µg/L	1	9/14/2022 3:43:20 PM	70094
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/14/2022 3:43:20 PM	70094
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	9/14/2022 3:43:20 PM	70094
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/14/2022 3:43:20 PM	70094
2-Methylphenol	ND	5.0	10		µg/L	1	9/14/2022 3:43:20 PM	70094
3+4-Methylphenol	ND	5.1	10		µg/L	1	9/14/2022 3:43:20 PM	70094
Phenol	ND	18	20		µg/L	1	9/14/2022 3:43:20 PM	70094
Pyridine	ND	14	40		µg/L	1	9/14/2022 3:43:20 PM	70094
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/14/2022 3:43:20 PM	70094
Surr: 2-Fluorophenol	45.1	0	15-84.5		%Rec	1	9/14/2022 3:43:20 PM	70094
Surr: Phenol-d5	33.9	0	15-67		%Rec	1	9/14/2022 3:43:20 PM	70094
Surr: 2,4,6-Tribromophenol	51.3	0	15-108		%Rec	1	9/14/2022 3:43:20 PM	70094
Surr: Nitrobenzene-d5	58.8	0	16.8-112		%Rec	1	9/14/2022 3:43:20 PM	70094
Surr: 2-Fluorobiphenyl	57.0	0	15-101		%Rec	1	9/14/2022 3:43:20 PM	70094
Surr: 4-Terphenyl-d14	74.8	0	34.4-134		%Rec	1	9/14/2022 3:43:20 PM	70094
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	ND	0.11	1.0	E	µg/L	1	9/13/2022 2:14:00 PM	70094
Naphthalene	ND	0.20	0.30		µg/L	1	9/13/2022 2:14:00 PM	70094
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	9/13/2022 2:14:00 PM	70094
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	9/13/2022 2:14:00 PM	70094
Acenaphthene	ND	0.14	0.30		µg/L	1	9/13/2022 2:14:00 PM	70094
Fluorene	ND	0.095	0.30		µg/L	1	9/13/2022 2:14:00 PM	70094
Phenanthrene	ND	0.16	0.30		µg/L	1	9/13/2022 2:14:00 PM	70094
Anthracene	ND	0.14	0.30		µg/L	1	9/13/2022 2:14:00 PM	70094
Fluoranthene	ND	0.14	0.30		µg/L	1	9/13/2022 2:14:00 PM	70094
Pyrene	ND	0.32	1.0		µg/L	1	9/13/2022 2:14:00 PM	70094
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/13/2022 2:14:00 PM	70094
Chrysene	ND	0.25	0.30	E	µg/L	1	9/13/2022 2:14:00 PM	70094
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/13/2022 2:14:00 PM	70094

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209441**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-4
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/8/2022 9:40:00 AM
Lab ID: 2209441-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/13/2022 2:14:00 PM	70094
Surr: Nitrobenzene-d5	54.2	0	31.6-100		%Rec	1	9/13/2022 2:14:00 PM	70094
Surr: 2-Fluorobiphenyl	51.4	0	26.7-90.1		%Rec	1	9/13/2022 2:14:00 PM	70094
Surr: 4-Terphenyl-d14	65.7	0	72.3-147	S	%Rec	1	9/13/2022 2:14:00 PM	70094

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209441**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-4
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/8/2022 9:40:00 AM
Lab ID: 2209441-003D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.013	0.0016	0.0030		mg/L	1	9/13/2022 12:09:08 PM	70092
Beryllium	ND	0.00088	0.0020		mg/L	1	9/13/2022 12:09:08 PM	70092
Cadmium	ND	0.0018	0.0020		mg/L	1	9/13/2022 12:09:08 PM	70092
Chromium	ND	0.0020	0.0060		mg/L	1	9/13/2022 12:09:08 PM	70092
Cobalt	0.010	0.0035	0.0060		mg/L	1	9/13/2022 12:09:08 PM	70092
Nickel	ND	0.0053	0.010		mg/L	1	9/13/2022 12:09:08 PM	70092
Silver	ND	0.0018	0.0050		mg/L	1	9/13/2022 12:09:08 PM	70092
Vanadium	ND	0.0035	0.050		mg/L	1	9/13/2022 12:09:08 PM	70092
Zinc	ND	0.0039	0.010		mg/L	1	9/13/2022 12:09:08 PM	70092
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/14/2022 4:05:00 PM	70092
Arsenic	0.0028	0.00013	0.0010		mg/L	1	9/14/2022 4:05:00 PM	70092
Lead	ND	0.000061	0.00050		mg/L	1	9/14/2022 4:05:00 PM	70092
Selenium	ND	0.00037	0.0010		mg/L	1	9/14/2022 4:05:00 PM	70092
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00018	0.000091	0.00020	J	mg/L	1	9/17/2022 11:51:35 AM	70232

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209441**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-4
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/8/2022 9:40:00 AM
Lab ID: 2209441-003E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.012	0.0011	0.0020		mg/L	1	9/15/2022 6:23:46 PM	B91088
Beryllium	ND	0.00088	0.0020		mg/L	1	9/15/2022 6:23:46 PM	B91088
Cadmium	ND	0.00098	0.0020		mg/L	1	9/15/2022 6:23:46 PM	B91088
Chromium	ND	0.0020	0.0060		mg/L	1	9/15/2022 6:23:46 PM	B91088
Cobalt	ND	0.0024	0.0060		mg/L	1	9/15/2022 6:23:46 PM	B91088
Nickel	ND	0.0033	0.010		mg/L	1	9/15/2022 6:23:46 PM	B91088
Silver	0.0037	0.0013	0.0050	J	mg/L	1	9/15/2022 6:23:46 PM	B91088
Vanadium	0.0024	0.0017	0.050	J	mg/L	1	9/15/2022 6:23:46 PM	B91088
Zinc	0.042	0.0032	0.010		mg/L	1	9/15/2022 6:23:46 PM	B91088
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/13/2022 2:29:56 PM	A91030
Arsenic	0.0013	0.00012	0.0010		mg/L	1	9/13/2022 2:29:56 PM	A91030
Lead	ND	0.000057	0.00050		mg/L	1	9/13/2022 2:29:56 PM	A91030
Selenium	ND	0.00034	0.0010		mg/L	1	9/13/2022 4:37:15 PM	A91030
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00018	0.000091	0.00020	J	mg/L	1	9/17/2022 11:53:43 AM	70232

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209441**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EAST LDU
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/8/2022 10:05:00 AM
Lab ID: 2209441-004A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.35	0.0090	0.050		mg/L	1	9/13/2022 4:43:00 PM	R90998
Surr: BFB	166	0	70-130	S	%Rec	1	9/13/2022 4:43:00 PM	R90998
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	17	0.23	1.0		µg/L	1	9/13/2022 3:01:00 PM	R90977
Toluene	4.4	0.20	1.0		µg/L	1	9/13/2022 3:01:00 PM	R90977
Ethylbenzene	5.4	0.21	1.0		µg/L	1	9/13/2022 3:01:00 PM	R90977
Methyl tert-butyl ether (MTBE)	0.94	0.39	1.0	J	µg/L	1	9/13/2022 3:01:00 PM	R90977
1,2,4-Trimethylbenzene	5.9	0.12	1.0		µg/L	1	9/13/2022 3:01:00 PM	R90977
1,3,5-Trimethylbenzene	9.0	0.18	1.0		µg/L	1	9/13/2022 3:01:00 PM	R90977
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/13/2022 3:01:00 PM	R90977
Acetone	56	2.5	10		µg/L	1	9/13/2022 3:01:00 PM	R90977
Bromomethane	ND	0.85	3.0		µg/L	1	9/13/2022 3:01:00 PM	R90977
2-Butanone	8.2	2.0	10	J	µg/L	1	9/13/2022 3:01:00 PM	R90977
Carbon disulfide	ND	0.59	10		µg/L	1	9/13/2022 3:01:00 PM	R90977
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/13/2022 3:01:00 PM	R90977
Chloroform	ND	0.13	1.0		µg/L	1	9/13/2022 3:01:00 PM	R90977
Chloromethane	ND	0.41	3.0		µg/L	1	9/13/2022 3:01:00 PM	R90977
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/13/2022 3:01:00 PM	R90977
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/13/2022 3:01:00 PM	R90977
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/13/2022 3:01:00 PM	R90977
Isopropylbenzene	1.0	0.18	1.0		µg/L	1	9/13/2022 3:01:00 PM	R90977
4-Isopropyltoluene	1.3	0.20	1.0		µg/L	1	9/13/2022 3:01:00 PM	R90977
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/13/2022 3:01:00 PM	R90977
n-Butylbenzene	0.89	0.25	3.0	J	µg/L	1	9/13/2022 3:01:00 PM	R90977
n-Propylbenzene	1.2	0.18	1.0		µg/L	1	9/13/2022 3:01:00 PM	R90977
sec-Butylbenzene	0.89	0.14	1.0	J	µg/L	1	9/13/2022 3:01:00 PM	R90977
Styrene	ND	0.14	1.0		µg/L	1	9/13/2022 3:01:00 PM	R90977
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/13/2022 3:01:00 PM	R90977
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/13/2022 3:01:00 PM	R90977
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/13/2022 3:01:00 PM	R90977
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/13/2022 3:01:00 PM	R90977
Xylenes, Total	13	0.37	1.5		µg/L	1	9/13/2022 3:01:00 PM	R90977
Surr: 1,2-Dichloroethane-d4	99.6	0	70-130		%Rec	1	9/13/2022 3:01:00 PM	R90977
Surr: 4-Bromofluorobenzene	91.8	0	70-130		%Rec	1	9/13/2022 3:01:00 PM	R90977
Surr: Dibromofluoromethane	94.0	0	70-130		%Rec	1	9/13/2022 3:01:00 PM	R90977
Surr: Toluene-d8	96.6	0	70-130		%Rec	1	9/13/2022 3:01:00 PM	R90977

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209441**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EAST LDU
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/8/2022 10:05:00 AM
Lab ID: 2209441-004B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	9/15/2022 2:09:28 PM	70173

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209441**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EAST LDU
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/8/2022 10:05:00 AM
Lab ID: 2209441-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	3.3	0.016	0.064	E	mg/L	1	9/13/2022 8:01:43 PM	70105
Motor Oil Range Organics (MRO)	0.21	0.052	0.080	E	mg/L	1	9/13/2022 8:01:43 PM	70105
Surr: DNOP	84.5	0	42.2-138		%Rec	1	9/13/2022 8:01:43 PM	70105
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	9/14/2022 4:24:23 PM	70094
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/14/2022 4:24:23 PM	70094
Chrysene	ND	5.3	10		µg/L	1	9/14/2022 4:24:23 PM	70094
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	9/14/2022 4:24:23 PM	70094
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/14/2022 4:24:23 PM	70094
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/14/2022 4:24:23 PM	70094
Diethyl phthalate	ND	6.0	10		µg/L	1	9/14/2022 4:24:23 PM	70094
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/14/2022 4:24:23 PM	70094
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	9/14/2022 4:24:23 PM	70094
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/14/2022 4:24:23 PM	70094
2-Methylphenol	ND	5.0	10		µg/L	1	9/14/2022 4:24:23 PM	70094
3+4-Methylphenol	ND	5.1	10		µg/L	1	9/14/2022 4:24:23 PM	70094
Phenol	ND	18	20		µg/L	1	9/14/2022 4:24:23 PM	70094
Pyridine	ND	14	40		µg/L	1	9/14/2022 4:24:23 PM	70094
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/14/2022 4:24:23 PM	70094
Surr: 2-Fluorophenol	0.745	0	15-84.5	S	%Rec	1	9/14/2022 4:24:23 PM	70094
Surr: Phenol-d5	2.53	0	15-67	S	%Rec	1	9/14/2022 4:24:23 PM	70094
Surr: 2,4,6-Tribromophenol	4.59	0	15-108	S	%Rec	1	9/14/2022 4:24:23 PM	70094
Surr: Nitrobenzene-d5	59.0	0	16.8-112		%Rec	1	9/14/2022 4:24:23 PM	70094
Surr: 2-Fluorobiphenyl	56.9	0	15-101		%Rec	1	9/14/2022 4:24:23 PM	70094
Surr: 4-Terphenyl-d14	75.7	0	34.4-134		%Rec	1	9/14/2022 4:24:23 PM	70094
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	0.34	0.11	1.0	JE	µg/L	1	9/13/2022 2:58:00 PM	70094
Naphthalene	0.24	0.20	0.30	J	µg/L	1	9/13/2022 2:58:00 PM	70094
1-Methylnaphthalene	1.6	0.15	0.30		µg/L	1	9/13/2022 2:58:00 PM	70094
2-Methylnaphthalene	0.34	0.14	0.30		µg/L	1	9/13/2022 2:58:00 PM	70094
Acenaphthene	1.2	0.14	0.30		µg/L	1	9/13/2022 2:58:00 PM	70094
Fluorene	1.5	0.095	0.30		µg/L	1	9/13/2022 2:58:00 PM	70094
Phenanthrene	2.6	0.16	0.30		µg/L	1	9/13/2022 2:58:00 PM	70094
Anthracene	0.46	0.14	0.30		µg/L	1	9/13/2022 2:58:00 PM	70094
Fluoranthene	0.70	0.14	0.30		µg/L	1	9/13/2022 2:58:00 PM	70094
Pyrene	0.36	0.32	1.0	J	µg/L	1	9/13/2022 2:58:00 PM	70094
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/13/2022 2:58:00 PM	70094
Chrysene	ND	0.25	0.30	E	µg/L	1	9/13/2022 2:58:00 PM	70094
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/13/2022 2:58:00 PM	70094

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209441**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EAST LDU
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/8/2022 10:05:00 AM
Lab ID: 2209441-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/13/2022 2:58:00 PM	70094
Surr: Nitrobenzene-d5	53.2	0	31.6-100		%Rec	1	9/13/2022 2:58:00 PM	70094
Surr: 2-Fluorobiphenyl	43.6	0	26.7-90.1		%Rec	1	9/13/2022 2:58:00 PM	70094
Surr: 4-Terphenyl-d14	53.5	0	72.3-147	S	%Rec	1	9/13/2022 2:58:00 PM	70094

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209441**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EAST LDU
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/8/2022 10:05:00 AM
Lab ID: 2209441-004D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.24	0.0016	0.0030		mg/L	1	9/13/2022 12:18:46 PM	70092
Beryllium	0.0014	0.00088	0.0020	J	mg/L	1	9/13/2022 12:18:46 PM	70092
Cadmium	0.015	0.0018	0.0020	*	mg/L	1	9/13/2022 12:18:46 PM	70092
Chromium	2.4	0.0098	0.030	*	mg/L	5	9/13/2022 12:20:12 PM	70092
Cobalt	0.027	0.0035	0.0060		mg/L	1	9/13/2022 12:18:46 PM	70092
Nickel	2.4	0.027	0.050	*	mg/L	5	9/13/2022 12:20:12 PM	70092
Silver	ND	0.0018	0.0050		mg/L	1	9/13/2022 12:18:46 PM	70092
Vanadium	0.076	0.0035	0.050		mg/L	1	9/13/2022 12:18:46 PM	70092
Zinc	0.22	0.0039	0.010		mg/L	1	9/13/2022 12:18:46 PM	70092
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/14/2022 4:07:26 PM	70092
Arsenic	ND	0.00013	0.0010		mg/L	1	9/14/2022 4:07:26 PM	70092
Lead	ND	0.000061	0.00050		mg/L	1	9/14/2022 4:07:26 PM	70092
Selenium	ND	0.00037	0.0010		mg/L	1	9/14/2022 4:07:26 PM	70092
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00023	0.000091	0.00020		mg/L	1	9/17/2022 11:55:51 AM	70232

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209441**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EAST LDU
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/8/2022 10:05:00 AM
Lab ID: 2209441-004E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.049	0.0011	0.0020		mg/L	1	9/15/2022 6:28:05 PM	B91088
Beryllium	0.0020	0.00088	0.0020	J	mg/L	1	9/15/2022 6:28:05 PM	B91088
Cadmium	ND	0.00098	0.0020		mg/L	1	9/15/2022 6:28:05 PM	B91088
Chromium	1.5	0.0098	0.030	*	mg/L	5	9/15/2022 6:30:02 PM	B91088
Cobalt	0.028	0.0024	0.0060		mg/L	1	9/15/2022 6:28:05 PM	B91088
Nickel	2.5	0.016	0.050	*	mg/L	5	9/15/2022 6:30:02 PM	B91088
Silver	ND	0.0013	0.0050		mg/L	1	9/15/2022 6:28:05 PM	B91088
Vanadium	0.011	0.0017	0.050	J	mg/L	1	9/15/2022 6:28:05 PM	B91088
Zinc	0.093	0.0032	0.010		mg/L	1	9/15/2022 6:28:05 PM	B91088
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/13/2022 2:32:37 PM	A91030
Arsenic	0.00079	0.00012	0.0010	J	mg/L	1	9/13/2022 2:32:37 PM	A91030
Lead	ND	0.000057	0.00050		mg/L	1	9/13/2022 2:32:37 PM	A91030
Selenium	0.00045	0.00034	0.0010	J	mg/L	1	9/13/2022 4:45:21 PM	A91030
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00019	0.000091	0.00020	J	mg/L	1	9/17/2022 11:57:59 AM	70232

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209441**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: WEST LDU
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/8/2022 10:30:00 AM
Lab ID: 2209441-005A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.055	0.0090	0.050		mg/L	1	9/13/2022 5:03:00 PM	R90998
Surr: BFB	122	0	70-130		%Rec	1	9/13/2022 5:03:00 PM	R90998
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	0.93	0.23	1.0	J	µg/L	1	9/13/2022 3:24:00 PM	R90977
Toluene	ND	0.20	1.0		µg/L	1	9/13/2022 3:24:00 PM	R90977
Ethylbenzene	0.69	0.21	1.0	J	µg/L	1	9/13/2022 3:24:00 PM	R90977
Methyl tert-butyl ether (MTBE)	2.5	0.39	1.0		µg/L	1	9/13/2022 3:24:00 PM	R90977
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/13/2022 3:24:00 PM	R90977
1,3,5-Trimethylbenzene	0.61	0.18	1.0	J	µg/L	1	9/13/2022 3:24:00 PM	R90977
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/13/2022 3:24:00 PM	R90977
Acetone	10	2.5	10		µg/L	1	9/13/2022 3:24:00 PM	R90977
Bromomethane	ND	0.85	3.0		µg/L	1	9/13/2022 3:24:00 PM	R90977
2-Butanone	ND	2.0	10		µg/L	1	9/13/2022 3:24:00 PM	R90977
Carbon disulfide	ND	0.59	10		µg/L	1	9/13/2022 3:24:00 PM	R90977
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/13/2022 3:24:00 PM	R90977
Chloroform	ND	0.13	1.0		µg/L	1	9/13/2022 3:24:00 PM	R90977
Chloromethane	ND	0.41	3.0		µg/L	1	9/13/2022 3:24:00 PM	R90977
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/13/2022 3:24:00 PM	R90977
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/13/2022 3:24:00 PM	R90977
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/13/2022 3:24:00 PM	R90977
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 3:24:00 PM	R90977
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/13/2022 3:24:00 PM	R90977
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/13/2022 3:24:00 PM	R90977
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/13/2022 3:24:00 PM	R90977
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 3:24:00 PM	R90977
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/13/2022 3:24:00 PM	R90977
Styrene	ND	0.14	1.0		µg/L	1	9/13/2022 3:24:00 PM	R90977
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/13/2022 3:24:00 PM	R90977
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/13/2022 3:24:00 PM	R90977
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/13/2022 3:24:00 PM	R90977
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/13/2022 3:24:00 PM	R90977
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/13/2022 3:24:00 PM	R90977
Surr: 1,2-Dichloroethane-d4	99.8	0	70-130		%Rec	1	9/13/2022 3:24:00 PM	R90977
Surr: 4-Bromofluorobenzene	93.7	0	70-130		%Rec	1	9/13/2022 3:24:00 PM	R90977
Surr: Dibromofluoromethane	96.2	0	70-130		%Rec	1	9/13/2022 3:24:00 PM	R90977
Surr: Toluene-d8	92.2	0	70-130		%Rec	1	9/13/2022 3:24:00 PM	R90977

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209441**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: WEST LDU
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/8/2022 10:30:00 AM
Lab ID: 2209441-005B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	9/15/2022 2:39:55 PM	70173

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209441**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: WEST LDU
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/8/2022 10:30:00 AM
Lab ID: 2209441-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	3.0	0.016	0.064	E	mg/L	1	9/13/2022 8:49:17 PM	70105
Motor Oil Range Organics (MRO)	0.073	0.052	0.080	JE	mg/L	1	9/13/2022 8:49:17 PM	70105
Surr: DNOP	107	0	42.2-138		%Rec	1	9/13/2022 8:49:17 PM	70105
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	9/14/2022 5:05:49 PM	70094
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/14/2022 5:05:49 PM	70094
Chrysene	ND	5.3	10		µg/L	1	9/14/2022 5:05:49 PM	70094
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	9/14/2022 5:05:49 PM	70094
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/14/2022 5:05:49 PM	70094
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/14/2022 5:05:49 PM	70094
Diethyl phthalate	ND	6.0	10		µg/L	1	9/14/2022 5:05:49 PM	70094
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/14/2022 5:05:49 PM	70094
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	9/14/2022 5:05:49 PM	70094
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/14/2022 5:05:49 PM	70094
2-Methylphenol	ND	5.0	10		µg/L	1	9/14/2022 5:05:49 PM	70094
3+4-Methylphenol	ND	5.1	10		µg/L	1	9/14/2022 5:05:49 PM	70094
Phenol	ND	18	20		µg/L	1	9/14/2022 5:05:49 PM	70094
Pyridine	ND	14	40		µg/L	1	9/14/2022 5:05:49 PM	70094
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/14/2022 5:05:49 PM	70094
Surr: 2-Fluorophenol	1.54	0	15-84.5	S	%Rec	1	9/14/2022 5:05:49 PM	70094
Surr: Phenol-d5	0	0	15-67	S	%Rec	1	9/14/2022 5:05:49 PM	70094
Surr: 2,4,6-Tribromophenol	5.29	0	15-108	S	%Rec	1	9/14/2022 5:05:49 PM	70094
Surr: Nitrobenzene-d5	68.2	0	16.8-112		%Rec	1	9/14/2022 5:05:49 PM	70094
Surr: 2-Fluorobiphenyl	67.0	0	15-101		%Rec	1	9/14/2022 5:05:49 PM	70094
Surr: 4-Terphenyl-d14	81.1	0	34.4-134		%Rec	1	9/14/2022 5:05:49 PM	70094
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	7.1	0.11	1.0	E	µg/L	1	9/13/2022 3:42:00 PM	70094
Naphthalene	ND	0.20	0.30		µg/L	1	9/13/2022 3:42:00 PM	70094
1-Methylnaphthalene	0.34	0.15	0.30		µg/L	1	9/13/2022 3:42:00 PM	70094
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	9/13/2022 3:42:00 PM	70094
Acenaphthene	ND	0.14	0.30		µg/L	1	9/13/2022 3:42:00 PM	70094
Fluorene	0.20	0.095	0.30	J	µg/L	1	9/13/2022 3:42:00 PM	70094
Phenanthrene	ND	0.16	0.30		µg/L	1	9/13/2022 3:42:00 PM	70094
Anthracene	ND	0.14	0.30		µg/L	1	9/13/2022 3:42:00 PM	70094
Fluoranthene	ND	0.14	0.30		µg/L	1	9/13/2022 3:42:00 PM	70094
Pyrene	ND	0.32	1.0		µg/L	1	9/13/2022 3:42:00 PM	70094
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/13/2022 3:42:00 PM	70094
Chrysene	ND	0.25	0.30	E	µg/L	1	9/13/2022 3:42:00 PM	70094
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/13/2022 3:42:00 PM	70094

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209441**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: WEST LDU
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/8/2022 10:30:00 AM
Lab ID: 2209441-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/13/2022 3:42:00 PM	70094
Surr: Nitrobenzene-d5	60.8	0	31.6-100		%Rec	1	9/13/2022 3:42:00 PM	70094
Surr: 2-Fluorobiphenyl	51.9	0	26.7-90.1		%Rec	1	9/13/2022 3:42:00 PM	70094
Surr: 4-Terphenyl-d14	55.8	0	72.3-147	S	%Rec	1	9/13/2022 3:42:00 PM	70094

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209441**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: WEST LDU
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/8/2022 10:30:00 AM
Lab ID: 2209441-005D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.11	0.0016	0.0030		mg/L	1	9/13/2022 12:21:29 PM	70092
Beryllium	ND	0.00088	0.0020		mg/L	1	9/13/2022 12:21:29 PM	70092
Cadmium	0.0054	0.0018	0.0020	*	mg/L	1	9/13/2022 12:21:29 PM	70092
Chromium	0.81	0.0020	0.0060	*	mg/L	1	9/13/2022 12:21:29 PM	70092
Cobalt	0.011	0.0035	0.0060		mg/L	1	9/13/2022 12:21:29 PM	70092
Nickel	0.99	0.0053	0.010	*	mg/L	1	9/13/2022 12:21:29 PM	70092
Silver	ND	0.0018	0.0050		mg/L	1	9/13/2022 12:21:29 PM	70092
Vanadium	0.032	0.0035	0.050	J	mg/L	1	9/13/2022 12:21:29 PM	70092
Zinc	0.12	0.0039	0.010		mg/L	1	9/13/2022 12:21:29 PM	70092
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/14/2022 4:09:53 PM	70092
Arsenic	0.00074	0.00013	0.0010	J	mg/L	1	9/14/2022 4:09:53 PM	70092
Lead	0.00054	0.000061	0.00050		mg/L	1	9/14/2022 4:09:53 PM	70092
Selenium	ND	0.00037	0.0010		mg/L	1	9/14/2022 4:09:53 PM	70092
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00019	0.000091	0.00020	J	mg/L	1	9/17/2022 12:00:07 PM	70232

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209441**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: WEST LDU
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/8/2022 10:30:00 AM
Lab ID: 2209441-005E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.029	0.0011	0.0020		mg/L	1	9/15/2022 6:32:05 PM	B91088
Beryllium	0.0013	0.00088	0.0020	J	mg/L	1	9/15/2022 6:32:05 PM	B91088
Cadmium	ND	0.00098	0.0020		mg/L	1	9/15/2022 6:32:05 PM	B91088
Chromium	0.27	0.0020	0.0060	*	mg/L	1	9/15/2022 6:32:05 PM	B91088
Cobalt	0.0031	0.0024	0.0060	J	mg/L	1	9/15/2022 6:32:05 PM	B91088
Nickel	1.1	0.016	0.050	*	mg/L	5	9/15/2022 6:34:03 PM	B91088
Silver	ND	0.0013	0.0050		mg/L	1	9/15/2022 6:32:05 PM	B91088
Vanadium	0.0052	0.0017	0.050	J	mg/L	1	9/15/2022 6:32:05 PM	B91088
Zinc	0.12	0.0032	0.010		mg/L	1	9/15/2022 6:32:05 PM	B91088
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/13/2022 2:35:18 PM	A91030
Arsenic	0.00059	0.00012	0.0010	J	mg/L	1	9/13/2022 2:35:18 PM	A91030
Lead	0.00011	0.000057	0.00050	J	mg/L	1	9/13/2022 2:35:18 PM	A91030
Selenium	0.00070	0.00034	0.0010	J	mg/L	1	9/13/2022 4:48:02 PM	A91030
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00019	0.000091	0.00020	J	mg/L	1	9/17/2022 12:02:16 PM	70232

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209441**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 9-8-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/8/2022
Lab ID: 2209441-006A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	9/13/2022 5:22:00 PM	R90998
Surr: BFB	103	0	70-130		%Rec	1	9/13/2022 5:22:00 PM	R90998
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	9/13/2022 3:47:00 PM	R90977
Toluene	ND	0.20	1.0		µg/L	1	9/13/2022 3:47:00 PM	R90977
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/13/2022 3:47:00 PM	R90977
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/13/2022 3:47:00 PM	R90977
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/13/2022 3:47:00 PM	R90977
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 3:47:00 PM	R90977
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/13/2022 3:47:00 PM	R90977
Acetone	7.1	2.5	10	J	µg/L	1	9/13/2022 3:47:00 PM	R90977
Bromomethane	ND	0.85	3.0		µg/L	1	9/13/2022 3:47:00 PM	R90977
2-Butanone	ND	2.0	10		µg/L	1	9/13/2022 3:47:00 PM	R90977
Carbon disulfide	ND	0.59	10		µg/L	1	9/13/2022 3:47:00 PM	R90977
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/13/2022 3:47:00 PM	R90977
Chloroform	ND	0.13	1.0		µg/L	1	9/13/2022 3:47:00 PM	R90977
Chloromethane	ND	0.41	3.0		µg/L	1	9/13/2022 3:47:00 PM	R90977
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/13/2022 3:47:00 PM	R90977
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/13/2022 3:47:00 PM	R90977
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/13/2022 3:47:00 PM	R90977
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 3:47:00 PM	R90977
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/13/2022 3:47:00 PM	R90977
Methylene Chloride	2.6	0.50	3.0	J	µg/L	1	9/13/2022 3:47:00 PM	R90977
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/13/2022 3:47:00 PM	R90977
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 3:47:00 PM	R90977
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/13/2022 3:47:00 PM	R90977
Styrene	ND	0.14	1.0		µg/L	1	9/13/2022 3:47:00 PM	R90977
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/13/2022 3:47:00 PM	R90977
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/13/2022 3:47:00 PM	R90977
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/13/2022 3:47:00 PM	R90977
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/13/2022 3:47:00 PM	R90977
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/13/2022 3:47:00 PM	R90977
Surr: 1,2-Dichloroethane-d4	99.9	0	70-130		%Rec	1	9/13/2022 3:47:00 PM	R90977
Surr: 4-Bromofluorobenzene	89.0	0	70-130		%Rec	1	9/13/2022 3:47:00 PM	R90977
Surr: Dibromofluoromethane	99.9	0	70-130		%Rec	1	9/13/2022 3:47:00 PM	R90977
Surr: Toluene-d8	91.6	0	70-130		%Rec	1	9/13/2022 3:47:00 PM	R90977

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Estimated value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference

Analytical Report
Lab Order: **2209441**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 9-8-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/8/2022
Lab ID: 2209441-006B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	9/15/2022 3:40:47 PM	70173

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209441**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 9-8-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/8/2022
Lab ID: 2209441-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.047	0.016	0.064	JE	mg/L	1	9/13/2022 9:36:41 PM	70105
Motor Oil Range Organics (MRO)	ND	0.052	0.080	E	mg/L	1	9/13/2022 9:36:41 PM	70105
Surr: DNOP	108	0	42.2-138		%Rec	1	9/13/2022 9:36:41 PM	70105
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	9/14/2022 5:47:16 PM	70094
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/14/2022 5:47:16 PM	70094
Chrysene	ND	5.3	10		µg/L	1	9/14/2022 5:47:16 PM	70094
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	9/14/2022 5:47:16 PM	70094
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/14/2022 5:47:16 PM	70094
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/14/2022 5:47:16 PM	70094
Diethyl phthalate	ND	6.0	10		µg/L	1	9/14/2022 5:47:16 PM	70094
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/14/2022 5:47:16 PM	70094
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	9/14/2022 5:47:16 PM	70094
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/14/2022 5:47:16 PM	70094
2-Methylphenol	ND	5.0	10		µg/L	1	9/14/2022 5:47:16 PM	70094
3+4-Methylphenol	ND	5.1	10		µg/L	1	9/14/2022 5:47:16 PM	70094
Phenol	ND	18	20		µg/L	1	9/14/2022 5:47:16 PM	70094
Pyridine	ND	14	40		µg/L	1	9/14/2022 5:47:16 PM	70094
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/14/2022 5:47:16 PM	70094
Surr: 2-Fluorophenol	29.1	0	15-84.5		%Rec	1	9/14/2022 5:47:16 PM	70094
Surr: Phenol-d5	21.7	0	15-67		%Rec	1	9/14/2022 5:47:16 PM	70094
Surr: 2,4,6-Tribromophenol	29.6	0	15-108		%Rec	1	9/14/2022 5:47:16 PM	70094
Surr: Nitrobenzene-d5	37.9	0	16.8-112		%Rec	1	9/14/2022 5:47:16 PM	70094
Surr: 2-Fluorobiphenyl	37.1	0	15-101		%Rec	1	9/14/2022 5:47:16 PM	70094
Surr: 4-Terphenyl-d14	45.9	0	34.4-134		%Rec	1	9/14/2022 5:47:16 PM	70094
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	ND	0.11	1.0	E	µg/L	1	9/13/2022 4:26:00 PM	70094
Naphthalene	ND	0.20	0.30		µg/L	1	9/13/2022 4:26:00 PM	70094
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	9/13/2022 4:26:00 PM	70094
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	9/13/2022 4:26:00 PM	70094
Acenaphthene	ND	0.14	0.30		µg/L	1	9/13/2022 4:26:00 PM	70094
Fluorene	ND	0.095	0.30		µg/L	1	9/13/2022 4:26:00 PM	70094
Phenanthrene	ND	0.16	0.30		µg/L	1	9/13/2022 4:26:00 PM	70094
Anthracene	ND	0.14	0.30		µg/L	1	9/13/2022 4:26:00 PM	70094
Fluoranthene	ND	0.14	0.30		µg/L	1	9/13/2022 4:26:00 PM	70094
Pyrene	ND	0.32	1.0		µg/L	1	9/13/2022 4:26:00 PM	70094
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/13/2022 4:26:00 PM	70094
Chrysene	ND	0.25	0.30	E	µg/L	1	9/13/2022 4:26:00 PM	70094
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/13/2022 4:26:00 PM	70094

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209441**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 9-8-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/8/2022
Lab ID: 2209441-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/13/2022 4:26:00 PM	70094
Surr: Nitrobenzene-d5	37.0	0	31.6-100		%Rec	1	9/13/2022 4:26:00 PM	70094
Surr: 2-Fluorobiphenyl	33.7	0	26.7-90.1		%Rec	1	9/13/2022 4:26:00 PM	70094
Surr: 4-Terphenyl-d14	45.9	0	72.3-147	S	%Rec	1	9/13/2022 4:26:00 PM	70094

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209441**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 9-8-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/8/2022
Lab ID: 2209441-006D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.011	0.0016	0.0030		mg/L	1	9/13/2022 12:24:17 PM	70092
Beryllium	ND	0.00088	0.0020		mg/L	1	9/13/2022 12:24:17 PM	70092
Cadmium	ND	0.0018	0.0020		mg/L	1	9/13/2022 12:24:17 PM	70092
Chromium	ND	0.0020	0.0060		mg/L	1	9/13/2022 12:24:17 PM	70092
Cobalt	0.013	0.0035	0.0060		mg/L	1	9/13/2022 12:24:17 PM	70092
Nickel	ND	0.0053	0.010		mg/L	1	9/13/2022 12:24:17 PM	70092
Silver	ND	0.0018	0.0050		mg/L	1	9/13/2022 12:24:17 PM	70092
Vanadium	ND	0.0035	0.050		mg/L	1	9/13/2022 12:24:17 PM	70092
Zinc	ND	0.0039	0.010		mg/L	1	9/13/2022 12:24:17 PM	70092
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/14/2022 4:12:19 PM	70092
Arsenic	0.0041	0.00013	0.0010		mg/L	1	9/14/2022 4:12:19 PM	70092
Lead	0.00013	0.000061	0.00050	J	mg/L	1	9/14/2022 4:12:19 PM	70092
Selenium	0.0012	0.00037	0.0010		mg/L	1	9/14/2022 4:12:19 PM	70092
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00015	0.000091	0.00020	J	mg/L	1	9/17/2022 12:04:25 PM	70232

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209441**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 9-8-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/8/2022
Lab ID: 2209441-006E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.010	0.0011	0.0020		mg/L	1	9/15/2022 6:36:06 PM	B91088
Beryllium	ND	0.00088	0.0020		mg/L	1	9/15/2022 6:36:06 PM	B91088
Cadmium	ND	0.00098	0.0020		mg/L	1	9/15/2022 6:36:06 PM	B91088
Chromium	ND	0.0020	0.0060		mg/L	1	9/15/2022 6:36:06 PM	B91088
Cobalt	ND	0.0024	0.0060		mg/L	1	9/15/2022 6:36:06 PM	B91088
Nickel	ND	0.0033	0.010		mg/L	1	9/15/2022 6:36:06 PM	B91088
Silver	0.0056	0.0013	0.0050		mg/L	1	9/15/2022 6:36:06 PM	B91088
Vanadium	0.0026	0.0017	0.050	J	mg/L	1	9/15/2022 6:36:06 PM	B91088
Zinc	0.016	0.0032	0.010		mg/L	1	9/15/2022 6:36:06 PM	B91088
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/13/2022 2:38:00 PM	B91030
Arsenic	0.00024	0.00012	0.0010	J	mg/L	1	9/13/2022 2:38:00 PM	B91030
Lead	ND	0.000057	0.00050		mg/L	1	9/13/2022 2:38:00 PM	B91030
Selenium	0.00071	0.00034	0.0010	J	mg/L	1	9/15/2022 1:13:38 PM	A91078
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00018	0.000091	0.00020	J	mg/L	1	9/17/2022 12:06:34 PM	70232

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209441**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB 9-8-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/8/2022 10:30:00 AM
Lab ID: 2209441-007A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	9/13/2022 4:10:00 PM	R90977
Toluene	ND	0.20	1.0		µg/L	1	9/13/2022 4:10:00 PM	R90977
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/13/2022 4:10:00 PM	R90977
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/13/2022 4:10:00 PM	R90977
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/13/2022 4:10:00 PM	R90977
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 4:10:00 PM	R90977
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/13/2022 4:10:00 PM	R90977
Acetone	20	2.5	10		µg/L	1	9/13/2022 4:10:00 PM	R90977
Bromomethane	ND	0.85	3.0		µg/L	1	9/13/2022 4:10:00 PM	R90977
2-Butanone	29	2.0	10		µg/L	1	9/13/2022 4:10:00 PM	R90977
Carbon disulfide	ND	0.59	10		µg/L	1	9/13/2022 4:10:00 PM	R90977
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/13/2022 4:10:00 PM	R90977
Chloroform	ND	0.13	1.0		µg/L	1	9/13/2022 4:10:00 PM	R90977
Chloromethane	ND	0.41	3.0		µg/L	1	9/13/2022 4:10:00 PM	R90977
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/13/2022 4:10:00 PM	R90977
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/13/2022 4:10:00 PM	R90977
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/13/2022 4:10:00 PM	R90977
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 4:10:00 PM	R90977
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/13/2022 4:10:00 PM	R90977
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/13/2022 4:10:00 PM	R90977
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/13/2022 4:10:00 PM	R90977
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 4:10:00 PM	R90977
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/13/2022 4:10:00 PM	R90977
Styrene	ND	0.14	1.0		µg/L	1	9/13/2022 4:10:00 PM	R90977
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/13/2022 4:10:00 PM	R90977
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/13/2022 4:10:00 PM	R90977
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/13/2022 4:10:00 PM	R90977
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/13/2022 4:10:00 PM	R90977
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/13/2022 4:10:00 PM	R90977
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%Rec	1	9/13/2022 4:10:00 PM	R90977
Surr: 4-Bromofluorobenzene	93.3	0	70-130		%Rec	1	9/13/2022 4:10:00 PM	R90977
Surr: Dibromofluoromethane	99.6	0	70-130		%Rec	1	9/13/2022 4:10:00 PM	R90977
Surr: Toluene-d8	89.5	0	70-130		%Rec	1	9/13/2022 4:10:00 PM	R90977

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209441**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: TRIP BLANK
Project: 2022 GW Sampling 3rd Quarter
Collection Date:
Lab ID: 2209441-008A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	9/13/2022 4:33:00 PM	R90977
Toluene	ND	0.20	1.0		µg/L	1	9/13/2022 4:33:00 PM	R90977
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/13/2022 4:33:00 PM	R90977
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/13/2022 4:33:00 PM	R90977
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/13/2022 4:33:00 PM	R90977
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 4:33:00 PM	R90977
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/13/2022 4:33:00 PM	R90977
Acetone	ND	2.5	10		µg/L	1	9/13/2022 4:33:00 PM	R90977
Bromomethane	ND	0.85	3.0		µg/L	1	9/13/2022 4:33:00 PM	R90977
2-Butanone	ND	2.0	10		µg/L	1	9/13/2022 4:33:00 PM	R90977
Carbon disulfide	ND	0.59	10		µg/L	1	9/13/2022 4:33:00 PM	R90977
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/13/2022 4:33:00 PM	R90977
Chloroform	ND	0.13	1.0		µg/L	1	9/13/2022 4:33:00 PM	R90977
Chloromethane	ND	0.41	3.0		µg/L	1	9/13/2022 4:33:00 PM	R90977
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/13/2022 4:33:00 PM	R90977
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/13/2022 4:33:00 PM	R90977
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/13/2022 4:33:00 PM	R90977
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 4:33:00 PM	R90977
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/13/2022 4:33:00 PM	R90977
Methylene Chloride	4.8	0.50	3.0		µg/L	1	9/13/2022 4:33:00 PM	R90977
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/13/2022 4:33:00 PM	R90977
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 4:33:00 PM	R90977
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/13/2022 4:33:00 PM	R90977
Styrene	ND	0.14	1.0		µg/L	1	9/13/2022 4:33:00 PM	R90977
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/13/2022 4:33:00 PM	R90977
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/13/2022 4:33:00 PM	R90977
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/13/2022 4:33:00 PM	R90977
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/13/2022 4:33:00 PM	R90977
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/13/2022 4:33:00 PM	R90977
Surr: 1,2-Dichloroethane-d4	104	0	70-130		%Rec	1	9/13/2022 4:33:00 PM	R90977
Surr: 4-Bromofluorobenzene	89.5	0	70-130		%Rec	1	9/13/2022 4:33:00 PM	R90977
Surr: Dibromofluoromethane	101	0	70-130		%Rec	1	9/13/2022 4:33:00 PM	R90977
Surr: Toluene-d8	90.3	0	70-130		%Rec	1	9/13/2022 4:33:00 PM	R90977

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209441**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: TRIP BLANK
Project: 2022 GW Sampling 3rd Quarter
Collection Date:
Lab ID: 2209441-008B
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	9/15/2022 4:41:34 PM	70173

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

ANALYTICAL REPORT

September 19, 2022

Hall Environmental Analysis Laboratory

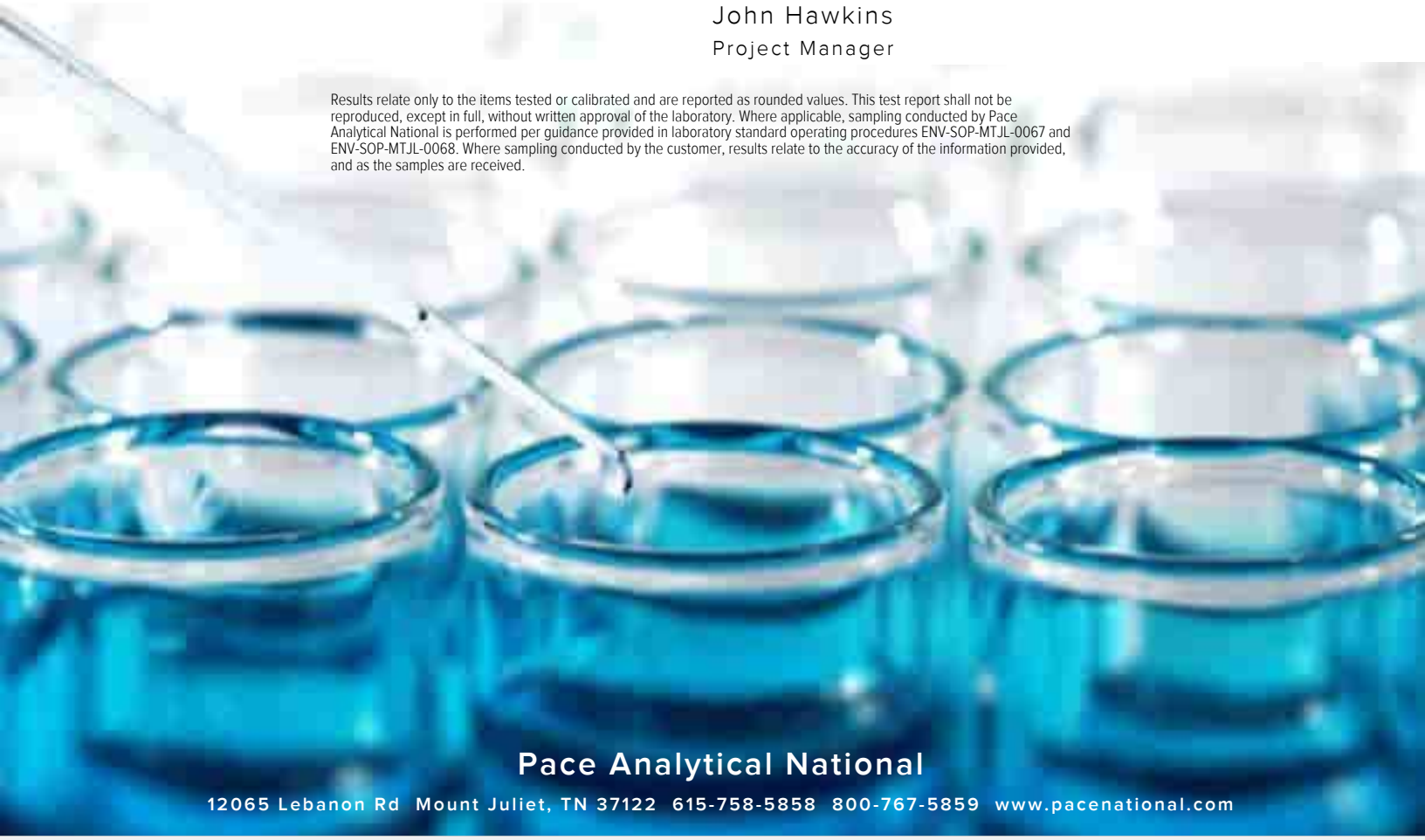
Sample Delivery Group:	L1535062
Samples Received:	09/13/2022
Project Number:	
Description:	

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By: John V Hawkins

John Hawkins
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 4

Sr: Sample Results 5

2209441-001F EB-09-08-22 L1535062-01 5

2209441-002F PW-3 L1535062-02 6

2209441-003F PW-4 L1535062-03 7

2209441-004F EAST LDU L1535062-04 8

2209441-005F WEST LDU L1535062-05 9

2209441-006F DUP 9-8-22 L1535062-06 10

Qc: Quality Control Summary 11

Wet Chemistry by Method 4500CN E-2016 11

Gl: Glossary of Terms 12

Al: Accreditations & Locations 13

Sc: Sample Chain of Custody 14

SAMPLE SUMMARY

2209441-001F EB-09-08-22 L1535062-01 WW

Collected by	Collected date/time	Received date/time
	09/08/22 08:35	09/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1925290	1	09/19/22 00:58	09/19/22 15:56	CAT	Mt. Juliet, TN

2209441-002F PW-3 L1535062-02 WW

Collected by	Collected date/time	Received date/time
	09/08/22 09:10	09/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1925290	1	09/19/22 00:58	09/19/22 15:57	CAT	Mt. Juliet, TN

2209441-003F PW-4 L1535062-03 WW

Collected by	Collected date/time	Received date/time
	09/08/22 09:40	09/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1925290	1	09/19/22 00:58	09/19/22 16:03	CAT	Mt. Juliet, TN

2209441-004F EAST LDU L1535062-04 WW

Collected by	Collected date/time	Received date/time
	09/08/22 10:05	09/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1925290	1	09/19/22 00:58	09/19/22 16:04	CAT	Mt. Juliet, TN

2209441-005F WEST LDU L1535062-05 WW

Collected by	Collected date/time	Received date/time
	09/08/22 10:30	09/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1925290	1	09/19/22 00:58	09/19/22 16:05	CAT	Mt. Juliet, TN

2209441-006F DUP 9-8-22 L1535062-06 WW

Collected by	Collected date/time	Received date/time
	09/08/22 00:00	09/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1925290	1	09/19/22 00:58	09/19/22 16:06	CAT	Mt. Juliet, TN

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	U		1.80	5.00	1	09/19/2022 15:56	WG1925290

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	U		1.80	5.00	1	09/19/2022 15:57	WG1925290

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	U		1.80	5.00	1	09/19/2022 16:03	WG1925290

Received by OCD: 4/21/2023 9:21:57 AM

Collected date/time: 09/08/22 10:05
L1535062

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	U		1.80	5.00	1	09/19/2022 16:04	WG1925290

Released to Imaging: 4/21/2023 9:40:26 AM

Received by OCD: 4/21/2023 9:21:57 AM

SAMPLE RESULTS - 05

220941-0051 WEST LEG

Collected date/time: 09/08/22 10:30

L1535062

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	U		1.80	5.00	1	09/19/2022 16:05	WG1925290

Released to Imaging: 4/21/2023 9:40:26 AM

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	U		1.80	5.00	1	09/19/2022 16:06	WG1925290

Method Blank (MB)

(MB) R3838823-1 09/19/22 15:37

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Cyanide	U		1.80	5.00

L1533610-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1533610-02 09/19/22 15:41 • (DUP) R3838823-3 09/19/22 15:42

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	U	U	1	0.000		20

L1534252-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1534252-02 09/19/22 15:49 • (DUP) R3838823-6 09/19/22 15:50

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3838823-2 09/19/22 15:38

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	100	95.9	95.9	87.1-120	

L1534232-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1534232-10 09/19/22 15:44 • (MS) R3838823-4 09/19/22 15:45 • (MSD) R3838823-5 09/19/22 15:46

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	100	U	94.7	94.8	94.7	94.8	1	90.0-110			0.106	20

L1535062-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1535062-02 09/19/22 15:57 • (MS) R3838823-7 09/19/22 15:59 • (MSD) R3838823-8 09/19/22 16:02

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	100	U	93.6	91.9	93.6	91.9	1	90.0-110			1.83	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
	The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

B227

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

SUB CONTRATOR: Pace TN	COMPANY: PACE TN	PHONE: (800) 767-5859	FAX: (615) 758-5859
ADDRESS: 12065 Lebanon Rd		ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: Mt. Juliet, TN 37122			L1535062

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	FW ANALYTICAL COMMENTS	
1	2209441-001F	EB-09-08-22	500AMBHDP F-NAOH	Groundw ater	9/8/2022 8:35:00 AM	1	Total Cyanide J and MDL	-01
2	2209441-002F	PW-3	500AMBHDP F-NAOH	Groundw ater	9/8/2022 9:10:00 AM	1	Total Cyanide J and MDL	-02
3	2209441-003F	PW-4	500AMBHDP F-NAOH	Groundw ater	9/8/2022 9:40:00 AM	1	Total Cyanide J and MDL	-03
4	2209441-004F	EAST LDU	500AMBHDP F-NAOH	Groundw ater	9/8/2022 10:05:00 AM	1	Total Cyanide J and MDL	-04
5	2209441-005F	WEST LDU	500AMBHDP F-NAOH	Groundw ater	9/8/2022 10:30:00 AM	1	Total Cyanide J and MDL	-05
6	2209441-006F	DUP 9-8-22	500AMBHDP F-NAOH	Groundw ater	9/8/2022	1	Total Cyanide J and MDL	-06

Sample Receipt Checklist

COC Seal Present/Intact:	Y N	If Applicable	
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	Y N	Pres.Correct/Check:	Y N
Correct bottles used:	Y N		
Sufficient volume sent:	Y N		
RAD Screen <0.5 mR/hr:	Y N		

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

OK

Relinquished By:	Date: 9/9/2022	Time: 3:52 PM	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date: 9/13/22	Time: 900

TAT: Standard ☐ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:

☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY

Temp of samples 4 °C Attempt to Cool ? _____

Comments: _____

TRK# 5755 8093 3262

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209441**
07-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70092** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **70092** RunNo: **90990**
Prep Date: **9/12/2022** Analysis Date: **9/13/2022** SeqNo: **3254082** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0018	0.0030								J
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LCSLL-70092** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **70092** RunNo: **90990**
Prep Date: **9/12/2022** Analysis Date: **9/13/2022** SeqNo: **3254083** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0019	0.0030	0.002000	0	94.5	50	150			J
Beryllium	0.0018	0.0020	0.002000	0	91.7	50	150			J
Cadmium	0.0023	0.0020	0.002000	0	114	50	150			
Chromium	0.0070	0.0060	0.006000	0	117	50	150			
Cobalt	0.0050	0.0060	0.006000	0	83.1	50	150			J
Nickel	0.0063	0.010	0.005000	0	126	50	150			J
Silver	0.0050	0.0050	0.005000	0	100	50	150			
Vanadium	0.010	0.050	0.01000	0	104	50	150			J
Zinc	0.011	0.010	0.01000	0	113	50	150			

Sample ID: **LCS-70092** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **70092** RunNo: **90990**
Prep Date: **9/12/2022** Analysis Date: **9/13/2022** SeqNo: **3254084** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0030	0.5000	0	98.5	85	115			
Beryllium	0.51	0.0020	0.5000	0	102	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.4	85	115			
Chromium	0.49	0.0060	0.5000	0	98.1	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.7	85	115			
Nickel	0.49	0.010	0.5000	0	97.2	85	115			
Silver	0.10	0.0050	0.1000	0	99.9	85	115			
Vanadium	0.50	0.050	0.5000	0	99.6	85	115			
Zinc	0.50	0.010	0.5000	0	99.5	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209441**
07-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **2209441-006DMS** SampType: **MS** TestCode: **EPA Method 200.7: Metals**
Client ID: **DUP 9-8-22** Batch ID: **70092** RunNo: **90990**
Prep Date: **9/12/2022** Analysis Date: **9/13/2022** SeqNo: **3254122** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0030	0.5000	0.01130	96.4	70	130			
Beryllium	0.49	0.0020	0.5000	0	98.9	70	130			
Cadmium	0.47	0.0020	0.5000	0	94.9	70	130			
Chromium	0.47	0.0060	0.5000	0	94.0	70	130			
Cobalt	0.49	0.0060	0.5000	0.01338	94.9	70	130			
Nickel	0.46	0.010	0.5000	0	91.8	70	130			
Silver	0.10	0.0050	0.1000	0	102	70	130			
Vanadium	0.49	0.050	0.5000	0	98.7	70	130			
Zinc	0.48	0.010	0.5000	0	96.3	70	130			

Sample ID: **2209441-006DMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Metals**
Client ID: **DUP 9-8-22** Batch ID: **70092** RunNo: **90990**
Prep Date: **9/12/2022** Analysis Date: **9/13/2022** SeqNo: **3254123** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.52	0.0030	0.5000	0.01130	101	70	130	4.68	20	
Beryllium	0.52	0.0020	0.5000	0	105	70	130	5.54	20	
Cadmium	0.50	0.0020	0.5000	0	100	70	130	5.44	20	
Chromium	0.50	0.0060	0.5000	0	99.5	70	130	5.60	20	
Cobalt	0.51	0.0060	0.5000	0.01338	98.8	70	130	3.90	20	
Nickel	0.49	0.010	0.5000	0	97.1	70	130	5.63	20	
Silver	0.11	0.0050	0.1000	0	106	70	130	3.94	20	
Vanadium	0.52	0.050	0.5000	0	103	70	130	4.46	20	
Zinc	0.52	0.010	0.5000	0	104	70	130	7.22	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209441**

07-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-B** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**

Client ID: **PBW** Batch ID: **B91088** RunNo: **91088**

Prep Date: Analysis Date: **9/15/2022** SeqNo: **3258295** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS-B** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**

Client ID: **BatchQC** Batch ID: **B91088** RunNo: **91088**

Prep Date: Analysis Date: **9/15/2022** SeqNo: **3258297** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0015	0.0020	0.002000	0	75.8	50	150			J
Beryllium	0.0020	0.0020	0.002000	0	101	50	150			
Cadmium	0.0018	0.0020	0.002000	0	91.7	50	150			J
Chromium	0.0073	0.0060	0.006000	0	121	50	150			
Cobalt	0.0068	0.0060	0.006000	0	114	50	150			
Nickel	0.0052	0.010	0.005000	0	105	50	150			J
Silver	0.0057	0.0050	0.005000	0	114	50	150			
Vanadium	0.011	0.050	0.01000	0	115	50	150			J
Zinc	0.012	0.010	0.01000	0	124	50	150			

Sample ID: **LCS-B** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**

Client ID: **LCSW** Batch ID: **B91088** RunNo: **91088**

Prep Date: Analysis Date: **9/15/2022** SeqNo: **3258298** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0020	0.5000	0	102	85	115			
Beryllium	0.53	0.0020	0.5000	0	106	85	115			
Cadmium	0.52	0.0020	0.5000	0	105	85	115			
Chromium	0.52	0.0060	0.5000	0	103	85	115			
Cobalt	0.50	0.0060	0.5000	0	100	85	115			
Nickel	0.51	0.010	0.5000	0	102	85	115			
Silver	0.11	0.0050	0.1000	0	108	85	115			
Vanadium	0.53	0.050	0.5000	0	105	85	115			
Zinc	0.51	0.010	0.5000	0	103	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209441**
07-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**							
Client ID: **PBW**	Batch ID: **B91030**	RunNo: **91030**							
Prep Date:	Analysis Date: **9/13/2022**	SeqNo: **3255545**	Units: **mg/L**						

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**							
Client ID: **BatchQC**	Batch ID: **B91030**	RunNo: **91030**							
Prep Date:	Analysis Date: **9/13/2022**	SeqNo: **3255546**	Units: **mg/L**						

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0011	0.0010	0.001000	0	109	50	150			
Arsenic	0.00094	0.0010	0.001000	0	94.5	50	150			J
Lead	0.00051	0.00050	0.0005000	0	102	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**							
Client ID: **LCSW**	Batch ID: **B91030**	RunNo: **91030**							
Prep Date:	Analysis Date: **9/13/2022**	SeqNo: **3255547**	Units: **mg/L**						

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	94.9	85	115			
Arsenic	0.024	0.0010	0.02500	0	97.7	85	115			
Lead	0.012	0.00050	0.01250	0	96.6	85	115			

Sample ID: **MB-70092**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**							
Client ID: **PBW**	Batch ID: **70092**	RunNo: **91042**							
Prep Date: **9/12/2022**	Analysis Date: **9/14/2022**	SeqNo: **3256115**	Units: **mg/L**						

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00063	0.0010								J
Arsenic	ND	0.0010								
Lead	0.00040	0.00050								J
Selenium	ND	0.0010								

Sample ID: **MSLCSLL-70092**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**							
Client ID: **BatchQC**	Batch ID: **70092**	RunNo: **91042**							
Prep Date: **9/12/2022**	Analysis Date: **9/14/2022**	SeqNo: **3256116**	Units: **mg/L**						

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0014	0.0010	0.001000	0	144	50	150			
Arsenic	0.0011	0.0010	0.001000	0	109	50	150			
Lead	0.00054	0.00050	0.0005000	0	109	50	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209441**

07-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MSLCSLL-70092**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **70092**	RunNo: **91042**
Prep Date: **9/12/2022**	Analysis Date: **9/14/2022**	SeqNo: **3256116** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.0012	0.0010	0.001000	0	121	50	150			

Sample ID: **MSLCS-70092**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **70092**	RunNo: **91042**
Prep Date: **9/12/2022**	Analysis Date: **9/14/2022**	SeqNo: **3256117** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	104	85	115			
Arsenic	0.026	0.0010	0.02500	0	102	85	115			
Lead	0.013	0.00050	0.01250	0	102	85	115			
Selenium	0.026	0.0010	0.02500	0	105	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209441**
07-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A91030**	RunNo: **91030**
Prep Date:	Analysis Date: **9/13/2022**	SeqNo: **3255541** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A91030**	RunNo: **91030**
Prep Date:	Analysis Date: **9/13/2022**	SeqNo: **3255542** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0010	0.0010	0.001000	0	102	50	150			
Arsenic	0.0010	0.0010	0.001000	0	102	50	150			
Lead	0.00050	0.00050	0.0005000	0	100	50	150			
Selenium	0.00088	0.0010	0.001000	0	87.9	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A91030**	RunNo: **91030**
Prep Date:	Analysis Date: **9/13/2022**	SeqNo: **3255543** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	94.3	85	115			
Arsenic	0.025	0.0010	0.02500	0	98.9	85	115			
Lead	0.012	0.00050	0.01250	0	97.6	85	115			
Selenium	0.023	0.0010	0.02500	0	91.8	85	115			

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B91030**	RunNo: **91030**
Prep Date:	Analysis Date: **9/13/2022**	SeqNo: **3255549** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B91030**	RunNo: **91030**
Prep Date:	Analysis Date: **9/13/2022**	SeqNo: **3255550** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0011	0.0010	0.001000	0	109	50	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209441**

07-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B91030**	RunNo: **91030**
Prep Date:	Analysis Date: **9/13/2022**	SeqNo: **3255550** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.00094	0.0010	0.001000	0	94.5	50	150			J
Lead	0.00051	0.00050	0.0005000	0	102	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B91030**	RunNo: **91030**
Prep Date:	Analysis Date: **9/13/2022**	SeqNo: **3255551** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	94.9	85	115			
Arsenic	0.024	0.0010	0.02500	0	97.7	85	115			
Lead	0.012	0.00050	0.01250	0	96.6	85	115			

Sample ID: **2209441-006EMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **DUP 9-8-22**	Batch ID: **B91030**	RunNo: **91030**
Prep Date:	Analysis Date: **9/13/2022**	SeqNo: **3255581** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	94.2	70	130			
Arsenic	0.025	0.0010	0.02500	0.0002424	99.4	70	130			
Lead	0.012	0.00050	0.01250	0	95.0	70	130			

Sample ID: **2209441-006EMSDL**	SampType: **MSD**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **DUP 9-8-22**	Batch ID: **B91030**	RunNo: **91030**
Prep Date:	Analysis Date: **9/13/2022**	SeqNo: **3255582** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	94.7	70	130	0.522	20	
Arsenic	0.025	0.0010	0.02500	0.0002424	100	70	130	0.908	20	
Lead	0.011	0.00050	0.01250	0	91.9	70	130	3.30	20	

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A91078**	RunNo: **91078**
Prep Date:	Analysis Date: **9/15/2022**	SeqNo: **3257815** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209441**
07-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **LCSLL** SampType: **LCSLL** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **A91078** RunNo: **91078**
Prep Date: Analysis Date: **9/15/2022** SeqNo: **3257816** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.0013	0.0010	0.001000	0	129	50	150			

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **A91078** RunNo: **91078**
Prep Date: Analysis Date: **9/15/2022** SeqNo: **3257817** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.023	0.0010	0.02500	0	92.7	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209441**
07-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70232**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW**	Batch ID: **70232**	RunNo: **91107**
Prep Date: **9/16/2022**	Analysis Date: **9/17/2022**	SeqNo: **3259050** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-70232**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC**	Batch ID: **70232**	RunNo: **91107**
Prep Date: **9/16/2022**	Analysis Date: **9/17/2022**	SeqNo: **3259051** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00019	0.00020	0.0001500	0	124	50	150			J

Sample ID: **LCS-70232**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW**	Batch ID: **70232**	RunNo: **91107**
Prep Date: **9/16/2022**	Analysis Date: **9/17/2022**	SeqNo: **3259052** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0053	0.00020	0.005000	0	105	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209441**
07-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70123**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **70123**	RunNo: **91007**							
Prep Date: **9/13/2022**	Analysis Date: **9/13/2022**	SeqNo: **3254670**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-70123**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **LCSW**	Batch ID: **70123**	RunNo: **91007**							
Prep Date: **9/13/2022**	Analysis Date: **9/13/2022**	SeqNo: **3254671**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.091	0.010	0.1000	0	91.5	70	130			

Sample ID: **LCSD-70123**	SampType: **LCSD**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **LCSS02**	Batch ID: **70123**	RunNo: **91007**							
Prep Date: **9/13/2022**	Analysis Date: **9/13/2022**	SeqNo: **3254672**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.098	0.010	0.1000	0	98.3	70	130	7.22	20	

Sample ID: **2209441-002BMS**	SampType: **MS**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PW-3**	Batch ID: **70123**	RunNo: **91007**							
Prep Date: **9/13/2022**	Analysis Date: **9/13/2022**	SeqNo: **3254675**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.089	0.0095	0.09537	0	93.1	65	135			

Sample ID: **MB-70123**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **70123**	RunNo: **91007**							
Prep Date: **9/13/2022**	Analysis Date: **9/13/2022**	SeqNo: **3254696**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **MB-70173**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **70173**	RunNo: **91063**							
Prep Date: **9/15/2022**	Analysis Date: **9/15/2022**	SeqNo: **3258444**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209441**

07-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70173**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **70173**	RunNo: **91063**
Prep Date: **9/15/2022**	Analysis Date: **9/15/2022**	SeqNo: **3258445** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-70173**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW**	Batch ID: **70173**	RunNo: **91063**
Prep Date: **9/15/2022**	Analysis Date: **9/15/2022**	SeqNo: **3258447** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.088	0.010	0.1000	0	87.9	70	130			

Sample ID: **LCSD-70173**	SampType: **LCSD**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSS02**	Batch ID: **70173**	RunNo: **91063**
Prep Date: **9/15/2022**	Analysis Date: **9/15/2022**	SeqNo: **3258448** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.094	0.010	0.1000	0	93.6	70	130	6.28	20	

NOTES:

No trip blank was included with work order

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209441**
07-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **LCS-70105** SampType: **LCS** TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSW** Batch ID: **70105** RunNo: **90980**
Prep Date: **9/12/2022** Analysis Date: **9/13/2022** SeqNo: **3261749** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.15	0.064	0.1875	0	81.4	31.7	75.4			S
Surr: DNOP	0.021		0.01875		113	42.2	138			

Sample ID: **LCSD-70105** SampType: **LCSD** TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02** Batch ID: **70105** RunNo: **90980**
Prep Date: **9/12/2022** Analysis Date: **9/13/2022** SeqNo: **3261750** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.23	0.064	0.1875	0	120	31.7	75.4	38.5	20	RS
Surr: DNOP	0.021		0.01875		112	42.2	138	0	0	

Sample ID: **MB-70105** SampType: **MBLK** TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **PBW** Batch ID: **70105** RunNo: **90980**
Prep Date: **9/12/2022** Analysis Date: **9/13/2022** SeqNo: **3261765** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.052	0.064								JE
Motor Oil Range Organics (MRO)	ND	0.080								E
Surr: DNOP	0.038		0.03750		102	42.2	138			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209441**

07-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **R90998**	RunNo: **90998**
Prep Date:	Analysis Date: **9/13/2022**	SeqNo: **3254363** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.50	0.050	0.5000	0	99.6	80	120			
Surr: BFB	45		20.00		223	70	130			S

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **R90998**	RunNo: **90998**
Prep Date:	Analysis Date: **9/13/2022**	SeqNo: **3254366** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	21		20.00		105	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209441**
07-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R90977**	RunNo: **90977**
Prep Date:	Analysis Date: **9/13/2022**	SeqNo: **3255160** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	98.0	70	130			
Toluene	19	1.0	20.00	0	96.9	70	130			
Chlorobenzene	20	1.0	20.00	0	98.9	70	130			
1,1-Dichloroethene	19	1.0	20.00	0	92.9	70	130			
Trichloroethene (TCE)	19	1.0	20.00	0	95.5	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		100	70	130			
Surr: 4-Bromofluorobenzene	9.2		10.00		92.0	70	130			
Surr: Dibromofluoromethane	9.9		10.00		99.0	70	130			
Surr: Toluene-d8	9.1		10.00		90.7	70	130			

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R90977**	RunNo: **90977**
Prep Date:	Analysis Date: **9/13/2022**	SeqNo: **3255170** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209441**

07-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R90977**	RunNo: **90977**
Prep Date:	Analysis Date: **9/13/2022**	SeqNo: **3255170** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	8.9		10.00		89.4	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	9.0		10.00		90.1	70	130			

Sample ID: **2209441-002ams**	SampType: **MS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PW-3**	Batch ID: **R90977**	RunNo: **90977**
Prep Date:	Analysis Date: **9/13/2022**	SeqNo: **3255200** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	100	70	130			
Toluene	20	1.0	20.00	0	97.5	70	130			
Chlorobenzene	20	1.0	20.00	0	99.8	70	130			
1,1-Dichloroethene	19	1.0	20.00	0	92.9	70	130			
Trichloroethene (TCE)	19	1.0	20.00	0	96.0	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		103	70	130			
Surr: 4-Bromofluorobenzene	9.3		10.00		93.0	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	9.0		10.00		90.3	70	130			

Sample ID: **2209441-002amsd**	SampType: **MSD**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PW-3**	Batch ID: **R90977**	RunNo: **90977**
Prep Date:	Analysis Date: **9/13/2022**	SeqNo: **3255201** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	97.2	70	130	2.92	20	
Toluene	18	1.0	20.00	0	91.5	70	130	6.41	20	
Chlorobenzene	19	1.0	20.00	0	94.0	70	130	5.98	20	
1,1-Dichloroethene	18	1.0	20.00	0	87.7	70	130	5.67	20	
Trichloroethene (TCE)	18	1.0	20.00	0	90.6	70	130	5.86	20	
Surr: 1,2-Dichloroethane-d4	10		10.00		104	70	130	0	0	
Surr: 4-Bromofluorobenzene	9.2		10.00		92.4	70	130	0	0	
Surr: Dibromofluoromethane	10		10.00		103	70	130	0	0	
Surr: Toluene-d8	8.9		10.00		89.4	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209441**
07-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **mb-70094**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **70094**	RunNo: **91043**
Prep Date: **9/12/2022**	Analysis Date: **9/14/2022**	SeqNo: **3256095** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Anthracene	ND	10								
Benz(a)anthracene	ND	5.0								
Benzo(b)fluoranthene	ND	10								
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	10								
2,4-Dinitrophenol	ND	20								
Fluoranthene	ND	10								
Fluorene	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
1-Methylnaphthalene	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
Naphthalene	ND	5.0								
Phenanthrene	ND	10								
Phenol	ND	20								
Pyrene	ND	10								
Pyridine	ND	40								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	53		200.0		26.4	15	84.5			
Surr: Phenol-d5	48		200.0		24.2	15	67			
Surr: 2,4,6-Tribromophenol	53		200.0		26.7	15	108			
Surr: Nitrobenzene-d5	46		100.0		45.9	16.8	112			
Surr: 2-Fluorobiphenyl	40		100.0		40.5	15	101			
Surr: 4-Terphenyl-d14	66		100.0		66.1	34.4	134			

Sample ID: **lcs-70094**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **70094**	RunNo: **91043**
Prep Date: **9/12/2022**	Analysis Date: **9/14/2022**	SeqNo: **3256096** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209441**

07-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **lcs-70094**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **70094**	RunNo: **91043**
Prep Date: **9/12/2022**	Analysis Date: **9/14/2022**	SeqNo: **3256096** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	57	10	100.0	0	57.0	21.3	104			
1,4-Dichlorobenzene	53	5.0	100.0	0	52.9	15	89.8			
Phenol	75	20	200.0	0	37.7	17	61.1			
Pyrene	92	10	100.0	0	92.4	61	123			
Surr: 2-Fluorophenol	87		200.0		43.3	15	84.5			
Surr: Phenol-d5	69		200.0		34.5	15	67			
Surr: 2,4,6-Tribromophenol	110		200.0		55.6	15	108			
Surr: Nitrobenzene-d5	62		100.0		62.1	16.8	112			
Surr: 2-Fluorobiphenyl	56		100.0		55.5	15	101			
Surr: 4-Terphenyl-d14	98		100.0		98.4	34.4	134			

Sample ID: **lcsd-70094**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **70094**	RunNo: **91043**
Prep Date: **9/12/2022**	Analysis Date: **9/14/2022**	SeqNo: **3256097** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	42	10	100.0	0	41.7	21.3	104	31.0	45.3	
1,4-Dichlorobenzene	38	5.0	100.0	0	37.8	15	89.8	33.2	39.6	
Phenol	53	20	200.0	0	26.6	17	61.1	34.4	42.5	
Pyrene	66	10	100.0	0	66.3	61	123	32.8	11.8	R
Surr: 2-Fluorophenol	62		200.0		30.9	15	84.5	0	0	
Surr: Phenol-d5	48		200.0		24.2	15	67	0	0	
Surr: 2,4,6-Tribromophenol	90		200.0		44.8	15	108	0	0	
Surr: Nitrobenzene-d5	44		100.0		44.1	16.8	112	0	0	
Surr: 2-Fluorobiphenyl	42		100.0		41.7	15	101	0	0	
Surr: 4-Terphenyl-d14	69		100.0		68.5	34.4	134	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209441**
07-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **mb-70094**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**							
Client ID: **PBW**	Batch ID: **70094**	RunNo: **90997**							
Prep Date: **9/12/2022**	Analysis Date: **9/13/2022**	SeqNo: **3254249**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								E
Naphthalene	ND	0.30								
1-Methylnaphthalene	ND	0.30								
2-Methylnaphthalene	ND	0.30								
Acenaphthene	ND	0.30								
Fluorene	ND	0.30								
Phenanthrene	ND	0.30								
Anthracene	ND	0.30								
Fluoranthene	ND	0.30								
Pyrene	ND	1.0								
Benz(a)anthracene	ND	0.30								
Chrysene	ND	0.30								E
Benzo(b)fluoranthene	ND	0.30								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	41		100.0		40.6	31.6	100			
Surr: 2,4,6-Tribromophenol	48		200.0		23.8	22	101			
Surr: 2-Fluorobiphenyl	40		100.0		39.6	26.7	90.1			
Surr: 4-Terphenyl-d14	59		100.0		59.0	72.3	147			S

Sample ID: **lcs-70094**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**							
Client ID: **LCSW**	Batch ID: **70094**	RunNo: **90997**							
Prep Date: **9/12/2022**	Analysis Date: **9/13/2022**	SeqNo: **3254250**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.44	0.10	2.000	0	22.0	20.2	48.4			
Naphthalene	0.76	0.30	2.000	0	38.0	21.3	79.9			
1-Methylnaphthalene	0.78	0.30	2.000	0	39.0	22.2	80.3			
2-Methylnaphthalene	0.80	0.30	2.000	0	40.0	20.6	80.1			
Acenaphthene	0.78	0.30	2.000	0	39.0	29.8	82.7			
Fluorene	0.96	0.30	2.000	0	48.0	33.3	86			
Phenanthrene	1.2	0.30	2.000	0	58.0	38.2	93.9			
Anthracene	1.5	0.30	2.000	0	75.0	41.1	95.6			
Fluoranthene	1.8	0.30	2.000	0	88.0	52.9	123			
Pyrene	1.5	1.0	2.000	0	75.0	51	113			
Benz(a)anthracene	1.6	0.30	2.000	0	82.0	51	147			
Chrysene	1.0	0.30	2.000	0	51.0	55.3	115			S
Benzo(b)fluoranthene	1.3	0.30	2.000	0	66.0	44.4	136			
Indeno(1,2,3-cd)pyrene	1.6	0.30	2.000	0	81.0	31.4	165			
Surr: Nitrobenzene-d5	38		100.0		38.2	31.6	100			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209441**

07-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **lcs-70094**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**							
Client ID: **LCSW**	Batch ID: **70094**	RunNo: **90997**							
Prep Date: **9/12/2022**	Analysis Date: **9/13/2022**	SeqNo: **3254250**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	67		200.0		33.3	22	101			
Surr: 2-Fluorobiphenyl	37		100.0		37.1	26.7	90.1			
Surr: 4-Terphenyl-d14	44		100.0		44.2	72.3	147			S

Sample ID: **lcsd-70094**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**							
Client ID: **LCSS02**	Batch ID: **70094**	RunNo: **90997**							
Prep Date: **9/12/2022**	Analysis Date: **9/13/2022**	SeqNo: **3254251**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.40	0.10	2.000	0	20.0	20.2	48.4	9.52	30.1	S
Naphthalene	0.72	0.30	2.000	0	36.0	21.3	79.9	5.41	25.6	
1-Methylnaphthalene	0.74	0.30	2.000	0	37.0	22.2	80.3	5.26	25	
2-Methylnaphthalene	0.78	0.30	2.000	0	39.0	20.6	80.1	2.53	25	
Acenaphthene	0.72	0.30	2.000	0	36.0	29.8	82.7	8.00	27.8	
Fluorene	0.88	0.30	2.000	0	44.0	33.3	86	8.70	26.4	
Phenanthrene	1.0	0.30	2.000	0	52.0	38.2	93.9	10.9	27.9	
Anthracene	1.4	0.30	2.000	0	69.0	41.1	95.6	8.33	25.6	
Fluoranthene	1.6	0.30	2.000	0	79.0	52.9	123	10.8	22.8	
Pyrene	1.3	1.0	2.000	0	65.0	51	113	14.3	20	
Benz(a)anthracene	1.6	0.30	2.000	0	78.0	51	147	5.00	24.1	
Chrysene	0.96	0.30	2.000	0	48.0	55.3	115	6.06	20	S
Benzo(b)fluoranthene	1.3	0.30	2.000	0	63.0	44.4	136	4.65	24.5	
Indeno(1,2,3-cd)pyrene	1.6	0.30	2.000	0	79.0	31.4	165	2.50	21.1	
Surr: Nitrobenzene-d5	36		100.0		35.5	31.6	100	0	0	
Surr: 2,4,6-Tribromophenol	62		200.0		31.1	22	101	0	0	
Surr: 2-Fluorobiphenyl	34		100.0		33.9	26.7	90.1	0	0	
Surr: 4-Terphenyl-d14	40		100.0		39.6	72.3	147	0	0	S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **Marathon** Work Order Number: **2209441** RcptNo: 1

Received By: **Desiree Dominguez** **9/9/2022 3:25:00 PM** DD

Completed By: **Desiree Dominguez** **9/9/2022 3:33:09 PM** DD

Reviewed By: KPG 9.9.22

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☑ No ☐ NA ☐
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: 12 - 6 (<2 or >12 unless noted)
Adjusted? NO
Checked by: TMC 9/9/22

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.8	Good	Yes			
2	2.4	Good	Yes			

Released to Imaging: 4/21/2023 9:40:26 AM
Received by OCD: 4/21/2023 9:21:57 AM

Chain-of-Custody Record

Marathon Gallup Refinery

Address: 92 Giant Crossing Road
Jamestown, NM,87347

#: 808-640-1823

r Fax#:

Package:
dard ☐ Level 4 (Full Validation)

tation: ☐ Az Compliance
AC ☐ Other

DD (Type)

Turn-Around Time:
X Standard Rush

Project Name:
2022 GW Sampling 1st Quarter

Project #: **697-080-001**

Project Manager:
Lesli Alexander/Mackensie Swift

Sampler:

On Ice: ☐ Yes ☐ No

# of Coolers: 3.8 - 0.0 = 3.8°c

Cooler Temp(including CF): 2.4 - 0 = 2.4

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

e	Time	Matrix	Sample Name (DAD 9/9/22)	Container Type and #	Preservative Type	HEAL No. 2209441	See Analyte List	8260B: VOC	8270C: SVOC	8270C SIM: PAH, 1,4 Dioxane	8015: TPH GRO/DRO/MRO	E200.7: Metals	E200.7: Dissolved Metals	E245.1 Mercury	E504.1: EDB	E335.4: Cyanide Subbed		537.1: PFAS	SM 5201B: BOD	410.4: COD	SM9223B E Coli
9/8	8:35		EB-09-07-22	12		-001	X	X	X	X	X	X	X	X	X	X					
9/8	9:10		PW-3-08	12		-002	X	X	X	X	X	X	X	X	X	X					
9/8	9:40		PW-4	12		-003	X	X	X	X	X	X	X	X	X	X					
9/8	10:05		EAST LDU	12		-004	X	X	X	X	X	X	X	X	X	X					
9/8	10:30		WEST LDU	12		-005	X	X	X	X	X	X	X	X	X	X					
9/8	—		DUP-9-8-22	12		-006	X	X	X	X	X	X	X	X	X	X					
9/8	10:30		FB-9-8-22	3		-007	X	X	X												
9/8	—		Trip Blank	4		-008	X	X	X												

	Time:	Relinquished by:	Received by:	Via:	Date	Time
9/8	11:30	Hilario Trejo		Courier	9/9/22	15:25
	Time:	Relinquished by:	Received by:	Via:	Date	Time

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 07, 2022

Lesli Alexander

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX (505) 632-3911

RE: 2022 GW Sampling 3rd Quarter OrderNo.: 2209478

Dear Lesli Alexander:

Hall Environmental Analysis Laboratory received 6 sample(s) on 9/9/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **2209478**
Date: **10/7/2022**

CLIENT: Marathon
Project: 2022 GW Sampling 3rd Quarter

Analytical Notes Regarding this Workorder are listed below:

"S" flagged surrogates denote that the surrogate recovery was outstide of the standard limits.

Analytical Notes Regarding EPA Method 8270SIMS:
The recovery for chyrsene was low in the LCS/LCSD. This compound is reported in both the 8270SIM method and the standard 8270 method and is nondetect.
The recovery for 1,4-Dioxane was low in the LCSD.

Analytical Notes Regarding EPA Method 8270:
Samples "STP-1 to EP-2, EP-2 and Dup 9/9/22" were diluted due the the sample matrix.

Analytical Notes Regarding EPA Method 8015DRO:
The LCS/LCSD had elevated recoveries.

Analytical Report
Lab Order: **2209478**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-9-9-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/9/2022 8:30:00 AM
Lab ID: 2209478-001A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	9/16/2022 3:13:00 PM	A91113
Surr: BFB	101	0	70-130		%Rec	1	9/16/2022 3:13:00 PM	A91113
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	9/13/2022 6:29:00 PM	R90977
Toluene	ND	0.20	1.0		µg/L	1	9/13/2022 6:29:00 PM	R90977
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/13/2022 6:29:00 PM	R90977
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/13/2022 6:29:00 PM	R90977
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/13/2022 6:29:00 PM	R90977
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 6:29:00 PM	R90977
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/13/2022 6:29:00 PM	R90977
Acetone	8.7	2.5	10	J	µg/L	1	9/13/2022 6:29:00 PM	R90977
Bromomethane	ND	0.85	3.0		µg/L	1	9/13/2022 6:29:00 PM	R90977
2-Butanone	ND	2.0	10		µg/L	1	9/13/2022 6:29:00 PM	R90977
Carbon disulfide	ND	0.59	10		µg/L	1	9/13/2022 6:29:00 PM	R90977
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/13/2022 6:29:00 PM	R90977
Chloroform	ND	0.13	1.0		µg/L	1	9/13/2022 6:29:00 PM	R90977
Chloromethane	ND	0.41	3.0		µg/L	1	9/13/2022 6:29:00 PM	R90977
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/13/2022 6:29:00 PM	R90977
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/13/2022 6:29:00 PM	R90977
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/13/2022 6:29:00 PM	R90977
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 6:29:00 PM	R90977
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/13/2022 6:29:00 PM	R90977
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/13/2022 6:29:00 PM	R90977
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/13/2022 6:29:00 PM	R90977
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 6:29:00 PM	R90977
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/13/2022 6:29:00 PM	R90977
Styrene	ND	0.14	1.0		µg/L	1	9/13/2022 6:29:00 PM	R90977
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/13/2022 6:29:00 PM	R90977
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/13/2022 6:29:00 PM	R90977
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/13/2022 6:29:00 PM	R90977
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/13/2022 6:29:00 PM	R90977
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/13/2022 6:29:00 PM	R90977
Surr: 1,2-Dichloroethane-d4	107	0	70-130		%Rec	1	9/13/2022 6:29:00 PM	R90977
Surr: 4-Bromofluorobenzene	90.5	0	70-130		%Rec	1	9/13/2022 6:29:00 PM	R90977
Surr: Dibromofluoromethane	104	0	70-130		%Rec	1	9/13/2022 6:29:00 PM	R90977
Surr: Toluene-d8	90.3	0	70-130		%Rec	1	9/13/2022 6:29:00 PM	R90977

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209478**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-9-9-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/9/2022 8:30:00 AM
Lab ID: 2209478-001B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0093		µg/L	1	9/15/2022 5:41:57 PM	70173

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209478**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-9-9-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/9/2022 8:30:00 AM
Lab ID: 2209478-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.043	0.016	0.064	JE	mg/L	1	9/13/2022 10:00:23 PM	70105
Motor Oil Range Organics (MRO)	ND	0.052	0.080	E	mg/L	1	9/13/2022 10:00:23 PM	70105
Surr: DNOP	106	0	42.2-138		%Rec	1	9/13/2022 10:00:23 PM	70105
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	9/14/2022 6:29:22 PM	70094
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/14/2022 6:29:22 PM	70094
Chrysene	ND	5.3	10		µg/L	1	9/14/2022 6:29:22 PM	70094
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	9/14/2022 6:29:22 PM	70094
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/14/2022 6:29:22 PM	70094
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/14/2022 6:29:22 PM	70094
Diethyl phthalate	ND	6.0	10		µg/L	1	9/14/2022 6:29:22 PM	70094
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/14/2022 6:29:22 PM	70094
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	9/14/2022 6:29:22 PM	70094
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/14/2022 6:29:22 PM	70094
2-Methylphenol	ND	5.0	10		µg/L	1	9/14/2022 6:29:22 PM	70094
3+4-Methylphenol	ND	5.1	10		µg/L	1	9/14/2022 6:29:22 PM	70094
Phenol	ND	18	20		µg/L	1	9/14/2022 6:29:22 PM	70094
Pyridine	ND	14	40		µg/L	1	9/14/2022 6:29:22 PM	70094
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/14/2022 6:29:22 PM	70094
Surr: 2-Fluorophenol	42.1	0	15-84.5		%Rec	1	9/14/2022 6:29:22 PM	70094
Surr: Phenol-d5	31.5	0	15-67		%Rec	1	9/14/2022 6:29:22 PM	70094
Surr: 2,4,6-Tribromophenol	51.1	0	15-108		%Rec	1	9/14/2022 6:29:22 PM	70094
Surr: Nitrobenzene-d5	56.6	0	16.8-112		%Rec	1	9/14/2022 6:29:22 PM	70094
Surr: 2-Fluorobiphenyl	54.8	0	15-101		%Rec	1	9/14/2022 6:29:22 PM	70094
Surr: 4-Terphenyl-d14	73.9	0	34.4-134		%Rec	1	9/14/2022 6:29:22 PM	70094
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	ND	0.11	1.0	E	µg/L	1	9/13/2022 5:10:00 PM	70094
Naphthalene	ND	0.20	0.30		µg/L	1	9/13/2022 5:10:00 PM	70094
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	9/13/2022 5:10:00 PM	70094
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	9/13/2022 5:10:00 PM	70094
Acenaphthene	ND	0.14	0.30		µg/L	1	9/13/2022 5:10:00 PM	70094
Fluorene	ND	0.095	0.30		µg/L	1	9/13/2022 5:10:00 PM	70094
Phenanthrene	ND	0.16	0.30		µg/L	1	9/13/2022 5:10:00 PM	70094
Anthracene	ND	0.14	0.30		µg/L	1	9/13/2022 5:10:00 PM	70094
Fluoranthene	ND	0.14	0.30		µg/L	1	9/13/2022 5:10:00 PM	70094
Pyrene	ND	0.32	1.0		µg/L	1	9/13/2022 5:10:00 PM	70094
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/13/2022 5:10:00 PM	70094
Chrysene	ND	0.25	0.30	E	µg/L	1	9/13/2022 5:10:00 PM	70094
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/13/2022 5:10:00 PM	70094

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209478**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-9-9-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/9/2022 8:30:00 AM
Lab ID: 2209478-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/13/2022 5:10:00 PM	70094
Surr: Nitrobenzene-d5	51.7	0	31.6-100		%Rec	1	9/13/2022 5:10:00 PM	70094
Surr: 2-Fluorobiphenyl	48.2	0	26.7-90.1		%Rec	1	9/13/2022 5:10:00 PM	70094
Surr: 4-Terphenyl-d14	65.1	0	72.3-147	S	%Rec	1	9/13/2022 5:10:00 PM	70094

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209478**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-9-9-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/9/2022 8:30:00 AM
Lab ID: 2209478-001D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	ND	0.0016	0.0030		mg/L	1	9/13/2022 12:39:18 PM	70092
Beryllium	ND	0.00088	0.0020		mg/L	1	9/13/2022 12:39:18 PM	70092
Cadmium	ND	0.0018	0.0020		mg/L	1	9/13/2022 12:39:18 PM	70092
Chromium	ND	0.0020	0.0060		mg/L	1	9/13/2022 12:39:18 PM	70092
Cobalt	ND	0.0035	0.0060		mg/L	1	9/13/2022 12:39:18 PM	70092
Nickel	ND	0.0053	0.010		mg/L	1	9/13/2022 12:39:18 PM	70092
Silver	ND	0.0018	0.0050		mg/L	1	9/13/2022 12:39:18 PM	70092
Vanadium	ND	0.0035	0.050		mg/L	1	9/13/2022 12:39:18 PM	70092
Zinc	ND	0.0039	0.010		mg/L	1	9/13/2022 12:39:18 PM	70092
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/14/2022 4:19:40 PM	70092
Arsenic	ND	0.00013	0.0010		mg/L	1	9/14/2022 4:19:40 PM	70092
Lead	ND	0.000061	0.00050		mg/L	1	9/14/2022 4:19:40 PM	70092
Selenium	ND	0.00037	0.0010		mg/L	1	9/14/2022 4:19:40 PM	70092
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00019	0.000091	0.00020	J	mg/L	1	9/17/2022 12:12:59 PM	70232

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209478**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-9-9-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/9/2022 8:30:00 AM
Lab ID: 2209478-001E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	ND	0.0011	0.0020		mg/L	1	9/19/2022 4:11:26 PM	B91139
Beryllium	ND	0.00088	0.0020		mg/L	1	9/19/2022 4:11:26 PM	B91139
Cadmium	ND	0.00098	0.0020		mg/L	1	9/19/2022 4:11:26 PM	B91139
Chromium	ND	0.0020	0.0060		mg/L	1	9/19/2022 4:11:26 PM	B91139
Cobalt	ND	0.0024	0.0060		mg/L	1	9/19/2022 4:11:26 PM	B91139
Nickel	ND	0.0033	0.010		mg/L	1	9/19/2022 4:11:26 PM	B91139
Silver	ND	0.0013	0.0050		mg/L	1	9/19/2022 4:11:26 PM	B91139
Vanadium	0.0019	0.0017	0.050	J	mg/L	1	9/19/2022 4:11:26 PM	B91139
Zinc	0.0065	0.0032	0.010	J	mg/L	1	9/19/2022 4:11:26 PM	B91139
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/13/2022 2:51:28 PM	B91030
Arsenic	ND	0.00012	0.0010		mg/L	1	9/13/2022 2:51:28 PM	B91030
Lead	ND	0.000057	0.00050		mg/L	1	9/13/2022 2:51:28 PM	B91030
Selenium	ND	0.00034	0.0010		mg/L	1	9/13/2022 4:50:44 PM	B91030
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00018	0.000091	0.00020	J	mg/L	1	9/17/2022 12:15:07 PM	70232

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209478**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-9-9-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/9/2022 8:30:00 AM
Lab ID: 2209478-001G
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
SM 9223B FECAL INDICATOR: E. COLI MPN							Analyst: **dms**	
E. Coli	<1	1.000	1.000	H	MPN/100	1	9/10/2022 7:30:00 PM	70088

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209478**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-9-9-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/9/2022 8:30:00 AM
Lab ID: 2209478-001H
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
SM5210B: BOD							Analyst: **dms**	
Biochemical Oxygen Demand	DO Depletion<2.0	2.0	2.0		mg/L	1	9/14/2022 2:46:00 PM	70067

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209478**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1 to EP-2
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/9/2022 10:00:00 AM
Lab ID: 2209478-002A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	9/16/2022 3:32:00 PM	A91113
Surr: BFB	98.5	0	70-130		%Rec	1	9/16/2022 3:32:00 PM	A91113
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	9/13/2022 6:52:00 PM	R90977
Toluene	ND	0.20	1.0		µg/L	1	9/13/2022 6:52:00 PM	R90977
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/13/2022 6:52:00 PM	R90977
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/13/2022 6:52:00 PM	R90977
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/13/2022 6:52:00 PM	R90977
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 6:52:00 PM	R90977
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/13/2022 6:52:00 PM	R90977
Acetone	8.7	2.5	10	J	µg/L	1	9/13/2022 6:52:00 PM	R90977
Bromomethane	ND	0.85	3.0		µg/L	1	9/13/2022 6:52:00 PM	R90977
2-Butanone	ND	2.0	10		µg/L	1	9/13/2022 6:52:00 PM	R90977
Carbon disulfide	ND	0.59	10		µg/L	1	9/13/2022 6:52:00 PM	R90977
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/13/2022 6:52:00 PM	R90977
Chloroform	ND	0.13	1.0		µg/L	1	9/13/2022 6:52:00 PM	R90977
Chloromethane	ND	0.41	3.0		µg/L	1	9/13/2022 6:52:00 PM	R90977
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/13/2022 6:52:00 PM	R90977
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/13/2022 6:52:00 PM	R90977
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/13/2022 6:52:00 PM	R90977
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 6:52:00 PM	R90977
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/13/2022 6:52:00 PM	R90977
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/13/2022 6:52:00 PM	R90977
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/13/2022 6:52:00 PM	R90977
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 6:52:00 PM	R90977
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/13/2022 6:52:00 PM	R90977
Styrene	ND	0.14	1.0		µg/L	1	9/13/2022 6:52:00 PM	R90977
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/13/2022 6:52:00 PM	R90977
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/13/2022 6:52:00 PM	R90977
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/13/2022 6:52:00 PM	R90977
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/13/2022 6:52:00 PM	R90977
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/13/2022 6:52:00 PM	R90977
Surr: 1,2-Dichloroethane-d4	103	0	70-130		%Rec	1	9/13/2022 6:52:00 PM	R90977
Surr: 4-Bromofluorobenzene	90.8	0	70-130		%Rec	1	9/13/2022 6:52:00 PM	R90977
Surr: Dibromofluoromethane	102	0	70-130		%Rec	1	9/13/2022 6:52:00 PM	R90977
Surr: Toluene-d8	90.9	0	70-130		%Rec	1	9/13/2022 6:52:00 PM	R90977

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209478**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1 to EP-2
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/9/2022 10:00:00 AM
Lab ID: 2209478-002B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	9/15/2022 6:42:40 PM	70173

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209478**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1 to EP-2
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/9/2022 10:00:00 AM
Lab ID: 2209478-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.18	0.016	0.064	E	mg/L	1	9/19/2022 3:48:13 PM	70105
Motor Oil Range Organics (MRO)	0.11	0.052	0.080	E	mg/L	1	9/19/2022 3:48:13 PM	70105
Surr: DNOP	48.3	0	42.2-138		%Rec	1	9/19/2022 3:48:13 PM	70105
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	180	200	D	µg/L	10	9/14/2022 7:11:31 PM	70094
Bis(2-ethylhexyl)phthalate	ND	84	100	D	µg/L	10	9/14/2022 7:11:31 PM	70094
Chrysene	ND	53	100	D	µg/L	10	9/14/2022 7:11:31 PM	70094
Di-n-butyl phthalate	ND	77	100	D	µg/L	10	9/14/2022 7:11:31 PM	70094
Di-n-octyl phthalate	ND	120	200	D	µg/L	10	9/14/2022 7:11:31 PM	70094
1,4-Dichlorobenzene	ND	24	50	D	µg/L	10	9/14/2022 7:11:31 PM	70094
Diethyl phthalate	ND	60	100	D	µg/L	10	9/14/2022 7:11:31 PM	70094
Dimethyl phthalate	ND	60	100	D	µg/L	10	9/14/2022 7:11:31 PM	70094
2,4-Dimethylphenol	ND	58	100	D	µg/L	10	9/14/2022 7:11:31 PM	70094
2,4-Dinitrophenol	ND	160	200	D	µg/L	10	9/14/2022 7:11:31 PM	70094
2-Methylphenol	ND	50	100	D	µg/L	10	9/14/2022 7:11:31 PM	70094
3+4-Methylphenol	ND	51	100	D	µg/L	10	9/14/2022 7:11:31 PM	70094
Phenol	ND	180	200	D	µg/L	10	9/14/2022 7:11:31 PM	70094
Pyridine	ND	140	400	D	µg/L	10	9/14/2022 7:11:31 PM	70094
2,4,6-Trichlorophenol	ND	59	100	D	µg/L	10	9/14/2022 7:11:31 PM	70094
Surr: 2-Fluorophenol	0	0	15-84.5	SD	%Rec	10	9/14/2022 7:11:31 PM	70094
Surr: Phenol-d5	0	0	15-67	SD	%Rec	10	9/14/2022 7:11:31 PM	70094
Surr: 2,4,6-Tribromophenol	0	0	15-108	SD	%Rec	10	9/14/2022 7:11:31 PM	70094
Surr: Nitrobenzene-d5	0	0	16.8-112	SD	%Rec	10	9/14/2022 7:11:31 PM	70094
Surr: 2-Fluorobiphenyl	0	0	15-101	SD	%Rec	10	9/14/2022 7:11:31 PM	70094
Surr: 4-Terphenyl-d14	0	0	34.4-134	SD	%Rec	10	9/14/2022 7:11:31 PM	70094
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	ND	1.1	10	ED	µg/L	10	9/13/2022 5:55:00 PM	70094
Naphthalene	ND	2.0	3.0	D	µg/L	10	9/13/2022 5:55:00 PM	70094
1-Methylnaphthalene	ND	1.5	3.0	D	µg/L	10	9/13/2022 5:55:00 PM	70094
2-Methylnaphthalene	ND	1.4	3.0	D	µg/L	10	9/13/2022 5:55:00 PM	70094
Acenaphthene	ND	1.4	3.0	D	µg/L	10	9/13/2022 5:55:00 PM	70094
Fluorene	ND	0.95	3.0	D	µg/L	10	9/13/2022 5:55:00 PM	70094
Phenanthrene	ND	1.6	3.0	D	µg/L	10	9/13/2022 5:55:00 PM	70094
Anthracene	ND	1.4	3.0	D	µg/L	10	9/13/2022 5:55:00 PM	70094
Fluoranthene	ND	1.4	3.0	D	µg/L	10	9/13/2022 5:55:00 PM	70094
Pyrene	ND	3.2	10	D	µg/L	10	9/13/2022 5:55:00 PM	70094
Benz(a)anthracene	ND	1.5	3.0	D	µg/L	10	9/13/2022 5:55:00 PM	70094
Chrysene	ND	2.5	3.0	ED	µg/L	10	9/13/2022 5:55:00 PM	70094
Benzo(b)fluoranthene	ND	1.4	3.0	D	µg/L	10	9/13/2022 5:55:00 PM	70094

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Estimated value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference

Analytical Report
Lab Order: **2209478**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1 to EP-2
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/9/2022 10:00:00 AM
Lab ID: 2209478-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Indeno(1,2,3-cd)pyrene	ND	2.3	3.0	D	µg/L	10	9/13/2022 5:55:00 PM	70094
Surr: Nitrobenzene-d5	0	0	31.6-100	SD	%Rec	10	9/13/2022 5:55:00 PM	70094
Surr: 2-Fluorobiphenyl	0	0	26.7-90.1	SD	%Rec	10	9/13/2022 5:55:00 PM	70094
Surr: 4-Terphenyl-d14	0	0	72.3-147	SD	%Rec	10	9/13/2022 5:55:00 PM	70094

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209478**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1 to EP-2
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/9/2022 10:00:00 AM
Lab ID: 2209478-002D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.032	0.0016	0.0030		mg/L	1	9/13/2022 12:42:37 PM	70092
Beryllium	ND	0.00088	0.0020		mg/L	1	9/13/2022 12:42:37 PM	70092
Cadmium	ND	0.0018	0.0020		mg/L	1	9/13/2022 12:42:37 PM	70092
Chromium	ND	0.0020	0.0060		mg/L	1	9/13/2022 12:42:37 PM	70092
Cobalt	0.013	0.0035	0.0060		mg/L	1	9/13/2022 12:42:37 PM	70092
Nickel	ND	0.0053	0.010		mg/L	1	9/13/2022 12:42:37 PM	70092
Silver	0.0022	0.0018	0.0050	J	mg/L	1	9/13/2022 12:42:37 PM	70092
Vanadium	ND	0.0035	0.050		mg/L	1	9/13/2022 12:42:37 PM	70092
Zinc	0.022	0.0039	0.010		mg/L	1	9/13/2022 12:42:37 PM	70092
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/14/2022 4:22:07 PM	70092
Arsenic	0.0025	0.00013	0.0010		mg/L	1	9/14/2022 4:22:07 PM	70092
Lead	0.00015	0.000061	0.00050	J	mg/L	1	9/14/2022 4:22:07 PM	70092
Selenium	0.0011	0.00037	0.0010		mg/L	1	9/14/2022 4:22:07 PM	70092
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00022	0.000091	0.00020		mg/L	1	9/17/2022 12:17:16 PM	70232

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209478**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1 to EP-2
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/9/2022 10:00:00 AM
Lab ID: 2209478-002E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.024	0.0011	0.0020		mg/L	1	9/19/2022 4:24:25 PM	B91139
Beryllium	ND	0.00088	0.0020		mg/L	1	9/19/2022 4:24:25 PM	B91139
Cadmium	ND	0.00098	0.0020		mg/L	1	9/19/2022 4:24:25 PM	B91139
Chromium	ND	0.0020	0.0060		mg/L	1	9/19/2022 4:24:25 PM	B91139
Cobalt	ND	0.0024	0.0060		mg/L	1	9/19/2022 4:24:25 PM	B91139
Nickel	ND	0.0033	0.010		mg/L	1	9/19/2022 4:24:25 PM	B91139
Silver	0.0051	0.0013	0.0050		mg/L	1	9/19/2022 4:24:25 PM	B91139
Vanadium	0.0043	0.0017	0.050	J	mg/L	1	9/19/2022 4:24:25 PM	B91139
Zinc	0.032	0.0032	0.010		mg/L	1	9/19/2022 4:24:25 PM	B91139
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	0.00065	0.00044	0.0010	J	mg/L	1	9/13/2022 2:54:09 PM	B91030
Arsenic	0.0021	0.00012	0.0010		mg/L	1	9/13/2022 2:54:09 PM	B91030
Lead	ND	0.000057	0.00050		mg/L	1	9/13/2022 2:54:09 PM	B91030
Selenium	0.0011	0.00034	0.0010		mg/L	1	9/13/2022 4:53:25 PM	B91030
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00018	0.000091	0.00020	J	mg/L	1	9/17/2022 12:19:24 PM	70232

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209478**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1 to EP-2
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/9/2022 10:00:00 AM
Lab ID: 2209478-002G
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
SM 9223B FECAL INDICATOR: E. COLI MPN							Analyst: **dms**	
E. Coli	>24196	10.00	10.00		MPN/100	10	9/10/2022 7:30:00 PM	70088

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209478**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1 to EP-2
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/9/2022 10:00:00 AM
Lab ID: 2209478-002H
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
SM5210B: BOD							Analyst: **dms**	
Biochemical Oxygen Demand	>67.56	2.0	2.0	E	mg/L	1	9/14/2022 2:46:00 PM	70067

NOTES:
E- Estimated value due to all bottles having overdepleted.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209478**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EP-2
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/9/2022 10:35:00 AM
Lab ID: 2209478-003A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.0094	0.0090	0.050	J	mg/L	1	9/16/2022 3:52:00 PM	A91113
Surr: BFB	105	0	70-130		%Rec	1	9/16/2022 3:52:00 PM	A91113
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	9/13/2022 7:15:00 PM	R90977
Toluene	ND	0.20	1.0		µg/L	1	9/13/2022 7:15:00 PM	R90977
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/13/2022 7:15:00 PM	R90977
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/13/2022 7:15:00 PM	R90977
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/13/2022 7:15:00 PM	R90977
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 7:15:00 PM	R90977
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/13/2022 7:15:00 PM	R90977
Acetone	15	2.5	10		µg/L	1	9/13/2022 7:15:00 PM	R90977
Bromomethane	ND	0.85	3.0		µg/L	1	9/13/2022 7:15:00 PM	R90977
2-Butanone	ND	2.0	10		µg/L	1	9/13/2022 7:15:00 PM	R90977
Carbon disulfide	2.2	0.59	10	J	µg/L	1	9/13/2022 7:15:00 PM	R90977
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/13/2022 7:15:00 PM	R90977
Chloroform	ND	0.13	1.0		µg/L	1	9/13/2022 7:15:00 PM	R90977
Chloromethane	ND	0.41	3.0		µg/L	1	9/13/2022 7:15:00 PM	R90977
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/13/2022 7:15:00 PM	R90977
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/13/2022 7:15:00 PM	R90977
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/13/2022 7:15:00 PM	R90977
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 7:15:00 PM	R90977
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/13/2022 7:15:00 PM	R90977
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/13/2022 7:15:00 PM	R90977
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/13/2022 7:15:00 PM	R90977
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 7:15:00 PM	R90977
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/13/2022 7:15:00 PM	R90977
Styrene	ND	0.14	1.0		µg/L	1	9/13/2022 7:15:00 PM	R90977
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/13/2022 7:15:00 PM	R90977
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/13/2022 7:15:00 PM	R90977
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/13/2022 7:15:00 PM	R90977
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/13/2022 7:15:00 PM	R90977
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/13/2022 7:15:00 PM	R90977
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%Rec	1	9/13/2022 7:15:00 PM	R90977
Surr: 4-Bromofluorobenzene	91.4	0	70-130		%Rec	1	9/13/2022 7:15:00 PM	R90977
Surr: Dibromofluoromethane	101	0	70-130		%Rec	1	9/13/2022 7:15:00 PM	R90977
Surr: Toluene-d8	93.3	0	70-130		%Rec	1	9/13/2022 7:15:00 PM	R90977

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209478**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EP-2
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/9/2022 10:35:00 AM
Lab ID: 2209478-003B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	9/15/2022 7:58:43 PM	70173

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209478**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EP-2
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/9/2022 10:35:00 AM
Lab ID: 2209478-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.28	0.016	0.064	E	mg/L	1	9/21/2022 8:44:33 AM	70105
Motor Oil Range Organics (MRO)	0.11	0.052	0.080	E	mg/L	1	9/21/2022 8:44:33 AM	70105
Surr: DNOP	47.3	0	42.2-138		%Rec	1	9/21/2022 8:44:33 AM	70105
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	180	200	D	µg/L	10	9/14/2022 7:53:43 PM	70094
Bis(2-ethylhexyl)phthalate	ND	84	100	D	µg/L	10	9/14/2022 7:53:43 PM	70094
Chrysene	ND	53	100	D	µg/L	10	9/14/2022 7:53:43 PM	70094
Di-n-butyl phthalate	ND	77	100	D	µg/L	10	9/14/2022 7:53:43 PM	70094
Di-n-octyl phthalate	ND	120	200	D	µg/L	10	9/14/2022 7:53:43 PM	70094
1,4-Dichlorobenzene	ND	24	50	D	µg/L	10	9/14/2022 7:53:43 PM	70094
Diethyl phthalate	ND	60	100	D	µg/L	10	9/14/2022 7:53:43 PM	70094
Dimethyl phthalate	ND	60	100	D	µg/L	10	9/14/2022 7:53:43 PM	70094
2,4-Dimethylphenol	ND	58	100	D	µg/L	10	9/14/2022 7:53:43 PM	70094
2,4-Dinitrophenol	ND	160	200	D	µg/L	10	9/14/2022 7:53:43 PM	70094
2-Methylphenol	ND	50	100	D	µg/L	10	9/14/2022 7:53:43 PM	70094
3+4-Methylphenol	ND	51	100	D	µg/L	10	9/14/2022 7:53:43 PM	70094
Phenol	ND	180	200	D	µg/L	10	9/14/2022 7:53:43 PM	70094
Pyridine	ND	140	400	D	µg/L	10	9/14/2022 7:53:43 PM	70094
2,4,6-Trichlorophenol	ND	59	100	D	µg/L	10	9/14/2022 7:53:43 PM	70094
Surr: 2-Fluorophenol	0	0	15-84.5	SD	%Rec	10	9/14/2022 7:53:43 PM	70094
Surr: Phenol-d5	0	0	15-67	SD	%Rec	10	9/14/2022 7:53:43 PM	70094
Surr: 2,4,6-Tribromophenol	0	0	15-108	SD	%Rec	10	9/14/2022 7:53:43 PM	70094
Surr: Nitrobenzene-d5	0	0	16.8-112	SD	%Rec	10	9/14/2022 7:53:43 PM	70094
Surr: 2-Fluorobiphenyl	0	0	15-101	SD	%Rec	10	9/14/2022 7:53:43 PM	70094
Surr: 4-Terphenyl-d14	0	0	34.4-134	SD	%Rec	10	9/14/2022 7:53:43 PM	70094
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	ND	1.1	10	ED	µg/L	10	9/13/2022 6:42:00 PM	70094
Naphthalene	ND	2.0	3.0	D	µg/L	10	9/13/2022 6:42:00 PM	70094
1-Methylnaphthalene	ND	1.5	3.0	D	µg/L	10	9/13/2022 6:42:00 PM	70094
2-Methylnaphthalene	ND	1.4	3.0	D	µg/L	10	9/13/2022 6:42:00 PM	70094
Acenaphthene	ND	1.4	3.0	D	µg/L	10	9/13/2022 6:42:00 PM	70094
Fluorene	ND	0.95	3.0	D	µg/L	10	9/13/2022 6:42:00 PM	70094
Phenanthrene	ND	1.6	3.0	D	µg/L	10	9/13/2022 6:42:00 PM	70094
Anthracene	ND	1.4	3.0	D	µg/L	10	9/13/2022 6:42:00 PM	70094
Fluoranthene	ND	1.4	3.0	D	µg/L	10	9/13/2022 6:42:00 PM	70094
Pyrene	ND	3.2	10	D	µg/L	10	9/13/2022 6:42:00 PM	70094
Benz(a)anthracene	ND	1.5	3.0	D	µg/L	10	9/13/2022 6:42:00 PM	70094
Chrysene	ND	2.5	3.0	ED	µg/L	10	9/13/2022 6:42:00 PM	70094
Benzo(b)fluoranthene	ND	1.4	3.0	D	µg/L	10	9/13/2022 6:42:00 PM	70094

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209478**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EP-2
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/9/2022 10:35:00 AM
Lab ID: 2209478-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Indeno(1,2,3-cd)pyrene	ND	2.3	3.0	D	µg/L	10	9/13/2022 6:42:00 PM	70094
Surr: Nitrobenzene-d5	0	0	31.6-100	SD	%Rec	10	9/13/2022 6:42:00 PM	70094
Surr: 2-Fluorobiphenyl	0	0	26.7-90.1	SD	%Rec	10	9/13/2022 6:42:00 PM	70094
Surr: 4-Terphenyl-d14	0	0	72.3-147	SD	%Rec	10	9/13/2022 6:42:00 PM	70094

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209478**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EP-2
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/9/2022 10:35:00 AM
Lab ID: 2209478-003D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.15	0.0016	0.0030		mg/L	1	9/13/2022 12:45:56 PM	70092
Beryllium	ND	0.00088	0.0020		mg/L	1	9/13/2022 12:45:56 PM	70092
Cadmium	ND	0.0018	0.0020		mg/L	1	9/13/2022 12:45:56 PM	70092
Chromium	ND	0.0020	0.0060		mg/L	1	9/13/2022 12:45:56 PM	70092
Cobalt	0.018	0.0035	0.0060		mg/L	1	9/13/2022 12:45:56 PM	70092
Nickel	0.037	0.0053	0.010		mg/L	1	9/13/2022 12:45:56 PM	70092
Silver	0.0042	0.0018	0.0050	J	mg/L	1	9/13/2022 12:45:56 PM	70092
Vanadium	ND	0.0035	0.050		mg/L	1	9/13/2022 12:45:56 PM	70092
Zinc	ND	0.0039	0.010		mg/L	1	9/13/2022 12:45:56 PM	70092
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	0.0018	0.00044	0.0010		mg/L	1	9/14/2022 4:24:33 PM	70092
Arsenic	0.011	0.00013	0.0010	*	mg/L	1	9/14/2022 4:24:33 PM	70092
Lead	ND	0.000061	0.00050		mg/L	1	9/14/2022 4:24:33 PM	70092
Selenium	0.0011	0.00037	0.0010		mg/L	1	9/14/2022 4:24:33 PM	70092
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00015	0.000091	0.00020	J	mg/L	1	9/17/2022 12:21:32 PM	70232

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209478**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EP-2
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/9/2022 10:35:00 AM
Lab ID: 2209478-003E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.14	0.0011	0.0020		mg/L	1	9/19/2022 4:28:50 PM	B91139
Beryllium	ND	0.00088	0.0020		mg/L	1	9/19/2022 4:28:50 PM	B91139
Cadmium	ND	0.00098	0.0020		mg/L	1	9/19/2022 4:28:50 PM	B91139
Chromium	ND	0.0020	0.0060		mg/L	1	9/19/2022 4:28:50 PM	B91139
Cobalt	ND	0.0024	0.0060		mg/L	1	9/19/2022 4:28:50 PM	B91139
Nickel	0.038	0.0033	0.010		mg/L	1	9/19/2022 4:28:50 PM	B91139
Silver	0.010	0.0013	0.0050		mg/L	1	9/19/2022 4:28:50 PM	B91139
Vanadium	0.0068	0.0017	0.050	J	mg/L	1	9/19/2022 4:28:50 PM	B91139
Zinc	0.0059	0.0032	0.010	J	mg/L	1	9/19/2022 4:28:50 PM	B91139
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	0.0017	0.00044	0.0010		mg/L	1	9/13/2022 2:56:51 PM	B91030
Arsenic	0.010	0.00012	0.0010	*	mg/L	1	9/13/2022 2:56:51 PM	B91030
Lead	ND	0.000057	0.00050		mg/L	1	9/13/2022 2:56:51 PM	B91030
Selenium	0.0016	0.00034	0.0010		mg/L	1	9/13/2022 4:56:07 PM	B91030
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00015	0.000091	0.00020	J	mg/L	1	9/17/2022 12:27:58 PM	70232

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209478**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EP-2
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/9/2022 10:35:00 AM
Lab ID: 2209478-003G
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
SM 9223B FECAL INDICATOR: E. COLI MPN							Analyst: **dms**	
E. Coli	52	10.00	10.00		MPN/100	10	9/10/2022 7:30:00 PM	70088

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209478**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EP-2
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/9/2022 10:35:00 AM
Lab ID: 2209478-003H
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
SM5210B: BOD							Analyst: **dms**	
Biochemical Oxygen Demand	46	2.0	2.0	R	mg/L	1	9/14/2022 2:46:00 PM	70067

NOTES:
R- RPD between bottles >30%

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209478**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB-9-9-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/9/2022 10:35:00 AM
Lab ID: 2209478-004A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	9/13/2022 7:38:00 PM	R90977
Toluene	ND	0.20	1.0		µg/L	1	9/13/2022 7:38:00 PM	R90977
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/13/2022 7:38:00 PM	R90977
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/13/2022 7:38:00 PM	R90977
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/13/2022 7:38:00 PM	R90977
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 7:38:00 PM	R90977
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/13/2022 7:38:00 PM	R90977
Acetone	ND	2.5	10		µg/L	1	9/13/2022 7:38:00 PM	R90977
Bromomethane	ND	0.85	3.0		µg/L	1	9/13/2022 7:38:00 PM	R90977
2-Butanone	ND	2.0	10		µg/L	1	9/13/2022 7:38:00 PM	R90977
Carbon disulfide	ND	0.59	10		µg/L	1	9/13/2022 7:38:00 PM	R90977
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/13/2022 7:38:00 PM	R90977
Chloroform	ND	0.13	1.0		µg/L	1	9/13/2022 7:38:00 PM	R90977
Chloromethane	ND	0.41	3.0		µg/L	1	9/13/2022 7:38:00 PM	R90977
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/13/2022 7:38:00 PM	R90977
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/13/2022 7:38:00 PM	R90977
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/13/2022 7:38:00 PM	R90977
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 7:38:00 PM	R90977
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/13/2022 7:38:00 PM	R90977
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/13/2022 7:38:00 PM	R90977
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/13/2022 7:38:00 PM	R90977
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 7:38:00 PM	R90977
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/13/2022 7:38:00 PM	R90977
Styrene	ND	0.14	1.0		µg/L	1	9/13/2022 7:38:00 PM	R90977
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/13/2022 7:38:00 PM	R90977
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/13/2022 7:38:00 PM	R90977
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/13/2022 7:38:00 PM	R90977
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/13/2022 7:38:00 PM	R90977
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/13/2022 7:38:00 PM	R90977
Surr: 1,2-Dichloroethane-d4	104	0	70-130		%Rec	1	9/13/2022 7:38:00 PM	R90977
Surr: 4-Bromofluorobenzene	90.4	0	70-130		%Rec	1	9/13/2022 7:38:00 PM	R90977
Surr: Dibromofluoromethane	103	0	70-130		%Rec	1	9/13/2022 7:38:00 PM	R90977
Surr: Toluene-d8	89.0	0	70-130		%Rec	1	9/13/2022 7:38:00 PM	R90977

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209478**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 9-9-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/9/2022
Lab ID: 2209478-005A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	9/16/2022 6:29:00 PM	B91113
Surr: BFB	103	0	70-130		%Rec	1	9/16/2022 6:29:00 PM	B91113
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	9/13/2022 8:01:00 PM	R90977
Toluene	ND	0.20	1.0		µg/L	1	9/13/2022 8:01:00 PM	R90977
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/13/2022 8:01:00 PM	R90977
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/13/2022 8:01:00 PM	R90977
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/13/2022 8:01:00 PM	R90977
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 8:01:00 PM	R90977
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/13/2022 8:01:00 PM	R90977
Acetone	7.0	2.5	10	J	µg/L	1	9/13/2022 8:01:00 PM	R90977
Bromomethane	ND	0.85	3.0		µg/L	1	9/13/2022 8:01:00 PM	R90977
2-Butanone	ND	2.0	10		µg/L	1	9/13/2022 8:01:00 PM	R90977
Carbon disulfide	ND	0.59	10		µg/L	1	9/13/2022 8:01:00 PM	R90977
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/13/2022 8:01:00 PM	R90977
Chloroform	ND	0.13	1.0		µg/L	1	9/13/2022 8:01:00 PM	R90977
Chloromethane	ND	0.41	3.0		µg/L	1	9/13/2022 8:01:00 PM	R90977
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/13/2022 8:01:00 PM	R90977
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/13/2022 8:01:00 PM	R90977
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/13/2022 8:01:00 PM	R90977
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 8:01:00 PM	R90977
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/13/2022 8:01:00 PM	R90977
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/13/2022 8:01:00 PM	R90977
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/13/2022 8:01:00 PM	R90977
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 8:01:00 PM	R90977
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/13/2022 8:01:00 PM	R90977
Styrene	ND	0.14	1.0		µg/L	1	9/13/2022 8:01:00 PM	R90977
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/13/2022 8:01:00 PM	R90977
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/13/2022 8:01:00 PM	R90977
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/13/2022 8:01:00 PM	R90977
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/13/2022 8:01:00 PM	R90977
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/13/2022 8:01:00 PM	R90977
Surr: 1,2-Dichloroethane-d4	103	0	70-130		%Rec	1	9/13/2022 8:01:00 PM	R90977
Surr: 4-Bromofluorobenzene	88.9	0	70-130		%Rec	1	9/13/2022 8:01:00 PM	R90977
Surr: Dibromofluoromethane	103	0	70-130		%Rec	1	9/13/2022 8:01:00 PM	R90977
Surr: Toluene-d8	87.7	0	70-130		%Rec	1	9/13/2022 8:01:00 PM	R90977

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209478**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 9-9-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/9/2022
Lab ID: 2209478-005B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	9/15/2022 8:59:46 PM	70173

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209478**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** DUP 9-9-22
Project: 2022 GW Sampling 3rd Quarter **Collection Date:** 9/9/2022
Lab ID: 2209478-005C **Matrix:** Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.20	0.016	0.064	E	mg/L	1	9/19/2022 4:59:28 PM	70105
Motor Oil Range Organics (MRO)	0.13	0.052	0.080	E	mg/L	1	9/19/2022 4:59:28 PM	70105
Surr: DNOP	46.2	0	42.2-138		%Rec	1	9/19/2022 4:59:28 PM	70105
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	180	200	D	µg/L	10	9/14/2022 8:35:44 PM	70094
Bis(2-ethylhexyl)phthalate	ND	84	100	D	µg/L	10	9/14/2022 8:35:44 PM	70094
Chrysene	ND	53	100	D	µg/L	10	9/14/2022 8:35:44 PM	70094
Di-n-butyl phthalate	ND	77	100	D	µg/L	10	9/14/2022 8:35:44 PM	70094
Di-n-octyl phthalate	ND	120	200	D	µg/L	10	9/14/2022 8:35:44 PM	70094
1,4-Dichlorobenzene	ND	24	50	D	µg/L	10	9/14/2022 8:35:44 PM	70094
Diethyl phthalate	ND	60	100	D	µg/L	10	9/14/2022 8:35:44 PM	70094
Dimethyl phthalate	ND	60	100	D	µg/L	10	9/14/2022 8:35:44 PM	70094
2,4-Dimethylphenol	ND	58	100	D	µg/L	10	9/14/2022 8:35:44 PM	70094
2,4-Dinitrophenol	ND	160	200	D	µg/L	10	9/14/2022 8:35:44 PM	70094
2-Methylphenol	ND	50	100	D	µg/L	10	9/14/2022 8:35:44 PM	70094
3+4-Methylphenol	ND	51	100	D	µg/L	10	9/14/2022 8:35:44 PM	70094
Phenol	ND	180	200	D	µg/L	10	9/14/2022 8:35:44 PM	70094
Pyridine	ND	140	400	D	µg/L	10	9/14/2022 8:35:44 PM	70094
2,4,6-Trichlorophenol	ND	59	100	D	µg/L	10	9/14/2022 8:35:44 PM	70094
Surr: 2-Fluorophenol	0	0	15-84.5	SD	%Rec	10	9/14/2022 8:35:44 PM	70094
Surr: Phenol-d5	0	0	15-67	SD	%Rec	10	9/14/2022 8:35:44 PM	70094
Surr: 2,4,6-Tribromophenol	0	0	15-108	SD	%Rec	10	9/14/2022 8:35:44 PM	70094
Surr: Nitrobenzene-d5	0	0	16.8-112	SD	%Rec	10	9/14/2022 8:35:44 PM	70094
Surr: 2-Fluorobiphenyl	0	0	15-101	SD	%Rec	10	9/14/2022 8:35:44 PM	70094
Surr: 4-Terphenyl-d14	0	0	34.4-134	SD	%Rec	10	9/14/2022 8:35:44 PM	70094
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	ND	1.1	10	ED	µg/L	10	9/13/2022 7:29:00 PM	70094
Naphthalene	ND	2.0	3.0	D	µg/L	10	9/13/2022 7:29:00 PM	70094
1-Methylnaphthalene	ND	1.5	3.0	D	µg/L	10	9/13/2022 7:29:00 PM	70094
2-Methylnaphthalene	ND	1.4	3.0	D	µg/L	10	9/13/2022 7:29:00 PM	70094
Acenaphthene	ND	1.4	3.0	D	µg/L	10	9/13/2022 7:29:00 PM	70094
Fluorene	ND	0.95	3.0	D	µg/L	10	9/13/2022 7:29:00 PM	70094
Phenanthrene	ND	1.6	3.0	D	µg/L	10	9/13/2022 7:29:00 PM	70094
Anthracene	ND	1.4	3.0	D	µg/L	10	9/13/2022 7:29:00 PM	70094
Fluoranthene	ND	1.4	3.0	D	µg/L	10	9/13/2022 7:29:00 PM	70094
Pyrene	ND	3.2	10	D	µg/L	10	9/13/2022 7:29:00 PM	70094
Benz(a)anthracene	ND	1.5	3.0	D	µg/L	10	9/13/2022 7:29:00 PM	70094
Chrysene	ND	2.5	3.0	ED	µg/L	10	9/13/2022 7:29:00 PM	70094
Benzo(b)fluoranthene	ND	1.4	3.0	D	µg/L	10	9/13/2022 7:29:00 PM	70094

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209478**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 9-9-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/9/2022
Lab ID: 2209478-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Indeno(1,2,3-cd)pyrene	ND	2.3	3.0	D	µg/L	10	9/13/2022 7:29:00 PM	70094
Surr: Nitrobenzene-d5	0	0	31.6-100	SD	%Rec	10	9/13/2022 7:29:00 PM	70094
Surr: 2-Fluorobiphenyl	0	0	26.7-90.1	SD	%Rec	10	9/13/2022 7:29:00 PM	70094
Surr: 4-Terphenyl-d14	0	0	72.3-147	SD	%Rec	10	9/13/2022 7:29:00 PM	70094

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209478**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 9-9-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/9/2022
Lab ID: 2209478-005D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.030	0.0016	0.0030		mg/L	1	9/13/2022 12:49:16 PM	70092
Beryllium	ND	0.00088	0.0020		mg/L	1	9/13/2022 12:49:16 PM	70092
Cadmium	ND	0.0018	0.0020		mg/L	1	9/13/2022 12:49:16 PM	70092
Chromium	ND	0.0020	0.0060		mg/L	1	9/13/2022 12:49:16 PM	70092
Cobalt	0.012	0.0035	0.0060		mg/L	1	9/13/2022 12:49:16 PM	70092
Nickel	ND	0.0053	0.010		mg/L	1	9/13/2022 12:49:16 PM	70092
Silver	0.0020	0.0018	0.0050	J	mg/L	1	9/13/2022 12:49:16 PM	70092
Vanadium	ND	0.0035	0.050		mg/L	1	9/13/2022 12:49:16 PM	70092
Zinc	0.025	0.0039	0.010		mg/L	1	9/13/2022 12:49:16 PM	70092
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/14/2022 4:27:00 PM	70092
Arsenic	0.0025	0.00013	0.0010		mg/L	1	9/14/2022 4:27:00 PM	70092
Lead	0.00016	0.000061	0.00050	J	mg/L	1	9/14/2022 4:27:00 PM	70092
Selenium	0.0018	0.00037	0.0010		mg/L	1	9/14/2022 4:27:00 PM	70092
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00024	0.000091	0.00020		mg/L	1	9/17/2022 12:30:06 PM	70232

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209478**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 9-9-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/9/2022
Lab ID: 2209478-005E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.025	0.0011	0.0020		mg/L	1	9/19/2022 4:39:46 PM	B91139
Beryllium	ND	0.00088	0.0020		mg/L	1	9/19/2022 4:39:46 PM	B91139
Cadmium	ND	0.00098	0.0020		mg/L	1	9/19/2022 4:39:46 PM	B91139
Chromium	ND	0.0020	0.0060		mg/L	1	9/19/2022 4:39:46 PM	B91139
Cobalt	ND	0.0024	0.0060		mg/L	1	9/19/2022 4:39:46 PM	B91139
Nickel	ND	0.0033	0.010		mg/L	1	9/19/2022 4:39:46 PM	B91139
Silver	0.0055	0.0013	0.0050		mg/L	1	9/19/2022 4:39:46 PM	B91139
Vanadium	0.0037	0.0017	0.050	J	mg/L	1	9/19/2022 4:39:46 PM	B91139
Zinc	0.019	0.0032	0.010		mg/L	1	9/19/2022 4:39:46 PM	B91139
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	0.00058	0.00044	0.0010	J	mg/L	1	9/13/2022 2:59:32 PM	B91030
Arsenic	0.0023	0.00012	0.0010		mg/L	1	9/13/2022 2:59:32 PM	B91030
Lead	ND	0.000057	0.00050		mg/L	1	9/13/2022 2:59:32 PM	B91030
Selenium	0.0013	0.00034	0.0010		mg/L	1	9/13/2022 4:58:48 PM	B91030
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00018	0.000091	0.00020	J	mg/L	1	9/17/2022 12:32:15 PM	70232

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209478**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 9-9-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/9/2022
Lab ID: 2209478-005G
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
SM 9223B FECAL INDICATOR: E. COLI MPN							Analyst: **dms**	
E. Coli	>24196	10.00	10.00	H	MPN/100	10	9/10/2022 7:30:00 PM	70088

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209478**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 9-9-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/9/2022
Lab ID: 2209478-005H
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
SM5210B: BOD							Analyst: **dms**	
Biochemical Oxygen Demand	47	2.0	2.0		mg/L	1	9/14/2022 2:46:00 PM	70067

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209478**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 3rd Quarter
Collection Date:
Lab ID: 2209478-006A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	9/13/2022 8:24:00 PM	R90977
Toluene	ND	0.20	1.0		µg/L	1	9/13/2022 8:24:00 PM	R90977
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/13/2022 8:24:00 PM	R90977
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/13/2022 8:24:00 PM	R90977
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/13/2022 8:24:00 PM	R90977
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 8:24:00 PM	R90977
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/13/2022 8:24:00 PM	R90977
Acetone	6.9	2.5	10	J	µg/L	1	9/13/2022 8:24:00 PM	R90977
Bromomethane	ND	0.85	3.0		µg/L	1	9/13/2022 8:24:00 PM	R90977
2-Butanone	ND	2.0	10		µg/L	1	9/13/2022 8:24:00 PM	R90977
Carbon disulfide	ND	0.59	10		µg/L	1	9/13/2022 8:24:00 PM	R90977
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/13/2022 8:24:00 PM	R90977
Chloroform	ND	0.13	1.0		µg/L	1	9/13/2022 8:24:00 PM	R90977
Chloromethane	ND	0.41	3.0		µg/L	1	9/13/2022 8:24:00 PM	R90977
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/13/2022 8:24:00 PM	R90977
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/13/2022 8:24:00 PM	R90977
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/13/2022 8:24:00 PM	R90977
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 8:24:00 PM	R90977
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/13/2022 8:24:00 PM	R90977
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/13/2022 8:24:00 PM	R90977
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/13/2022 8:24:00 PM	R90977
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/13/2022 8:24:00 PM	R90977
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/13/2022 8:24:00 PM	R90977
Styrene	ND	0.14	1.0		µg/L	1	9/13/2022 8:24:00 PM	R90977
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/13/2022 8:24:00 PM	R90977
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/13/2022 8:24:00 PM	R90977
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/13/2022 8:24:00 PM	R90977
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/13/2022 8:24:00 PM	R90977
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/13/2022 8:24:00 PM	R90977
Surr: 1,2-Dichloroethane-d4	106	0	70-130		%Rec	1	9/13/2022 8:24:00 PM	R90977
Surr: 4-Bromofluorobenzene	89.3	0	70-130		%Rec	1	9/13/2022 8:24:00 PM	R90977
Surr: Dibromofluoromethane	103	0	70-130		%Rec	1	9/13/2022 8:24:00 PM	R90977
Surr: Toluene-d8	88.6	0	70-130		%Rec	1	9/13/2022 8:24:00 PM	R90977

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209478**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 3rd Quarter
Collection Date:
Lab ID: 2209478-006B
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	9/15/2022 10:00:26 PM	70173

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

ANALYTICAL REPORT

September 25, 2022

Hall Environmental Analysis Laboratory

Sample Delivery Group: L1535069

Samples Received: 09/13/2022

Project Number:

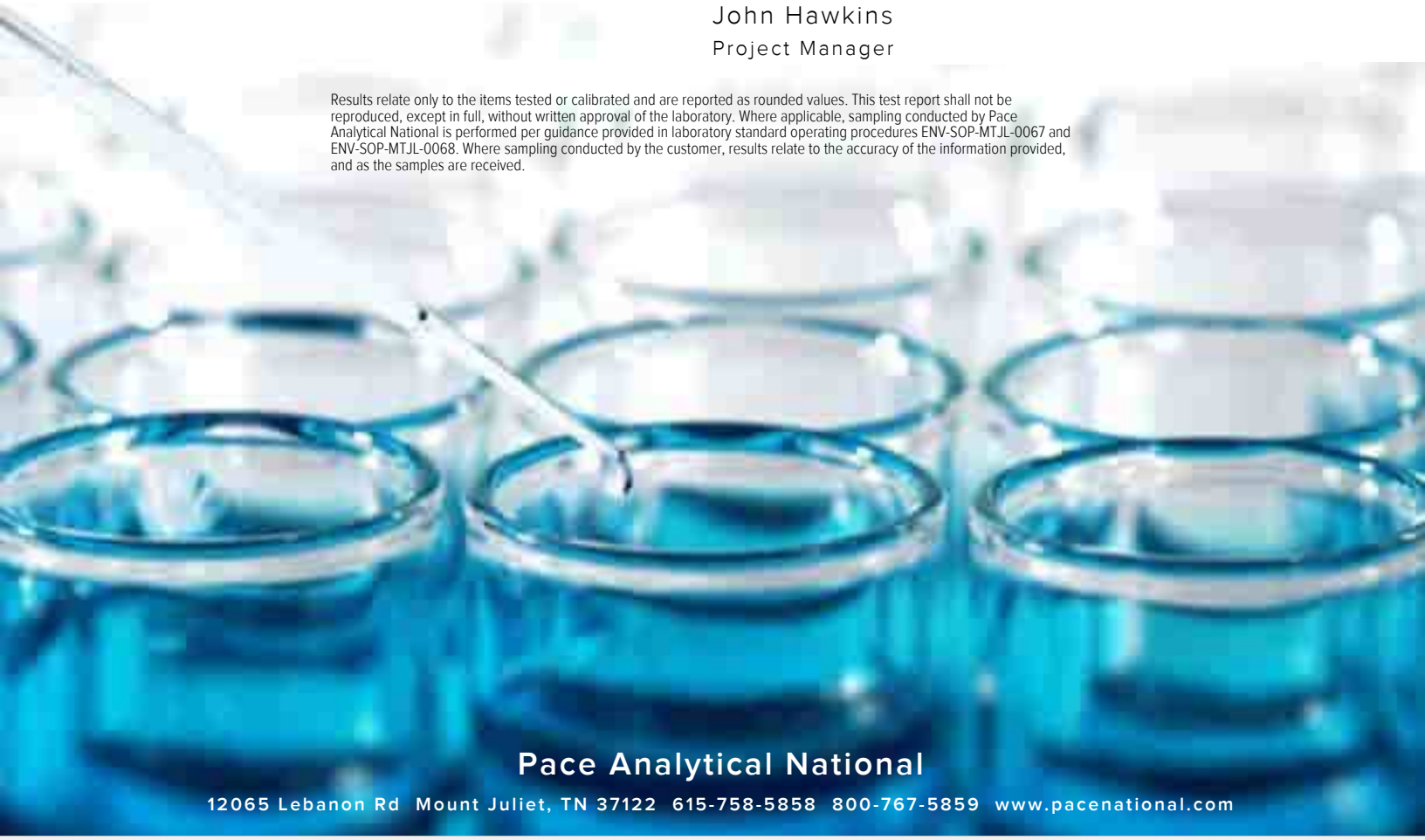
Description:

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By:

John Hawkins
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 4

Sr: Sample Results 5

2209478-001F EB 9-9-22 L1535069-01 5

2209478-001I EB 9-9-22 L1535069-02 6

2209478-002F STP-1 TO EP-2 L1535069-03 7

2209478-002I STP-1 TO EP-2 L1535069-04 8

2209478-003F EP-2 L1535069-05 9

2209478-003I EP-2 L1535069-06 10

2209478-005F DUP 9-9-22 L1535069-07 11

2209478-005I DUP 9-2-22 L1535069-08 12

Qc: Quality Control Summary 13

Wet Chemistry by Method 410.4 13

Wet Chemistry by Method 4500CN E-2016 14

Gl: Glossary of Terms 16

Al: Accreditations & Locations 17

Sc: Sample Chain of Custody 18

SAMPLE SUMMARY

2209478-001F EB 9-9-22 L1535069-01 WW

Collected by	Collected date/time	Received date/time
	09/09/22 08:30	09/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1925290	1	09/19/22 00:58	09/19/22 16:07	CAT	Mt. Juliet, TN

2209478-001I EB 9-9-22 L1535069-02 WW

Collected by	Collected date/time	Received date/time
	09/09/22 08:30	09/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 410.4	WG1931912	1	09/24/22 16:00	09/24/22 18:48	TQP	Mt. Juliet, TN

2209478-002F STP-1 TO EP-2 L1535069-03 WW

Collected by	Collected date/time	Received date/time
	09/09/22 10:00	09/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1925290	1	09/19/22 00:58	09/19/22 16:08	CAT	Mt. Juliet, TN

2209478-002I STP-1 TO EP-2 L1535069-04 WW

Collected by	Collected date/time	Received date/time
	09/09/22 10:00	09/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 410.4	WG1931912	1	09/24/22 16:00	09/24/22 18:49	TQP	Mt. Juliet, TN

2209478-003F EP-2 L1535069-05 WW

Collected by	Collected date/time	Received date/time
	09/09/22 10:35	09/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1928505	1	09/19/22 18:30	09/20/22 16:46	LDT	Mt. Juliet, TN

2209478-003I EP-2 L1535069-06 WW

Collected by	Collected date/time	Received date/time
	09/09/22 10:35	09/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 410.4	WG1931912	1	09/24/22 16:00	09/24/22 18:49	TQP	Mt. Juliet, TN

2209478-005F DUP 9-9-22 L1535069-07 WW

Collected by	Collected date/time	Received date/time
	09/09/22 00:00	09/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1928505	1	09/19/22 18:30	09/20/22 16:48	LDT	Mt. Juliet, TN

2209478-005I DUP 9-2-22 L1535069-08 WW

Collected by	Collected date/time	Received date/time
	09/09/22 00:00	09/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 410.4	WG1931912	1	09/24/22 16:00	09/24/22 18:49	TQP	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	09/19/2022 16:07	WG1925290

Wet Chemistry by Method 410.4

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
COD	44.7		20.0	1	09/24/2022 18:48	WG1931912

Wet Chemistry by Method 4500CN E-2016

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Cyanide	ND		0.00500	1	09/19/2022 16:08	WG1925290

Wet Chemistry by Method 410.4

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
COD	190		20.0	1	09/24/2022 18:49	WG1931912

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND	P1	0.00500	1	09/20/2022 16:46	WG1928505

Wet Chemistry by Method 410.4

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
COD	464		20.0	1	09/24/2022 18:49	WG1931912

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	09/20/2022 16:48	WG1928505

Wet Chemistry by Method 410.4

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
COD	181		20.0	1	09/24/2022 18:49	WG1931912

Received by OCD: 4/21/2023 9:21:57 AM

QUALITY CONTROL SUMMARY

L1535069-02,04,06,08

Method Blank (MB)

(MB) R3841005-1 09/24/22 18:47

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
COD	U		11.7	20.0

L1535069-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1535069-02 09/24/22 18:48 • (DUP) R3841005-3 09/24/22 18:49

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
COD	44.7	50.2	1	11.7		20

L1535371-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1535371-03 09/24/22 18:52 • (DUP) R3841005-4 09/24/22 18:52

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
COD	106	109	1	2.68		20

Laboratory Control Sample (LCS)

(LCS) R3841005-2 09/24/22 18:47

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
COD	500	498	99.6	90.0-110	

L1535395-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1535395-01 09/24/22 19:19 • (MS) R3841005-5 09/24/22 19:19 • (MSD) R3841005-6 09/24/22 19:19

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
COD	500	164	648	646	96.9	96.6	1	80.0-120			0.258	20

Released to Imaging: 4/21/2023 9:40:26 AM

Method Blank (MB)

(MB) R3838823-1 09/19/22 15:37

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1533610-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1533610-02 09/19/22 15:41 • (DUP) R3838823-3 09/19/22 15:42

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

L1534252-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1534252-02 09/19/22 15:49 • (DUP) R3838823-6 09/19/22 15:50

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3838823-2 09/19/22 15:38

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.0959	95.9	87.1-120	

L1534232-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1534232-10 09/19/22 15:44 • (MS) R3838823-4 09/19/22 15:45 • (MSD) R3838823-5 09/19/22 15:46

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0947	0.0948	94.7	94.8	1	90.0-110			0.106	20

L1535062-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1535062-02 09/19/22 15:57 • (MS) R3838823-7 09/19/22 15:59 • (MSD) R3838823-8 09/19/22 16:02

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0936	0.0919	93.6	91.9	1	90.0-110			1.83	20

Method Blank (MB)

(MB) R3839374-1 09/20/22 16:40

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1535069-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1535069-05 09/20/22 16:46 • (DUP) R3839374-3 09/20/22 16:47

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	200	P1	20

L1535405-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1535405-02 09/20/22 16:59 • (DUP) R3839374-6 09/20/22 17:00

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	0.00747	0.00658	1	12.7		20

Laboratory Control Sample (LCS)

(LCS) R3839374-2 09/20/22 16:41

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.108	108	87.1-120	

L1535358-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1535358-02 09/20/22 16:55 • (MS) R3839374-4 09/20/22 16:57 • (MSD) R3839374-5 09/20/22 16:58

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.101	0.102	98.4	99.4	1	90.0-110			0.985	20

L1535554-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1535554-02 09/20/22 17:01 • (MS) R3839374-7 09/20/22 17:02 • (MSD) R3839374-8 09/20/22 17:05

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0829	0.0829	80.7	80.7	1	90.0-110	J6	J6	0.000	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Received by OCD: 4/21/2023 9:21:57 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

B226

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

SUB CONTRATOR: Pace TN	COMPANY: PACE TN		PHONE: (800) 767-5859	FAX: (615) 758-5859	
ADDRESS: 12065 Lebanon Rd			ACCOUNT #:	EMAIL:	
CITY, STATE, ZIP: Mt. Juliet, TN 37122					

L1535069

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	2209478-001F	EB-9-9-22	500AMBHDPE-NAOH	Groundwater	9/9/2022 8:30:00 AM	1	Total Cyanide J and MDL -01
2	2209478-001I	EB-9-9-22	125HDPH2SO4	Groundwater	9/9/2022 8:30:00 AM	1	COD- J and MDL -02
3	2209478-002F	STP-1 to EP-2	500AMBHDPE-NAOH	Groundwater	9/9/2022 10:00:00 AM	1	Total Cyanide J and MDL -03
4	2209478-002I	STP-1 to EP-2	125HDPH2SO4	Groundwater	9/9/2022 10:00:00 AM	1	COD- J and MDL -04
5	2209478-003F	EP-2	500AMBHDPE-NAOH	Groundwater	9/9/2022 10:35:00 AM	1	Total Cyanide J and MDL -05
6	2209478-003I	EP-2	125HDPH2SO4	Groundwater	9/9/2022 10:35:00 AM	1	COD- J and MDL -06
7	2209478-005F	DUP 9-9-22	500AMBHDPE-NAOH	Groundwater		1	Total Cyanide J and MDL -07
8	2209478-005I	DUP 9-9-22	125HDPH2SO4	Groundwater		1	COD- J and MDL -08

Sample Receipt Checklist

COC Seal Present/Intact:	Y N	If Applicable	
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	Y N	Pres.Correct/Check:	Y N
Correct bottles used:	Y N		
Sufficient volume sent:	Y N		
RAD Screen <0.5 mR/hr:	Y N		

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you. OK

Relinquished By:	Date: 9/9/2022	Time: 4:02 PM	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date: 9/13/22	Time: 900

TAT: Standard ☒ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED

☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY

Temp of samples 4 °C Attempt to Cool ?

Comments:

TRK# 5755 8093 3282

Released to Imaging: 4/21/2023 9:40:26 AM

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209478**

07-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70092**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **70092**	RunNo: **90990**
Prep Date: **9/12/2022**	Analysis Date: **9/13/2022**	SeqNo: **3254082** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0018	0.0030								J
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LCSLL-70092**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **70092**	RunNo: **90990**
Prep Date: **9/12/2022**	Analysis Date: **9/13/2022**	SeqNo: **3254083** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0019	0.0030	0.002000	0	94.5	50	150			J
Beryllium	0.0018	0.0020	0.002000	0	91.7	50	150			J
Cadmium	0.0023	0.0020	0.002000	0	114	50	150			
Chromium	0.0070	0.0060	0.006000	0	117	50	150			
Cobalt	0.0050	0.0060	0.006000	0	83.1	50	150			J
Nickel	0.0063	0.010	0.005000	0	126	50	150			J
Silver	0.0050	0.0050	0.005000	0	100	50	150			
Vanadium	0.010	0.050	0.01000	0	104	50	150			J
Zinc	0.011	0.010	0.01000	0	113	50	150			

Sample ID: **LCS-70092**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **70092**	RunNo: **90990**
Prep Date: **9/12/2022**	Analysis Date: **9/13/2022**	SeqNo: **3254084** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0030	0.5000	0	98.5	85	115			
Beryllium	0.51	0.0020	0.5000	0	102	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.4	85	115			
Chromium	0.49	0.0060	0.5000	0	98.1	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.7	85	115			
Nickel	0.49	0.010	0.5000	0	97.2	85	115			
Silver	0.10	0.0050	0.1000	0	99.9	85	115			
Vanadium	0.50	0.050	0.5000	0	99.6	85	115			
Zinc	0.50	0.010	0.5000	0	99.5	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209478**
07-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-B** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW** Batch ID: **B91139** RunNo: **91139**
Prep Date: Analysis Date: **9/19/2022** SeqNo: **3260464** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS-B** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **B91139** RunNo: **91139**
Prep Date: Analysis Date: **9/19/2022** SeqNo: **3260465** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0027	0.0020	0.002000	0	135	50	150			
Beryllium	0.0022	0.0020	0.002000	0	108	50	150			
Cadmium	0.0018	0.0020	0.002000	0	89.5	50	150			J
Chromium	0.0048	0.0060	0.006000	0	79.8	50	150			J
Cobalt	0.0061	0.0060	0.006000	0	102	50	150			
Nickel	0.0052	0.010	0.005000	0	103	50	150			J
Silver	0.0047	0.0050	0.005000	0	94.5	50	150			J
Vanadium	0.011	0.050	0.01000	0	107	50	150			J
Zinc	0.010	0.010	0.01000	0	104	50	150			

Sample ID: **LCS-B** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **B91139** RunNo: **91139**
Prep Date: Analysis Date: **9/19/2022** SeqNo: **3260466** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0020	0.5000	0	102	85	115			
Beryllium	0.52	0.0020	0.5000	0	104	85	115			
Cadmium	0.52	0.0020	0.5000	0	105	85	115			
Chromium	0.52	0.0060	0.5000	0	103	85	115			
Cobalt	0.50	0.0060	0.5000	0	101	85	115			
Nickel	0.51	0.010	0.5000	0	102	85	115			
Silver	0.11	0.0050	0.1000	0	105	85	115			
Vanadium	0.52	0.050	0.5000	0	104	85	115			
Zinc	0.51	0.010	0.5000	0	102	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209478**
07-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **2209478-001EMS** SampType: **MS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB-9-9-22** Batch ID: **B91139** RunNo: **91139**
Prep Date: Analysis Date: **9/19/2022** SeqNo: **3260541** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	98.9	70	130			
Beryllium	0.51	0.0020	0.5000	0	101	70	130			
Cadmium	0.51	0.0020	0.5000	0	102	70	130			
Chromium	0.49	0.0060	0.5000	0	98.9	70	130			
Cobalt	0.50	0.0060	0.5000	0	101	70	130			
Nickel	0.50	0.010	0.5000	0	100	70	130			
Silver	0.093	0.0050	0.1000	0	92.8	70	130			
Vanadium	0.50	0.050	0.5000	0.001917	99.9	70	130			
Zinc	0.52	0.010	0.5000	0.006535	102	70	130			

Sample ID: **2209478-001EMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB-9-9-22** Batch ID: **B91139** RunNo: **91139**
Prep Date: Analysis Date: **9/19/2022** SeqNo: **3260542** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	98.2	70	130	0.644	20	
Beryllium	0.50	0.0020	0.5000	0	99.4	70	130	1.67	20	
Cadmium	0.51	0.0020	0.5000	0	101	70	130	1.15	20	
Chromium	0.49	0.0060	0.5000	0	98.3	70	130	0.554	20	
Cobalt	0.50	0.0060	0.5000	0	100	70	130	0.362	20	
Nickel	0.50	0.010	0.5000	0	99.5	70	130	0.610	20	
Silver	0.091	0.0050	0.1000	0	91.4	70	130	1.48	20	
Vanadium	0.50	0.050	0.5000	0.001917	99.1	70	130	0.758	20	
Zinc	0.51	0.010	0.5000	0.006535	101	70	130	1.19	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209478**
07-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**							
Client ID: **PBW**	Batch ID: **B91030**	RunNo: **91030**							
Prep Date:	Analysis Date: **9/13/2022**	SeqNo: **3255545**	Units: **mg/L**						

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**							
Client ID: **BatchQC**	Batch ID: **B91030**	RunNo: **91030**							
Prep Date:	Analysis Date: **9/13/2022**	SeqNo: **3255546**	Units: **mg/L**						

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0011	0.0010	0.001000	0	109	50	150			
Arsenic	0.00094	0.0010	0.001000	0	94.5	50	150			J
Lead	0.00051	0.00050	0.0005000	0	102	50	150			
Selenium	0.0011	0.0010	0.001000	0	114	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**							
Client ID: **LCSW**	Batch ID: **B91030**	RunNo: **91030**							
Prep Date:	Analysis Date: **9/13/2022**	SeqNo: **3255547**	Units: **mg/L**						

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	94.9	85	115			
Arsenic	0.024	0.0010	0.02500	0	97.7	85	115			
Lead	0.012	0.00050	0.01250	0	96.6	85	115			
Selenium	0.024	0.0010	0.02500	0	97.9	85	115			

Sample ID: **MB-70092**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**							
Client ID: **PBW**	Batch ID: **70092**	RunNo: **91042**							
Prep Date: **9/12/2022**	Analysis Date: **9/14/2022**	SeqNo: **3256115**	Units: **mg/L**						

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00063	0.0010								J
Arsenic	ND	0.0010								
Lead	0.00040	0.00050								J
Selenium	ND	0.0010								

Sample ID: **MSLCSLL-70092**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**							
Client ID: **BatchQC**	Batch ID: **70092**	RunNo: **91042**							
Prep Date: **9/12/2022**	Analysis Date: **9/14/2022**	SeqNo: **3256116**	Units: **mg/L**						

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209478**
07-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MSLCSLL-70092** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **70092** RunNo: **91042**
Prep Date: **9/12/2022** Analysis Date: **9/14/2022** SeqNo: **3256116** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0014	0.0010	0.001000	0	144	50	150			
Arsenic	0.0011	0.0010	0.001000	0	109	50	150			
Lead	0.00054	0.00050	0.0005000	0	109	50	150			
Selenium	0.0012	0.0010	0.001000	0	121	50	150			

Sample ID: **MSLCS-70092** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **70092** RunNo: **91042**
Prep Date: **9/12/2022** Analysis Date: **9/14/2022** SeqNo: **3256117** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	104	85	115			
Arsenic	0.026	0.0010	0.02500	0	102	85	115			
Lead	0.013	0.00050	0.01250	0	102	85	115			
Selenium	0.026	0.0010	0.02500	0	105	85	115			

Sample ID: **2209478-005DMSLL** SampType: **MS** TestCode: **EPA 200.8: Metals**
Client ID: **DUP 9-9-22** Batch ID: **70092** RunNo: **91042**
Prep Date: **9/12/2022** Analysis Date: **9/14/2022** SeqNo: **3256181** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.031	0.0010	0.02500	0	125	70	130			
Arsenic	0.028	0.0010	0.02500	0.002537	103	70	130			
Lead	0.011	0.00050	0.01250	0.0001648	88.1	70	130			
Selenium	0.026	0.0010	0.02500	0.001841	95.4	70	130			

Sample ID: **2209478-005DMSDL** SampType: **MSD** TestCode: **EPA 200.8: Metals**
Client ID: **DUP 9-9-22** Batch ID: **70092** RunNo: **91042**
Prep Date: **9/12/2022** Analysis Date: **9/14/2022** SeqNo: **3256182** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.031	0.0010	0.02500	0	122	70	130	1.96	20	
Arsenic	0.032	0.0010	0.02500	0.002537	117	70	130	11.3	20	
Lead	0.013	0.00050	0.01250	0.0001648	100	70	130	12.6	20	
Selenium	0.030	0.0010	0.02500	0.001841	114	70	130	16.7	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209478**
07-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B91030**	RunNo: **91030**
Prep Date:	Analysis Date: **9/13/2022**	SeqNo: **3255549** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B91030**	RunNo: **91030**
Prep Date:	Analysis Date: **9/13/2022**	SeqNo: **3255550** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0011	0.0010	0.001000	0	109	50	150			
Arsenic	0.00094	0.0010	0.001000	0	94.5	50	150			J
Lead	0.00051	0.00050	0.0005000	0	102	50	150			
Selenium	0.0011	0.0010	0.001000	0	114	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B91030**	RunNo: **91030**
Prep Date:	Analysis Date: **9/13/2022**	SeqNo: **3255551** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	94.9	85	115			
Arsenic	0.024	0.0010	0.02500	0	97.7	85	115			
Lead	0.012	0.00050	0.01250	0	96.6	85	115			
Selenium	0.024	0.0010	0.02500	0	97.9	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209478**
07-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70232**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **PBW**	Batch ID: **70232**	RunNo: **91107**							
Prep Date: **9/16/2022**	Analysis Date: **9/17/2022**	SeqNo: **3259050**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-70232**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **BatchQC**	Batch ID: **70232**	RunNo: **91107**							
Prep Date: **9/16/2022**	Analysis Date: **9/17/2022**	SeqNo: **3259051**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00019	0.00020	0.0001500	0	124	50	150			J

Sample ID: **LCS-70232**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **LCSW**	Batch ID: **70232**	RunNo: **91107**							
Prep Date: **9/16/2022**	Analysis Date: **9/17/2022**	SeqNo: **3259052**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0053	0.00020	0.005000	0	105	85	115			

Sample ID: **2209478-003DMS**	SampType: **MS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **EP-2**	Batch ID: **70232**	RunNo: **91107**							
Prep Date: **9/16/2022**	Analysis Date: **9/17/2022**	SeqNo: **3259103**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0048	0.00020	0.005000	0.0001542	92.5	75	125			

Sample ID: **2209478-003DMSD**	SampType: **MSD**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **EP-2**	Batch ID: **70232**	RunNo: **91107**							
Prep Date: **9/16/2022**	Analysis Date: **9/17/2022**	SeqNo: **3259104**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0047	0.00020	0.005000	0.0001542	90.7	75	125	1.94	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209478**

07-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70173**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **70173**	RunNo: **91063**							
Prep Date: **9/15/2022**	Analysis Date: **9/15/2022**	SeqNo: **3258444**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **MB-70173**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **70173**	RunNo: **91063**							
Prep Date: **9/15/2022**	Analysis Date: **9/15/2022**	SeqNo: **3258445**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-70173**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **LCSW**	Batch ID: **70173**	RunNo: **91063**							
Prep Date: **9/15/2022**	Analysis Date: **9/15/2022**	SeqNo: **3258447**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.088	0.010	0.1000	0	87.9	70	130			

Sample ID: **LCSD-70173**	SampType: **LCSD**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **LCSS02**	Batch ID: **70173**	RunNo: **91063**							
Prep Date: **9/15/2022**	Analysis Date: **9/15/2022**	SeqNo: **3258448**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.094	0.010	0.1000	0	93.6	70	130	6.28	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209478**
07-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **LCS-70105**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSW**	Batch ID: **70105**	RunNo: **90980**							
Prep Date: **9/12/2022**	Analysis Date: **9/13/2022**	SeqNo: **3261749**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.15	0.064	0.1875	0	81.4	31.7	75.4			S
Surr: DNOP	0.021		0.01875		113	42.2	138			

Sample ID: **LCSD-70105**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSS02**	Batch ID: **70105**	RunNo: **90980**							
Prep Date: **9/12/2022**	Analysis Date: **9/13/2022**	SeqNo: **3261750**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.23	0.064	0.1875	0	120	31.7	75.4	38.5	20	RS
Surr: DNOP	0.021		0.01875		112	42.2	138	0	0	

Sample ID: **MB-70105**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **PBW**	Batch ID: **70105**	RunNo: **90980**							
Prep Date: **9/12/2022**	Analysis Date: **9/13/2022**	SeqNo: **3261765**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.052	0.064								JE
Motor Oil Range Organics (MRO)	ND	0.080								E
Surr: DNOP	0.038		0.03750		102	42.2	138			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209478**

07-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **A91113**	RunNo: **91113**
Prep Date:	Analysis Date: **9/16/2022**	SeqNo: **3259450** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.50	0.050	0.5000	0	99.3	80	120			
Surr: BFB	42		20.00		210	70	130			S

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **A91113**	RunNo: **91113**
Prep Date:	Analysis Date: **9/16/2022**	SeqNo: **3259451** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	19		20.00		97.0	70	130			

Sample ID: **mb2**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **B91113**	RunNo: **91113**
Prep Date:	Analysis Date: **9/16/2022**	SeqNo: **3259475** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	20		20.00		100	70	130			

Sample ID: **2209478-005a ms**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **DUP 9-9-22**	Batch ID: **B91113**	RunNo: **91113**
Prep Date:	Analysis Date: **9/17/2022**	SeqNo: **3259484** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.40	0.050	0.5000	0	80.2	70	130			
Surr: BFB	40		20.00		199	70	130			S

Sample ID: **2209478-005A MSD**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **DUP 9-9-22**	Batch ID: **B91113**	RunNo: **91113**
Prep Date:	Analysis Date: **9/17/2022**	SeqNo: **3259485** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.37	0.050	0.5000	0	73.5	70	130	8.75	20	
Surr: BFB	38		20.00		190	70	130	0	0	S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209478**
07-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R90977**	RunNo: **90977**
Prep Date:	Analysis Date: **9/13/2022**	SeqNo: **3255160** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	98.0	70	130			
Toluene	19	1.0	20.00	0	96.9	70	130			
Chlorobenzene	20	1.0	20.00	0	98.9	70	130			
1,1-Dichloroethene	19	1.0	20.00	0	92.9	70	130			
Trichloroethene (TCE)	19	1.0	20.00	0	95.5	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		100	70	130			
Surr: 4-Bromofluorobenzene	9.2		10.00		92.0	70	130			
Surr: Dibromofluoromethane	9.9		10.00		99.0	70	130			
Surr: Toluene-d8	9.1		10.00		90.7	70	130			

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R90977**	RunNo: **90977**
Prep Date:	Analysis Date: **9/13/2022**	SeqNo: **3255170** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209478**
07-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R90977**	RunNo: **90977**
Prep Date:	Analysis Date: **9/13/2022**	SeqNo: **3255170** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	8.9		10.00		89.4	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	9.0		10.00		90.1	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209478**
07-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **mb-70094** SampType: **MBLK** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW** Batch ID: **70094** RunNo: **91043**
Prep Date: **9/12/2022** Analysis Date: **9/14/2022** SeqNo: **3256095** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Anthracene	ND	10								
Benz(a)anthracene	ND	5.0								
Benzo(b)fluoranthene	ND	10								
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	10								
2,4-Dinitrophenol	ND	20								
Fluoranthene	ND	10								
Fluorene	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
1-Methylnaphthalene	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
Naphthalene	ND	5.0								
Phenanthrene	ND	10								
Phenol	ND	20								
Pyrene	ND	10								
Pyridine	ND	40								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	53		200.0		26.4	15	84.5			
Surr: Phenol-d5	48		200.0		24.2	15	67			
Surr: 2,4,6-Tribromophenol	53		200.0		26.7	15	108			
Surr: Nitrobenzene-d5	46		100.0		45.9	16.8	112			
Surr: 2-Fluorobiphenyl	40		100.0		40.5	15	101			
Surr: 4-Terphenyl-d14	66		100.0		66.1	34.4	134			

Sample ID: **lcs-70094** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW** Batch ID: **70094** RunNo: **91043**
Prep Date: **9/12/2022** Analysis Date: **9/14/2022** SeqNo: **3256096** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209478**

07-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **lcs-70094**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **70094**	RunNo: **91043**
Prep Date: **9/12/2022**	Analysis Date: **9/14/2022**	SeqNo: **3256096** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	57	10	100.0	0	57.0	21.3	104			
1,4-Dichlorobenzene	53	5.0	100.0	0	52.9	15	89.8			
Phenol	75	20	200.0	0	37.7	17	61.1			
Pyrene	92	10	100.0	0	92.4	61	123			
Surr: 2-Fluorophenol	87		200.0		43.3	15	84.5			
Surr: Phenol-d5	69		200.0		34.5	15	67			
Surr: 2,4,6-Tribromophenol	110		200.0		55.6	15	108			
Surr: Nitrobenzene-d5	62		100.0		62.1	16.8	112			
Surr: 2-Fluorobiphenyl	56		100.0		55.5	15	101			
Surr: 4-Terphenyl-d14	98		100.0		98.4	34.4	134			

Sample ID: **lcsd-70094**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **70094**	RunNo: **91043**
Prep Date: **9/12/2022**	Analysis Date: **9/14/2022**	SeqNo: **3256097** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	42	10	100.0	0	41.7	21.3	104	31.0	45.3	
1,4-Dichlorobenzene	38	5.0	100.0	0	37.8	15	89.8	33.2	39.6	
Phenol	53	20	200.0	0	26.6	17	61.1	34.4	42.5	
Pyrene	66	10	100.0	0	66.3	61	123	32.8	11.8	R
Surr: 2-Fluorophenol	62		200.0		30.9	15	84.5	0	0	
Surr: Phenol-d5	48		200.0		24.2	15	67	0	0	
Surr: 2,4,6-Tribromophenol	90		200.0		44.8	15	108	0	0	
Surr: Nitrobenzene-d5	44		100.0		44.1	16.8	112	0	0	
Surr: 2-Fluorobiphenyl	42		100.0		41.7	15	101	0	0	
Surr: 4-Terphenyl-d14	69		100.0		68.5	34.4	134	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209478**
07-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **mb-70094**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**							
Client ID: **PBW**	Batch ID: **70094**	RunNo: **90997**							
Prep Date: **9/12/2022**	Analysis Date: **9/13/2022**	SeqNo: **3254249**	Units: **µg/L**						

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								E
Naphthalene	ND	0.30								
1-Methylnaphthalene	ND	0.30								
2-Methylnaphthalene	ND	0.30								
Acenaphthene	ND	0.30								
Fluorene	ND	0.30								
Phenanthrene	ND	0.30								
Anthracene	ND	0.30								
Fluoranthene	ND	0.30								
Pyrene	ND	1.0								
Benz(a)anthracene	ND	0.30								
Chrysene	ND	0.30								E
Benzo(b)fluoranthene	ND	0.30								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	41		100.0		40.6	31.6	100			
Surr: 2,4,6-Tribromophenol	48		200.0		23.8	22	101			
Surr: 2-Fluorobiphenyl	40		100.0		39.6	26.7	90.1			
Surr: 4-Terphenyl-d14	59		100.0		59.0	72.3	147			S

Sample ID: **lcs-70094**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**							
Client ID: **LCSW**	Batch ID: **70094**	RunNo: **90997**							
Prep Date: **9/12/2022**	Analysis Date: **9/13/2022**	SeqNo: **3254250**	Units: **µg/L**						

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.44	0.10	2.000	0	22.0	20.2	48.4			
Naphthalene	0.76	0.30	2.000	0	38.0	21.3	79.9			
1-Methylnaphthalene	0.78	0.30	2.000	0	39.0	22.2	80.3			
2-Methylnaphthalene	0.80	0.30	2.000	0	40.0	20.6	80.1			
Acenaphthene	0.78	0.30	2.000	0	39.0	29.8	82.7			
Fluorene	0.96	0.30	2.000	0	48.0	33.3	86			
Phenanthrene	1.2	0.30	2.000	0	58.0	38.2	93.9			
Anthracene	1.5	0.30	2.000	0	75.0	41.1	95.6			
Fluoranthene	1.8	0.30	2.000	0	88.0	52.9	123			
Pyrene	1.5	1.0	2.000	0	75.0	51	113			
Benz(a)anthracene	1.6	0.30	2.000	0	82.0	51	147			
Chrysene	1.0	0.30	2.000	0	51.0	55.3	115			S
Benzo(b)fluoranthene	1.3	0.30	2.000	0	66.0	44.4	136			
Indeno(1,2,3-cd)pyrene	1.6	0.30	2.000	0	81.0	31.4	165			
Surr: Nitrobenzene-d5	38		100.0		38.2	31.6	100			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209478**

07-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **lcs-70094**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **70094**	RunNo: **90997**
Prep Date: **9/12/2022**	Analysis Date: **9/13/2022**	SeqNo: **3254250** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	67		200.0		33.3	22	101			
Surr: 2-Fluorobiphenyl	37		100.0		37.1	26.7	90.1			
Surr: 4-Terphenyl-d14	44		100.0		44.2	72.3	147			S

Sample ID: **lcsd-70094**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02**	Batch ID: **70094**	RunNo: **90997**
Prep Date: **9/12/2022**	Analysis Date: **9/13/2022**	SeqNo: **3254251** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.40	0.10	2.000	0	20.0	20.2	48.4	9.52	30.1	S
Naphthalene	0.72	0.30	2.000	0	36.0	21.3	79.9	5.41	25.6	
1-Methylnaphthalene	0.74	0.30	2.000	0	37.0	22.2	80.3	5.26	25	
2-Methylnaphthalene	0.78	0.30	2.000	0	39.0	20.6	80.1	2.53	25	
Acenaphthene	0.72	0.30	2.000	0	36.0	29.8	82.7	8.00	27.8	
Fluorene	0.88	0.30	2.000	0	44.0	33.3	86	8.70	26.4	
Phenanthrene	1.0	0.30	2.000	0	52.0	38.2	93.9	10.9	27.9	
Anthracene	1.4	0.30	2.000	0	69.0	41.1	95.6	8.33	25.6	
Fluoranthene	1.6	0.30	2.000	0	79.0	52.9	123	10.8	22.8	
Pyrene	1.3	1.0	2.000	0	65.0	51	113	14.3	20	
Benz(a)anthracene	1.6	0.30	2.000	0	78.0	51	147	5.00	24.1	
Chrysene	0.96	0.30	2.000	0	48.0	55.3	115	6.06	20	S
Benzo(b)fluoranthene	1.3	0.30	2.000	0	63.0	44.4	136	4.65	24.5	
Indeno(1,2,3-cd)pyrene	1.6	0.30	2.000	0	79.0	31.4	165	2.50	21.1	
Surr: Nitrobenzene-d5	36		100.0		35.5	31.6	100	0	0	
Surr: 2,4,6-Tribromophenol	62		200.0		31.1	22	101	0	0	
Surr: 2-Fluorobiphenyl	34		100.0		33.9	26.7	90.1	0	0	
Surr: 4-Terphenyl-d14	40		100.0		39.6	72.3	147	0	0	S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209478**
07-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70067**	SampType: **MBLK**	TestCode: **SM5210B: BOD**							
Client ID: **PBW**	Batch ID: **70067**	RunNo: **91049**							
Prep Date: **9/9/2022**	Analysis Date: **9/14/2022**	SeqNo: **3256428**	Units: **mg/L**						

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	ND	2.0								

Sample ID: **LCS-70067**	SampType: **LCS**	TestCode: **SM5210B: BOD**							
Client ID: **LCSW**	Batch ID: **70067**	RunNo: **91049**							
Prep Date: **9/9/2022**	Analysis Date: **9/14/2022**	SeqNo: **3256429**	Units: **mg/L**						

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	167	2.0	198.0	0	84.3	84.6	115.4			S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209478**
07-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70088**	SampType: **MBLK**	TestCode: **SM 9223B Fecal Indicator: E. coli MPN**	
Client ID: **PBW**	Batch ID: **70088**	RunNo: **90938**	
Prep Date: **9/9/2022**	Analysis Date: **9/10/2022**	SeqNo: **3251359**	Units: **MPN/100mL**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
E. Coli	<1	1.000								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **Marathon** Work Order Number: **2209478** RcptNo: **1**

Received By: **Kasandra Payan** **9/9/2022 3:25:00 PM** KP

Completed By: **Desiree Dominguez** **9/9/2022 3:41:48 PM** DD

Reviewed By: ~~DG~~ KPA 9.09.22
KPA 9.9.22

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☑	No ☐	NA ☐
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: 12 4 (<2 or >12 unless noted)

Adjusted? NO

Checked by: 9-9-22

Labeled by = JM 9/9/22

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.0	Good	Yes			
2	5.7	Good	Yes			
3	-0.5	Good	Yes			
4	5.8	Good	Yes			

Released to Imaging: 4/21/2023 9:30:26 AM
Received by OCD: 4/21/2023 9:21:57 AM

Chain-of-Custody Record

Marathon Gallup Refinery

Address: 92 Giant Crossing Road
Jamestown, NM,87347
808-640-1823
Fax#:
ackage:
ard ☐ Level 4 (Full Validation)
ation: ☐ Az Compliance
C ☐ Other
D (Type)

Turn-Around Time:
X Standard Rush

Project Name:
2022 GW Sampling 3rd Quarter
Project #: 697-080-001

Project Manager:
Lesli Alexander/Mackensie Swift

Sampler:
On Ice: ☑ Yes ☐ No
# of Coolers: 4
Cooler Temp(including CF): See Remarks

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2209 478	See Analyte List	8260B: VOC	8270C: SVOC	8270C SIM: PAH, 1,4 Dioxane	8015: TPH GRO/DRO/MRO	E200.7: Metals	E200.7: Dissolved Metals	E245.1 Mercury	E504.1: EDB	E335.4: Cyanide Subbed		537.1: PFAS	SM 5201B: BOD	410.4: COD	SM9223B E Coli
9/9	8:30		EB-9-9-22	16		-001	X	X	X	X	X	X	X	X	X	X			X	X	X
9/9	10:00		STP-1 to EP-2	16		-002	X	X	X	X	X	X	X	X	X	X			X	X	X
9/9	10:35		EP-2	16		-003	X	X	X	X	X	X	X	X	X	X			X	X	X
9/9	16:35		FB-9-9-22	3		-004	X	X	X										X	X	X
9/9	—		DUP-9-9-22	16		-005	X	X	X	X	X	X	X	X	X	X			X	X	X
9/9	—		Trip Blank	4		-006	X	X	X	X	X	X	X	X	X	X			X	X	X
							X	X	X												

Time:	Relinquished by:	Received by:	Via:	Date Time
9/9 12:30	Hilario Trejo			
Time:	Relinquished by:	Received by:	Via:	Date Time
			courier	9.9.22 15:25

0-0=0
5.7-0=5.7
-0.5-0=-0.5
5.8-0=5.8

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Page 2699 of 3808

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 06, 2022

Lesli Alexander

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX (505) 632-3911

RE: 2022 GW Sampling 3rd Quarter OrderNo.: 2209635

Dear Lesli Alexander:

Hall Environmental Analysis Laboratory received 9 sample(s) on 9/14/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **2209635**
Date: **10/6/2022**

CLIENT: Marathon
Project: 2022 GW Sampling 3rd Quarter

Analytical Notes Regarding this Workorder are listed below:

"S" flagged surrogates denote that the surrogate recovery was outstide of the standard limits.

Analytical Notes Regarding EPA Method 8270 and 8270 SIMS:
Naphthalene, 1-methylnaphthalene and 2-methylnaphthalene were reported by EPA Method 8270 instead of EPA Method 8270SIMs becuase of its elevated concentration for sample MKTF-18R

Analytical Notes Regarding EPA Method 8015DRO:
The LCS had slighly elevated recovry. The LCSD had acceptable recoveries.

Analytical Report
Lab Order: **2209635**
Date Reported: **10/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-13-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/13/2022 8:00:00 AM
Lab ID: 2209635-001A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	9/16/2022 9:38:00 AM	A91113
Surr: BFB	103	0	70-130		%Rec	1	9/16/2022 9:38:00 AM	A91113
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	9/14/2022 7:33:00 PM	R91021
Toluene	ND	0.20	1.0		µg/L	1	9/14/2022 7:33:00 PM	R91021
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/14/2022 7:33:00 PM	R91021
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/14/2022 7:33:00 PM	R91021
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/14/2022 7:33:00 PM	R91021
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/14/2022 7:33:00 PM	R91021
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/14/2022 7:33:00 PM	R91021
Acetone	14	2.5	10		µg/L	1	9/14/2022 7:33:00 PM	R91021
Bromomethane	ND	0.85	3.0		µg/L	1	9/14/2022 7:33:00 PM	R91021
2-Butanone	11	2.0	10		µg/L	1	9/14/2022 7:33:00 PM	R91021
Carbon disulfide	ND	0.59	10		µg/L	1	9/14/2022 7:33:00 PM	R91021
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/14/2022 7:33:00 PM	R91021
Chloroform	ND	0.13	1.0		µg/L	1	9/14/2022 7:33:00 PM	R91021
Chloromethane	ND	0.41	3.0		µg/L	1	9/14/2022 7:33:00 PM	R91021
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/14/2022 7:33:00 PM	R91021
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/14/2022 7:33:00 PM	R91021
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/14/2022 7:33:00 PM	R91021
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/14/2022 7:33:00 PM	R91021
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/14/2022 7:33:00 PM	R91021
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/14/2022 7:33:00 PM	R91021
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/14/2022 7:33:00 PM	R91021
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/14/2022 7:33:00 PM	R91021
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/14/2022 7:33:00 PM	R91021
Styrene	ND	0.14	1.0		µg/L	1	9/14/2022 7:33:00 PM	R91021
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/14/2022 7:33:00 PM	R91021
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/14/2022 7:33:00 PM	R91021
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/14/2022 7:33:00 PM	R91021
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/14/2022 7:33:00 PM	R91021
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/14/2022 7:33:00 PM	R91021
Surr: 1,2-Dichloroethane-d4	103	0	70-130		%Rec	1	9/14/2022 7:33:00 PM	R91021
Surr: 4-Bromofluorobenzene	92.4	0	70-130		%Rec	1	9/14/2022 7:33:00 PM	R91021
Surr: Dibromofluoromethane	104	0	70-130		%Rec	1	9/14/2022 7:33:00 PM	R91021
Surr: Toluene-d8	90.8	0	70-130		%Rec	1	9/14/2022 7:33:00 PM	R91021

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209635**
Date Reported: **10/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-13-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/13/2022 8:00:00 AM
Lab ID: 2209635-001B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	9/15/2022 11:01:10 PM	70173

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209635**
Date Reported: **10/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-13-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/13/2022 8:00:00 AM
Lab ID: 2209635-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **JME**	
Diesel Range Organics (DRO)	0.030	0.016	0.064	JE	mg/L	1	9/15/2022 4:37:50 PM	70190
Motor Oil Range Organics (MRO)	ND	0.052	0.080	E	mg/L	1	9/15/2022 4:37:50 PM	70190
Surr: DNOP	85.1	0	42.2-138		%Rec	1	9/15/2022 4:37:50 PM	70190
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	9/16/2022 5:41:53 PM	70174
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/16/2022 5:41:53 PM	70174
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	9/16/2022 5:41:53 PM	70174
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/16/2022 5:41:53 PM	70174
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/16/2022 5:41:53 PM	70174
Diethyl phthalate	ND	6.0	10		µg/L	1	9/16/2022 5:41:53 PM	70174
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/16/2022 5:41:53 PM	70174
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	9/16/2022 5:41:53 PM	70174
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/16/2022 5:41:53 PM	70174
2-Methylphenol	ND	5.0	10		µg/L	1	9/16/2022 5:41:53 PM	70174
3+4-Methylphenol	ND	5.1	10		µg/L	1	9/16/2022 5:41:53 PM	70174
Phenol	ND	18	20		µg/L	1	9/16/2022 5:41:53 PM	70174
Pyridine	ND	14	40		µg/L	1	9/16/2022 5:41:53 PM	70174
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/16/2022 5:41:53 PM	70174
Surr: 2-Fluorophenol	32.5	0	15-84.5		%Rec	1	9/16/2022 5:41:53 PM	70174
Surr: Phenol-d5	25.5	0	15-67		%Rec	1	9/16/2022 5:41:53 PM	70174
Surr: 2,4,6-Tribromophenol	45.2	0	15-108		%Rec	1	9/16/2022 5:41:53 PM	70174
Surr: Nitrobenzene-d5	41.7	0	16.8-112		%Rec	1	9/16/2022 5:41:53 PM	70174
Surr: 2-Fluorobiphenyl	41.7	0	15-101		%Rec	1	9/16/2022 5:41:53 PM	70174
Surr: 4-Terphenyl-d14	65.4	0	34.4-134		%Rec	1	9/16/2022 5:41:53 PM	70174
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	0.16	0.11	1.0	J	µg/L	1	9/15/2022 4:21:00 PM	70174
Naphthalene	ND	0.20	0.30		µg/L	1	9/15/2022 4:21:00 PM	70174
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	9/15/2022 4:21:00 PM	70174
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	9/15/2022 4:21:00 PM	70174
Acenaphthene	ND	0.14	0.30		µg/L	1	9/15/2022 4:21:00 PM	70174
Fluorene	ND	0.095	0.30		µg/L	1	9/15/2022 4:21:00 PM	70174
Phenanthrene	ND	0.16	0.30		µg/L	1	9/15/2022 4:21:00 PM	70174
Anthracene	ND	0.14	0.30		µg/L	1	9/15/2022 4:21:00 PM	70174
Fluoranthene	ND	0.14	0.30		µg/L	1	9/15/2022 4:21:00 PM	70174
Pyrene	ND	0.32	1.0		µg/L	1	9/15/2022 4:21:00 PM	70174
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/15/2022 4:21:00 PM	70174
Chrysene	ND	0.25	0.30		µg/L	1	9/15/2022 4:21:00 PM	70174
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/15/2022 4:21:00 PM	70174
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/15/2022 4:21:00 PM	70174

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209635**
Date Reported: **10/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-13-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/13/2022 8:00:00 AM
Lab ID: 2209635-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	44.4	0	31.6-100		%Rec	1	9/15/2022 4:21:00 PM	70174
Surr: 2-Fluorobiphenyl	45.6	0	26.7-90.1		%Rec	1	9/15/2022 4:21:00 PM	70174
Surr: 4-Terphenyl-d14	73.7	0	72.3-147		%Rec	1	9/15/2022 4:21:00 PM	70174

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209635**
Date Reported: **10/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-13-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/13/2022 8:00:00 AM
Lab ID: 2209635-001D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	ND	0.0016	0.0030		mg/L	1	9/16/2022 12:30:34 PM	70179
Beryllium	ND	0.00088	0.0020		mg/L	1	9/15/2022 1:47:54 PM	70179
Cadmium	ND	0.0018	0.0020		mg/L	1	9/15/2022 1:47:54 PM	70179
Chromium	ND	0.0020	0.0060		mg/L	1	9/15/2022 1:47:54 PM	70179
Cobalt	ND	0.0035	0.0060		mg/L	1	9/15/2022 1:47:54 PM	70179
Nickel	ND	0.0053	0.010		mg/L	1	9/15/2022 1:47:54 PM	70179
Silver	ND	0.0018	0.0050		mg/L	1	9/15/2022 1:47:54 PM	70179
Vanadium	ND	0.0035	0.050		mg/L	1	9/15/2022 1:47:54 PM	70179
Zinc	ND	0.0039	0.010		mg/L	1	9/15/2022 1:47:54 PM	70179
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/16/2022 1:45:09 PM	70179
Arsenic	ND	0.00013	0.0010		mg/L	1	9/16/2022 1:45:09 PM	70179
Lead	ND	0.000061	0.00050		mg/L	1	9/16/2022 1:45:09 PM	70179
Selenium	ND	0.00037	0.0010		mg/L	1	9/16/2022 1:45:09 PM	70179
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/20/2022 3:02:07 PM	70278

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209635**
Date Reported: **10/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-13-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/13/2022 8:00:00 AM
Lab ID: 2209635-001E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	ND	0.0011	0.0020		mg/L	1	9/19/2022 5:25:32 PM	C91139
Beryllium	ND	0.00088	0.0020		mg/L	1	9/19/2022 5:25:32 PM	C91139
Cadmium	ND	0.00098	0.0020		mg/L	1	9/19/2022 5:25:32 PM	C91139
Chromium	ND	0.0020	0.0060		mg/L	1	9/19/2022 5:25:32 PM	C91139
Cobalt	ND	0.0024	0.0060		mg/L	1	9/19/2022 5:25:32 PM	C91139
Nickel	ND	0.0033	0.010		mg/L	1	9/19/2022 5:25:32 PM	C91139
Silver	ND	0.0013	0.0050		mg/L	1	9/19/2022 5:25:32 PM	C91139
Vanadium	ND	0.0017	0.050		mg/L	1	9/19/2022 5:25:32 PM	C91139
Zinc	0.0064	0.0032	0.010	J	mg/L	1	9/19/2022 5:25:32 PM	C91139
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/15/2022 4:56:56 PM	C91078
Arsenic	ND	0.00012	0.0010		mg/L	1	9/15/2022 4:56:56 PM	C91078
Lead	ND	0.000057	0.00050		mg/L	1	9/15/2022 4:56:56 PM	C91078
Selenium	ND	0.00034	0.0010		mg/L	1	9/15/2022 4:56:56 PM	C91078
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/20/2022 3:04:14 PM	70278

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209635**
Date Reported: **10/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-46
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/13/2022 8:30:00 AM
Lab ID: 2209635-002A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.025	0.0090	0.050	J	mg/L	1	9/16/2022 9:58:00 AM	A91113
Surr: BFB	103	0	70-130		%Rec	1	9/16/2022 9:58:00 AM	A91113
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	9/14/2022 7:56:00 PM	R91021
Toluene	ND	0.20	1.0		µg/L	1	9/14/2022 7:56:00 PM	R91021
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/14/2022 7:56:00 PM	R91021
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/14/2022 7:56:00 PM	R91021
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/14/2022 7:56:00 PM	R91021
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/14/2022 7:56:00 PM	R91021
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/14/2022 7:56:00 PM	R91021
Acetone	6.4	2.5	10	J	µg/L	1	9/14/2022 7:56:00 PM	R91021
Bromomethane	ND	0.85	3.0		µg/L	1	9/14/2022 7:56:00 PM	R91021
2-Butanone	ND	2.0	10		µg/L	1	9/14/2022 7:56:00 PM	R91021
Carbon disulfide	ND	0.59	10		µg/L	1	9/14/2022 7:56:00 PM	R91021
Chlorobenzene	0.29	0.16	1.0	J	µg/L	1	9/14/2022 7:56:00 PM	R91021
Chloroform	ND	0.13	1.0		µg/L	1	9/14/2022 7:56:00 PM	R91021
Chloromethane	ND	0.41	3.0		µg/L	1	9/14/2022 7:56:00 PM	R91021
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/14/2022 7:56:00 PM	R91021
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/14/2022 7:56:00 PM	R91021
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/14/2022 7:56:00 PM	R91021
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/14/2022 7:56:00 PM	R91021
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/14/2022 7:56:00 PM	R91021
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/14/2022 7:56:00 PM	R91021
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/14/2022 7:56:00 PM	R91021
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/14/2022 7:56:00 PM	R91021
sec-Butylbenzene	0.18	0.14	1.0	J	µg/L	1	9/14/2022 7:56:00 PM	R91021
Styrene	ND	0.14	1.0		µg/L	1	9/14/2022 7:56:00 PM	R91021
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/14/2022 7:56:00 PM	R91021
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/14/2022 7:56:00 PM	R91021
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/14/2022 7:56:00 PM	R91021
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/14/2022 7:56:00 PM	R91021
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/14/2022 7:56:00 PM	R91021
Surr: 1,2-Dichloroethane-d4	103	0	70-130		%Rec	1	9/14/2022 7:56:00 PM	R91021
Surr: 4-Bromofluorobenzene	90.3	0	70-130		%Rec	1	9/14/2022 7:56:00 PM	R91021
Surr: Dibromofluoromethane	104	0	70-130		%Rec	1	9/14/2022 7:56:00 PM	R91021
Surr: Toluene-d8	90.3	0	70-130		%Rec	1	9/14/2022 7:56:00 PM	R91021

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209635**
Date Reported: **10/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-46
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/13/2022 8:30:00 AM
Lab ID: 2209635-002B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0096		µg/L	1	9/16/2022 1:02:45 AM	70173

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209635**
Date Reported: **10/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-46
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/13/2022 8:30:00 AM
Lab ID: 2209635-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **JME**	
Diesel Range Organics (DRO)	0.068	0.016	0.064	E	mg/L	1	9/15/2022 5:01:34 PM	70190
Motor Oil Range Organics (MRO)	ND	0.052	0.080	E	mg/L	1	9/15/2022 5:01:34 PM	70190
Surr: DNOP	92.1	0	42.2-138		%Rec	1	9/15/2022 5:01:34 PM	70190
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	9/16/2022 6:24:39 PM	70174
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/16/2022 6:24:39 PM	70174
Di-n-butyl phthalate	15	7.7	10		µg/L	1	9/16/2022 6:24:39 PM	70174
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/16/2022 6:24:39 PM	70174
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/16/2022 6:24:39 PM	70174
Diethyl phthalate	ND	6.0	10		µg/L	1	9/16/2022 6:24:39 PM	70174
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/16/2022 6:24:39 PM	70174
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	9/16/2022 6:24:39 PM	70174
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/16/2022 6:24:39 PM	70174
2-Methylphenol	ND	5.0	10		µg/L	1	9/16/2022 6:24:39 PM	70174
3+4-Methylphenol	ND	5.1	10		µg/L	1	9/16/2022 6:24:39 PM	70174
Phenol	ND	18	20		µg/L	1	9/16/2022 6:24:39 PM	70174
Pyridine	ND	14	40		µg/L	1	9/16/2022 6:24:39 PM	70174
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/16/2022 6:24:39 PM	70174
Surr: 2-Fluorophenol	27.5	0	15-84.5		%Rec	1	9/16/2022 6:24:39 PM	70174
Surr: Phenol-d5	22.2	0	15-67		%Rec	1	9/16/2022 6:24:39 PM	70174
Surr: 2,4,6-Tribromophenol	40.0	0	15-108		%Rec	1	9/16/2022 6:24:39 PM	70174
Surr: Nitrobenzene-d5	36.2	0	16.8-112		%Rec	1	9/16/2022 6:24:39 PM	70174
Surr: 2-Fluorobiphenyl	36.4	0	15-101		%Rec	1	9/16/2022 6:24:39 PM	70174
Surr: 4-Terphenyl-d14	46.8	0	34.4-134		%Rec	1	9/16/2022 6:24:39 PM	70174
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	0.98	0.11	1.0	J	µg/L	1	9/15/2022 5:05:00 PM	70174
Naphthalene	ND	0.20	0.30		µg/L	1	9/15/2022 5:05:00 PM	70174
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	9/15/2022 5:05:00 PM	70174
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	9/15/2022 5:05:00 PM	70174
Acenaphthene	ND	0.14	0.30		µg/L	1	9/15/2022 5:05:00 PM	70174
Fluorene	ND	0.095	0.30		µg/L	1	9/15/2022 5:05:00 PM	70174
Phenanthrene	ND	0.16	0.30		µg/L	1	9/15/2022 5:05:00 PM	70174
Anthracene	ND	0.14	0.30		µg/L	1	9/15/2022 5:05:00 PM	70174
Fluoranthene	ND	0.14	0.30		µg/L	1	9/15/2022 5:05:00 PM	70174
Pyrene	0.40	0.32	1.0	J	µg/L	1	9/15/2022 5:05:00 PM	70174
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/15/2022 5:05:00 PM	70174
Chrysene	ND	0.25	0.30		µg/L	1	9/15/2022 5:05:00 PM	70174
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/15/2022 5:05:00 PM	70174
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/15/2022 5:05:00 PM	70174

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209635**
Date Reported: **10/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-46
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/13/2022 8:30:00 AM
Lab ID: 2209635-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	37.7	0	31.6-100		%Rec	1	9/15/2022 5:05:00 PM	70174
Surr: 2-Fluorobiphenyl	39.9	0	26.7-90.1		%Rec	1	9/15/2022 5:05:00 PM	70174
Surr: 4-Terphenyl-d14	42.0	0	72.3-147	S	%Rec	1	9/15/2022 5:05:00 PM	70174

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209635**
Date Reported: **10/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-46
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/13/2022 8:30:00 AM
Lab ID: 2209635-002D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.068	0.0016	0.0030		mg/L	1	9/16/2022 12:32:14 PM	70179
Beryllium	ND	0.00088	0.0020		mg/L	1	9/15/2022 1:51:15 PM	70179
Cadmium	ND	0.0018	0.0020		mg/L	1	9/15/2022 1:51:15 PM	70179
Chromium	ND	0.0020	0.0060		mg/L	1	9/15/2022 1:51:15 PM	70179
Cobalt	0.013	0.0035	0.0060		mg/L	1	9/15/2022 1:51:15 PM	70179
Nickel	ND	0.0053	0.010		mg/L	1	9/15/2022 1:51:15 PM	70179
Silver	ND	0.0018	0.0050		mg/L	1	9/15/2022 1:51:15 PM	70179
Vanadium	0.0043	0.0035	0.050	J	mg/L	1	9/15/2022 1:51:15 PM	70179
Zinc	0.0072	0.0039	0.010	J	mg/L	1	9/15/2022 1:51:15 PM	70179
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/16/2022 1:47:36 PM	70179
Arsenic	0.00082	0.00013	0.0010	J	mg/L	1	9/16/2022 1:47:36 PM	70179
Lead	0.00073	0.000061	0.00050		mg/L	1	9/16/2022 1:47:36 PM	70179
Selenium	0.00040	0.00037	0.0010	J	mg/L	1	9/16/2022 1:47:36 PM	70179
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00010	0.000091	0.00020	J	mg/L	1	9/20/2022 3:06:21 PM	70278

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209635**
Date Reported: **10/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-46
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/13/2022 8:30:00 AM
Lab ID: 2209635-002E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.037	0.0011	0.0020		mg/L	1	9/19/2022 5:46:24 PM	C91139
Beryllium	0.00097	0.00088	0.0020	J	mg/L	1	9/19/2022 5:46:24 PM	C91139
Cadmium	ND	0.00098	0.0020		mg/L	1	9/19/2022 5:46:24 PM	C91139
Chromium	ND	0.0020	0.0060		mg/L	1	9/19/2022 5:46:24 PM	C91139
Cobalt	ND	0.0024	0.0060		mg/L	1	9/19/2022 5:46:24 PM	C91139
Nickel	ND	0.0033	0.010		mg/L	1	9/19/2022 5:46:24 PM	C91139
Silver	0.0039	0.0013	0.0050	J	mg/L	1	9/19/2022 5:46:24 PM	C91139
Vanadium	0.0056	0.0017	0.050	J	mg/L	1	9/19/2022 5:46:24 PM	C91139
Zinc	0.0099	0.0032	0.010	J	mg/L	1	9/19/2022 5:46:24 PM	C91139
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/15/2022 4:59:37 PM	C91078
Arsenic	0.00077	0.00012	0.0010	J	mg/L	1	9/15/2022 4:59:37 PM	C91078
Lead	ND	0.000057	0.00050		mg/L	1	9/15/2022 4:59:37 PM	C91078
Selenium	ND	0.00034	0.0010		mg/L	1	9/15/2022 4:59:37 PM	C91078
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/20/2022 3:08:29 PM	70278

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209635**
Date Reported: **10/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18R
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/13/2022 9:15:00 AM
Lab ID: 2209635-003A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	8.1	0.18	1.0		mg/L	20	9/16/2022 10:17:00 AM	A91113
Surr: BFB	114	0	70-130		%Rec	20	9/16/2022 10:17:00 AM	A91113
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	1800	23	100		µg/L	100	9/14/2022 8:19:00 PM	R91021
Toluene	570	2.0	10		µg/L	10	9/14/2022 8:42:00 PM	R91021
Ethylbenzene	49	2.1	10		µg/L	10	9/14/2022 8:42:00 PM	R91021
Methyl tert-butyl ether (MTBE)	130	3.9	10		µg/L	10	9/14/2022 8:42:00 PM	R91021
1,2,4-Trimethylbenzene	44	1.2	10		µg/L	10	9/14/2022 8:42:00 PM	R91021
1,3,5-Trimethylbenzene	15	1.8	10		µg/L	10	9/14/2022 8:42:00 PM	R91021
1,2-Dichloroethane (EDC)	ND	2.5	10		µg/L	10	9/14/2022 8:42:00 PM	R91021
Acetone	ND	25	100		µg/L	10	9/14/2022 8:42:00 PM	R91021
Bromomethane	ND	8.5	30		µg/L	10	9/14/2022 8:42:00 PM	R91021
2-Butanone	ND	20	100		µg/L	10	9/14/2022 8:42:00 PM	R91021
Carbon disulfide	ND	5.9	100		µg/L	10	9/14/2022 8:42:00 PM	R91021
Chlorobenzene	ND	1.6	10		µg/L	10	9/14/2022 8:42:00 PM	R91021
Chloroform	ND	1.3	10		µg/L	10	9/14/2022 8:42:00 PM	R91021
Chloromethane	ND	4.1	30		µg/L	10	9/14/2022 8:42:00 PM	R91021
cis-1,2-DCE	8.7	3.9	10	J	µg/L	10	9/14/2022 8:42:00 PM	R91021
1,1-Dichloroethane	ND	2.7	10		µg/L	10	9/14/2022 8:42:00 PM	R91021
1,1-Dichloroethene	ND	2.0	10		µg/L	10	9/14/2022 8:42:00 PM	R91021
Isopropylbenzene	3.7	1.8	10	J	µg/L	10	9/14/2022 8:42:00 PM	R91021
4-Isopropyltoluene	2.3	2.0	10	J	µg/L	10	9/14/2022 8:42:00 PM	R91021
Methylene Chloride	ND	5.0	30		µg/L	10	9/14/2022 8:42:00 PM	R91021
n-Butylbenzene	3.3	2.5	30	J	µg/L	10	9/14/2022 8:42:00 PM	R91021
n-Propylbenzene	4.9	1.8	10	J	µg/L	10	9/14/2022 8:42:00 PM	R91021
sec-Butylbenzene	2.2	1.4	10	J	µg/L	10	9/14/2022 8:42:00 PM	R91021
Styrene	ND	1.4	10		µg/L	10	9/14/2022 8:42:00 PM	R91021
Tetrachloroethene (PCE)	ND	3.6	10		µg/L	10	9/14/2022 8:42:00 PM	R91021
1,1,1-Trichloroethane	ND	3.0	10		µg/L	10	9/14/2022 8:42:00 PM	R91021
Trichloroethene (TCE)	ND	2.0	10		µg/L	10	9/14/2022 8:42:00 PM	R91021
Vinyl chloride	ND	3.2	10		µg/L	10	9/14/2022 8:42:00 PM	R91021
Xylenes, Total	430	3.7	15		µg/L	10	9/14/2022 8:42:00 PM	R91021
Surr: 1,2-Dichloroethane-d4	94.5	0	70-130		%Rec	10	9/14/2022 8:42:00 PM	R91021
Surr: 4-Bromofluorobenzene	91.7	0	70-130		%Rec	10	9/14/2022 8:42:00 PM	R91021
Surr: Dibromofluoromethane	93.8	0	70-130		%Rec	10	9/14/2022 8:42:00 PM	R91021
Surr: Toluene-d8	94.1	0	70-130		%Rec	10	9/14/2022 8:42:00 PM	R91021

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209635**
Date Reported: **10/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18R
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/13/2022 9:15:00 AM
Lab ID: 2209635-003B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	9/16/2022 2:03:38 AM	70173

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209635**
Date Reported: **10/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18R
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/13/2022 9:15:00 AM
Lab ID: 2209635-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **JME**	
Diesel Range Organics (DRO)	3.1	0.016	0.064	E	mg/L	1	9/15/2022 5:25:21 PM	70190
Motor Oil Range Organics (MRO)	ND	0.052	0.080	E	mg/L	1	9/15/2022 5:25:21 PM	70190
Surr: DNOP	103	0	42.2-138		%Rec	1	9/15/2022 5:25:21 PM	70190
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	9/16/2022 7:07:48 PM	70174
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/16/2022 7:07:48 PM	70174
Di-n-butyl phthalate	27	7.7	10		µg/L	1	9/16/2022 7:07:48 PM	70174
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/16/2022 7:07:48 PM	70174
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/16/2022 7:07:48 PM	70174
Diethyl phthalate	ND	6.0	10		µg/L	1	9/16/2022 7:07:48 PM	70174
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/16/2022 7:07:48 PM	70174
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	9/16/2022 7:07:48 PM	70174
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/16/2022 7:07:48 PM	70174
1-Methylnaphthalene	85	4.3	5.0		µg/L	1	9/16/2022 7:07:48 PM	70174
2-Methylnaphthalene	90	4.2	5.0		µg/L	1	9/16/2022 7:07:48 PM	70174
2-Methylphenol	19	5.0	10		µg/L	1	9/16/2022 7:07:48 PM	70174
3+4-Methylphenol	5.9	5.1	10	J	µg/L	1	9/16/2022 7:07:48 PM	70174
Naphthalene	54	3.2	5.0		µg/L	1	9/16/2022 7:07:48 PM	70174
Phenol	ND	18	20		µg/L	1	9/16/2022 7:07:48 PM	70174
Pyridine	ND	14	40		µg/L	1	9/16/2022 7:07:48 PM	70174
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/16/2022 7:07:48 PM	70174
Surr: 2-Fluorophenol	32.4	0	15-84.5		%Rec	1	9/16/2022 7:07:48 PM	70174
Surr: Phenol-d5	24.9	0	15-67		%Rec	1	9/16/2022 7:07:48 PM	70174
Surr: 2,4,6-Tribromophenol	58.2	0	15-108		%Rec	1	9/16/2022 7:07:48 PM	70174
Surr: Nitrobenzene-d5	44.9	0	16.8-112		%Rec	1	9/16/2022 7:07:48 PM	70174
Surr: 2-Fluorobiphenyl	50.6	0	15-101		%Rec	1	9/16/2022 7:07:48 PM	70174
Surr: 4-Terphenyl-d14	63.3	0	34.4-134		%Rec	1	9/16/2022 7:07:48 PM	70174
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	16	0.11	1.0		µg/L	1	9/15/2022 5:49:00 PM	70174
Acenaphthene	6.2	0.14	0.30		µg/L	1	9/15/2022 5:49:00 PM	70174
Fluorene	8.2	0.095	0.30		µg/L	1	9/15/2022 5:49:00 PM	70174
Phenanthrene	7.5	0.16	0.30		µg/L	1	9/15/2022 5:49:00 PM	70174
Anthracene	0.58	0.14	0.30		µg/L	1	9/15/2022 5:49:00 PM	70174
Fluoranthene	0.28	0.14	0.30	J	µg/L	1	9/15/2022 5:49:00 PM	70174
Pyrene	0.64	0.32	1.0	J	µg/L	1	9/15/2022 5:49:00 PM	70174
Benz(a)anthracene	0.18	0.15	0.30	J	µg/L	1	9/15/2022 5:49:00 PM	70174
Chrysene	ND	0.25	0.30		µg/L	1	9/15/2022 5:49:00 PM	70174
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/15/2022 5:49:00 PM	70174
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/15/2022 5:49:00 PM	70174

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209635**
Date Reported: **10/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18R
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/13/2022 9:15:00 AM
Lab ID: 2209635-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	52.4	0	31.6-100		%Rec	1	9/15/2022 5:49:00 PM	70174
Surr: 2-Fluorobiphenyl	46.3	0	26.7-90.1		%Rec	1	9/15/2022 5:49:00 PM	70174
Surr: 4-Terphenyl-d14	48.7	0	72.3-147	S	%Rec	1	9/15/2022 5:49:00 PM	70174

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209635**
Date Reported: **10/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18R
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/13/2022 9:15:00 AM
Lab ID: 2209635-003D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	2.0	0.0079	0.015	*	mg/L	5	9/16/2022 12:33:53 PM	70179
Beryllium	ND	0.00088	0.0020		mg/L	1	9/15/2022 1:54:36 PM	70179
Cadmium	ND	0.0018	0.0020		mg/L	1	9/15/2022 1:54:36 PM	70179
Chromium	ND	0.0020	0.0060		mg/L	1	9/15/2022 1:54:36 PM	70179
Cobalt	0.0097	0.0035	0.0060		mg/L	1	9/15/2022 1:54:36 PM	70179
Nickel	0.0074	0.0053	0.010	J	mg/L	1	9/15/2022 1:54:36 PM	70179
Silver	ND	0.0018	0.0050		mg/L	1	9/15/2022 1:54:36 PM	70179
Vanadium	0.0089	0.0035	0.050	J	mg/L	1	9/15/2022 1:54:36 PM	70179
Zinc	0.028	0.0039	0.010		mg/L	1	9/15/2022 1:54:36 PM	70179
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/16/2022 1:50:02 PM	70179
Arsenic	0.0072	0.00013	0.0010		mg/L	1	9/16/2022 1:50:02 PM	70179
Lead	0.0024	0.000061	0.00050		mg/L	1	9/16/2022 1:50:02 PM	70179
Selenium	0.00046	0.00037	0.0010	J	mg/L	1	9/16/2022 1:50:02 PM	70179
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/20/2022 3:10:38 PM	70278

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209635**
Date Reported: **10/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18R
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/13/2022 9:15:00 AM
Lab ID: 2209635-003E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	1.7	0.0056	0.010		mg/L	5	9/19/2022 5:52:54 PM	C91139
Beryllium	ND	0.00088	0.0020		mg/L	1	9/19/2022 5:50:56 PM	C91139
Cadmium	ND	0.00098	0.0020		mg/L	1	9/19/2022 5:50:56 PM	C91139
Chromium	ND	0.0020	0.0060		mg/L	1	9/19/2022 5:50:56 PM	C91139
Cobalt	ND	0.0024	0.0060		mg/L	1	9/19/2022 5:50:56 PM	C91139
Nickel	0.0041	0.0033	0.010	J	mg/L	1	9/19/2022 5:50:56 PM	C91139
Silver	0.0015	0.0013	0.0050	J	mg/L	1	9/19/2022 5:50:56 PM	C91139
Vanadium	0.0017	0.0017	0.050	J	mg/L	1	9/19/2022 5:50:56 PM	C91139
Zinc	0.0093	0.0032	0.010	J	mg/L	1	9/19/2022 5:50:56 PM	C91139
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/15/2022 5:02:18 PM	C91078
Arsenic	0.0073	0.00012	0.0010		mg/L	1	9/15/2022 5:02:18 PM	C91078
Lead	ND	0.000057	0.00050		mg/L	1	9/15/2022 5:02:18 PM	C91078
Selenium	ND	0.00034	0.0010		mg/L	1	9/15/2022 5:02:18 PM	C91078
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/20/2022 3:12:48 PM	70278

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209635**
Date Reported: **10/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/13/2022 9:35:00 AM
Lab ID: 2209635-004A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.35	0.0090	0.050		mg/L	1	9/16/2022 10:37:00 AM	A91113
Surr: BFB	162	0	70-130	S	%Rec	1	9/16/2022 10:37:00 AM	A91113
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	16	0.23	1.0		µg/L	1	9/14/2022 9:28:00 PM	R91021
Toluene	ND	0.20	1.0		µg/L	1	9/14/2022 9:28:00 PM	R91021
Ethylbenzene	4.5	0.21	1.0		µg/L	1	9/14/2022 9:28:00 PM	R91021
Methyl tert-butyl ether (MTBE)	1.1	0.39	1.0		µg/L	1	9/14/2022 9:28:00 PM	R91021
1,2,4-Trimethylbenzene	45	0.12	1.0		µg/L	1	9/14/2022 9:28:00 PM	R91021
1,3,5-Trimethylbenzene	10	0.18	1.0		µg/L	1	9/14/2022 9:28:00 PM	R91021
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/14/2022 9:28:00 PM	R91021
Acetone	19	2.5	10		µg/L	1	9/14/2022 9:28:00 PM	R91021
Bromomethane	ND	0.85	3.0		µg/L	1	9/14/2022 9:28:00 PM	R91021
2-Butanone	ND	2.0	10		µg/L	1	9/14/2022 9:28:00 PM	R91021
Carbon disulfide	ND	0.59	10		µg/L	1	9/14/2022 9:28:00 PM	R91021
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/14/2022 9:28:00 PM	R91021
Chloroform	ND	0.13	1.0		µg/L	1	9/14/2022 9:28:00 PM	R91021
Chloromethane	1.8	0.41	3.0	J	µg/L	1	9/14/2022 9:28:00 PM	R91021
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/14/2022 9:28:00 PM	R91021
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/14/2022 9:28:00 PM	R91021
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/14/2022 9:28:00 PM	R91021
Isopropylbenzene	3.7	0.18	1.0		µg/L	1	9/14/2022 9:28:00 PM	R91021
4-Isopropyltoluene	1.6	0.20	1.0		µg/L	1	9/14/2022 9:28:00 PM	R91021
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/14/2022 9:28:00 PM	R91021
n-Butylbenzene	1.2	0.25	3.0	J	µg/L	1	9/14/2022 9:28:00 PM	R91021
n-Propylbenzene	4.0	0.18	1.0		µg/L	1	9/14/2022 9:28:00 PM	R91021
sec-Butylbenzene	1.3	0.14	1.0		µg/L	1	9/14/2022 9:28:00 PM	R91021
Styrene	ND	0.14	1.0		µg/L	1	9/14/2022 9:28:00 PM	R91021
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/14/2022 9:28:00 PM	R91021
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/14/2022 9:28:00 PM	R91021
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/14/2022 9:28:00 PM	R91021
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/14/2022 9:28:00 PM	R91021
Xylenes, Total	8.6	0.37	1.5		µg/L	1	9/14/2022 9:28:00 PM	R91021
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%Rec	1	9/14/2022 9:28:00 PM	R91021
Surr: 4-Bromofluorobenzene	89.9	0	70-130		%Rec	1	9/14/2022 9:28:00 PM	R91021
Surr: Dibromofluoromethane	97.6	0	70-130		%Rec	1	9/14/2022 9:28:00 PM	R91021
Surr: Toluene-d8	92.1	0	70-130		%Rec	1	9/14/2022 9:28:00 PM	R91021

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209635**
Date Reported: **10/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/13/2022 9:35:00 AM
Lab ID: 2209635-004B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	9/16/2022 3:04:22 AM	70173

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209635**
Date Reported: **10/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/13/2022 9:35:00 AM
Lab ID: 2209635-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **JME**	
Diesel Range Organics (DRO)	0.73	0.016	0.064	E	mg/L	1	9/15/2022 5:49:05 PM	70190
Motor Oil Range Organics (MRO)	ND	0.052	0.080	E	mg/L	1	9/15/2022 5:49:05 PM	70190
Surr: DNOP	86.2	0	42.2-138		%Rec	1	9/15/2022 5:49:05 PM	70190
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	9/16/2022 7:50:47 PM	70174
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/16/2022 7:50:47 PM	70174
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	9/16/2022 7:50:47 PM	70174
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/16/2022 7:50:47 PM	70174
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/16/2022 7:50:47 PM	70174
Diethyl phthalate	ND	6.0	10		µg/L	1	9/16/2022 7:50:47 PM	70174
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/16/2022 7:50:47 PM	70174
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	9/16/2022 7:50:47 PM	70174
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/16/2022 7:50:47 PM	70174
2-Methylphenol	ND	5.0	10		µg/L	1	9/16/2022 7:50:47 PM	70174
3+4-Methylphenol	ND	5.1	10		µg/L	1	9/16/2022 7:50:47 PM	70174
Phenol	ND	18	20		µg/L	1	9/16/2022 7:50:47 PM	70174
Pyridine	ND	14	40		µg/L	1	9/16/2022 7:50:47 PM	70174
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/16/2022 7:50:47 PM	70174
Surr: 2-Fluorophenol	40.6	0	15-84.5		%Rec	1	9/16/2022 7:50:47 PM	70174
Surr: Phenol-d5	33.7	0	15-67		%Rec	1	9/16/2022 7:50:47 PM	70174
Surr: 2,4,6-Tribromophenol	46.5	0	15-108		%Rec	1	9/16/2022 7:50:47 PM	70174
Surr: Nitrobenzene-d5	54.5	0	16.8-112		%Rec	1	9/16/2022 7:50:47 PM	70174
Surr: 2-Fluorobiphenyl	53.1	0	15-101		%Rec	1	9/16/2022 7:50:47 PM	70174
Surr: 4-Terphenyl-d14	61.4	0	34.4-134		%Rec	1	9/16/2022 7:50:47 PM	70174
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	1.7	0.11	1.0		µg/L	1	9/15/2022 6:35:00 PM	70174
Naphthalene	13	0.20	0.30		µg/L	1	9/15/2022 6:35:00 PM	70174
1-Methylnaphthalene	10	0.15	0.30		µg/L	1	9/15/2022 6:35:00 PM	70174
2-Methylnaphthalene	9.2	0.14	0.30		µg/L	1	9/15/2022 6:35:00 PM	70174
Acenaphthene	0.40	0.14	0.30		µg/L	1	9/15/2022 6:35:00 PM	70174
Fluorene	0.76	0.095	0.30		µg/L	1	9/15/2022 6:35:00 PM	70174
Phenanthrene	0.16	0.16	0.30	J	µg/L	1	9/15/2022 6:35:00 PM	70174
Anthracene	0.32	0.14	0.30		µg/L	1	9/15/2022 6:35:00 PM	70174
Fluoranthene	ND	0.14	0.30		µg/L	1	9/15/2022 6:35:00 PM	70174
Pyrene	ND	0.32	1.0		µg/L	1	9/15/2022 6:35:00 PM	70174
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/15/2022 6:35:00 PM	70174
Chrysene	ND	0.25	0.30		µg/L	1	9/15/2022 6:35:00 PM	70174
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/15/2022 6:35:00 PM	70174
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/15/2022 6:35:00 PM	70174

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209635**
Date Reported: **10/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/13/2022 9:35:00 AM
Lab ID: 2209635-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	60.9	0	31.6-100		%Rec	1	9/15/2022 6:35:00 PM	70174
Surr: 2-Fluorobiphenyl	51.8	0	26.7-90.1		%Rec	1	9/15/2022 6:35:00 PM	70174
Surr: 4-Terphenyl-d14	52.8	0	72.3-147	S	%Rec	1	9/15/2022 6:35:00 PM	70174

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209635**
Date Reported: **10/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/13/2022 9:35:00 AM
Lab ID: 2209635-004D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.58	0.0016	0.0030		mg/L	1	9/16/2022 12:35:30 PM	70179
Beryllium	ND	0.00088	0.0020		mg/L	1	9/15/2022 1:57:45 PM	70179
Cadmium	ND	0.0018	0.0020		mg/L	1	9/15/2022 1:57:45 PM	70179
Chromium	0.0063	0.0020	0.0060		mg/L	1	9/15/2022 1:57:45 PM	70179
Cobalt	0.0094	0.0035	0.0060		mg/L	1	9/15/2022 1:57:45 PM	70179
Nickel	ND	0.0053	0.010		mg/L	1	9/15/2022 1:57:45 PM	70179
Silver	ND	0.0018	0.0050		mg/L	1	9/15/2022 1:57:45 PM	70179
Vanadium	0.023	0.0035	0.050	J	mg/L	1	9/15/2022 1:57:45 PM	70179
Zinc	0.013	0.0039	0.010		mg/L	1	9/15/2022 1:57:45 PM	70179
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/16/2022 1:52:29 PM	70179
Arsenic	0.0070	0.00013	0.0010		mg/L	1	9/16/2022 1:52:29 PM	70179
Lead	0.0091	0.000061	0.00050		mg/L	1	9/16/2022 1:52:29 PM	70179
Selenium	0.0026	0.00037	0.0010		mg/L	1	9/16/2022 1:52:29 PM	70179
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/20/2022 3:14:58 PM	70278

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209635**
Date Reported: **10/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/13/2022 9:35:00 AM
Lab ID: 2209635-004E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.13	0.0011	0.0020		mg/L	1	9/19/2022 5:55:04 PM	C91139
Beryllium	ND	0.00088	0.0020		mg/L	1	9/19/2022 5:55:04 PM	C91139
Cadmium	ND	0.00098	0.0020		mg/L	1	9/19/2022 5:55:04 PM	C91139
Chromium	ND	0.0020	0.0060		mg/L	1	9/19/2022 5:55:04 PM	C91139
Cobalt	ND	0.0024	0.0060		mg/L	1	9/19/2022 5:55:04 PM	C91139
Nickel	0.0040	0.0033	0.010	J	mg/L	1	9/19/2022 5:55:04 PM	C91139
Silver	0.0040	0.0013	0.0050	J	mg/L	1	9/19/2022 5:55:04 PM	C91139
Vanadium	0.0040	0.0017	0.050	J	mg/L	1	9/19/2022 5:55:04 PM	C91139
Zinc	0.015	0.0032	0.010		mg/L	1	9/19/2022 5:55:04 PM	C91139
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/15/2022 5:04:58 PM	C91078
Arsenic	0.0054	0.00012	0.0010		mg/L	1	9/15/2022 5:04:58 PM	C91078
Lead	0.00021	0.000057	0.00050	J	mg/L	1	9/15/2022 5:04:58 PM	C91078
Selenium	0.00075	0.00034	0.0010	J	mg/L	1	9/15/2022 5:04:58 PM	C91078
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/20/2022 3:17:05 PM	70278

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209635**
Date Reported: **10/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/13/2022 9:55:00 AM
Lab ID: 2209635-005A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	9/16/2022 10:57:00 AM	A91113
Surr: BFB	102	0	70-130		%Rec	1	9/16/2022 10:57:00 AM	A91113
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	9/14/2022 9:51:00 PM	R91021
Toluene	ND	0.20	1.0		µg/L	1	9/14/2022 9:51:00 PM	R91021
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/14/2022 9:51:00 PM	R91021
Methyl tert-butyl ether (MTBE)	0.73	0.39	1.0	J	µg/L	1	9/14/2022 9:51:00 PM	R91021
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/14/2022 9:51:00 PM	R91021
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/14/2022 9:51:00 PM	R91021
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/14/2022 9:51:00 PM	R91021
Acetone	ND	2.5	10		µg/L	1	9/14/2022 9:51:00 PM	R91021
Bromomethane	ND	0.85	3.0		µg/L	1	9/14/2022 9:51:00 PM	R91021
2-Butanone	ND	2.0	10		µg/L	1	9/14/2022 9:51:00 PM	R91021
Carbon disulfide	ND	0.59	10		µg/L	1	9/14/2022 9:51:00 PM	R91021
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/14/2022 9:51:00 PM	R91021
Chloroform	ND	0.13	1.0		µg/L	1	9/14/2022 9:51:00 PM	R91021
Chloromethane	ND	0.41	3.0		µg/L	1	9/14/2022 9:51:00 PM	R91021
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/14/2022 9:51:00 PM	R91021
1,1-Dichloroethane	0.96	0.27	1.0	J	µg/L	1	9/14/2022 9:51:00 PM	R91021
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/14/2022 9:51:00 PM	R91021
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/14/2022 9:51:00 PM	R91021
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/14/2022 9:51:00 PM	R91021
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/14/2022 9:51:00 PM	R91021
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/14/2022 9:51:00 PM	R91021
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/14/2022 9:51:00 PM	R91021
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/14/2022 9:51:00 PM	R91021
Styrene	ND	0.14	1.0		µg/L	1	9/14/2022 9:51:00 PM	R91021
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/14/2022 9:51:00 PM	R91021
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/14/2022 9:51:00 PM	R91021
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/14/2022 9:51:00 PM	R91021
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/14/2022 9:51:00 PM	R91021
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/14/2022 9:51:00 PM	R91021
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%Rec	1	9/14/2022 9:51:00 PM	R91021
Surr: 4-Bromofluorobenzene	86.9	0	70-130		%Rec	1	9/14/2022 9:51:00 PM	R91021
Surr: Dibromofluoromethane	101	0	70-130		%Rec	1	9/14/2022 9:51:00 PM	R91021
Surr: Toluene-d8	90.0	0	70-130		%Rec	1	9/14/2022 9:51:00 PM	R91021

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209635**
Date Reported: **10/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/13/2022 9:55:00 AM
Lab ID: 2209635-005B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	9/16/2022 4:04:58 AM	70173

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209635**
Date Reported: **10/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/13/2022 9:55:00 AM
Lab ID: 2209635-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **JME**	
Diesel Range Organics (DRO)	0.050	0.016	0.064	JE	mg/L	1	9/15/2022 6:12:50 PM	70190
Motor Oil Range Organics (MRO)	ND	0.052	0.080	E	mg/L	1	9/15/2022 6:12:50 PM	70190
Surr: DNOP	101	0	42.2-138		%Rec	1	9/15/2022 6:12:50 PM	70190
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	9/22/2022 1:47:46 PM	70174
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/22/2022 1:47:46 PM	70174
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	9/22/2022 1:47:46 PM	70174
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/22/2022 1:47:46 PM	70174
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/22/2022 1:47:46 PM	70174
Diethyl phthalate	ND	6.0	10		µg/L	1	9/22/2022 1:47:46 PM	70174
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/22/2022 1:47:46 PM	70174
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	9/22/2022 1:47:46 PM	70174
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/22/2022 1:47:46 PM	70174
2-Methylphenol	ND	5.0	10		µg/L	1	9/22/2022 1:47:46 PM	70174
3+4-Methylphenol	ND	5.1	10		µg/L	1	9/22/2022 1:47:46 PM	70174
Phenol	ND	18	20		µg/L	1	9/22/2022 1:47:46 PM	70174
Pyridine	ND	14	40		µg/L	1	9/22/2022 1:47:46 PM	70174
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/22/2022 1:47:46 PM	70174
Surr: 2-Fluorophenol	18.6	0	15-84.5		%Rec	1	9/22/2022 1:47:46 PM	70174
Surr: Phenol-d5	27.9	0	15-67		%Rec	1	9/22/2022 1:47:46 PM	70174
Surr: 2,4,6-Tribromophenol	11.7	0	15-108	S	%Rec	1	9/22/2022 1:47:46 PM	70174
Surr: Nitrobenzene-d5	64.1	0	16.8-112		%Rec	1	9/22/2022 1:47:46 PM	70174
Surr: 2-Fluorobiphenyl	58.3	0	15-101		%Rec	1	9/22/2022 1:47:46 PM	70174
Surr: 4-Terphenyl-d14	72.7	0	34.4-134		%Rec	1	9/22/2022 1:47:46 PM	70174
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	11	0.11	1.0		µg/L	1	9/15/2022 7:23:00 PM	70174
Naphthalene	ND	0.20	0.30		µg/L	1	9/15/2022 7:23:00 PM	70174
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	9/15/2022 7:23:00 PM	70174
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	9/15/2022 7:23:00 PM	70174
Acenaphthene	ND	0.14	0.30		µg/L	1	9/15/2022 7:23:00 PM	70174
Fluorene	ND	0.095	0.30		µg/L	1	9/15/2022 7:23:00 PM	70174
Phenanthrene	ND	0.16	0.30		µg/L	1	9/15/2022 7:23:00 PM	70174
Anthracene	ND	0.14	0.30		µg/L	1	9/15/2022 7:23:00 PM	70174
Fluoranthene	ND	0.14	0.30		µg/L	1	9/15/2022 7:23:00 PM	70174
Pyrene	ND	0.32	1.0		µg/L	1	9/15/2022 7:23:00 PM	70174
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/15/2022 7:23:00 PM	70174
Chrysene	ND	0.25	0.30		µg/L	1	9/15/2022 7:23:00 PM	70174
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/15/2022 7:23:00 PM	70174
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/15/2022 7:23:00 PM	70174

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209635**
Date Reported: **10/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/13/2022 9:55:00 AM
Lab ID: 2209635-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	66.4	0	31.6-100		%Rec	1	9/15/2022 7:23:00 PM	70174
Surr: 2-Fluorobiphenyl	59.7	0	26.7-90.1		%Rec	1	9/15/2022 7:23:00 PM	70174
Surr: 4-Terphenyl-d14	62.4	0	72.3-147	S	%Rec	1	9/15/2022 7:23:00 PM	70174

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209635**
Date Reported: **10/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/13/2022 9:55:00 AM
Lab ID: 2209635-005D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.16	0.0016	0.0030		mg/L	1	9/16/2022 12:36:54 PM	70179
Beryllium	ND	0.00088	0.0020		mg/L	1	9/15/2022 2:05:51 PM	70179
Cadmium	ND	0.0018	0.0020		mg/L	1	9/15/2022 2:05:51 PM	70179
Chromium	ND	0.0020	0.0060		mg/L	1	9/15/2022 2:05:51 PM	70179
Cobalt	0.012	0.0035	0.0060		mg/L	1	9/15/2022 2:05:51 PM	70179
Nickel	0.0059	0.0053	0.010	J	mg/L	1	9/15/2022 2:05:51 PM	70179
Silver	ND	0.0018	0.0050		mg/L	1	9/15/2022 2:05:51 PM	70179
Vanadium	0.023	0.0035	0.050	J	mg/L	1	9/15/2022 2:05:51 PM	70179
Zinc	0.0096	0.0039	0.010	J	mg/L	1	9/15/2022 2:05:51 PM	70179
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/16/2022 1:54:55 PM	70179
Arsenic	0.0011	0.00013	0.0010		mg/L	1	9/16/2022 1:54:55 PM	70179
Lead	0.0034	0.000061	0.00050		mg/L	1	9/16/2022 1:54:55 PM	70179
Selenium	0.00088	0.00037	0.0010	J	mg/L	1	9/16/2022 1:54:55 PM	70179
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/20/2022 3:19:13 PM	70278

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209635**
Date Reported: **10/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/13/2022 9:55:00 AM
Lab ID: 2209635-005E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.048	0.0011	0.0020		mg/L	1	9/19/2022 5:59:32 PM	C91139
Beryllium	ND	0.00088	0.0020		mg/L	1	9/19/2022 5:59:32 PM	C91139
Cadmium	ND	0.00098	0.0020		mg/L	1	9/19/2022 5:59:32 PM	C91139
Chromium	ND	0.0020	0.0060		mg/L	1	9/19/2022 5:59:32 PM	C91139
Cobalt	ND	0.0024	0.0060		mg/L	1	9/19/2022 5:59:32 PM	C91139
Nickel	0.0088	0.0033	0.010	J	mg/L	1	9/19/2022 5:59:32 PM	C91139
Silver	0.0066	0.0013	0.0050		mg/L	1	9/19/2022 5:59:32 PM	C91139
Vanadium	0.011	0.0017	0.050	J	mg/L	1	9/19/2022 5:59:32 PM	C91139
Zinc	0.0077	0.0032	0.010	J	mg/L	1	9/19/2022 5:59:32 PM	C91139
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/15/2022 5:07:39 PM	C91078
Arsenic	0.00066	0.00012	0.0010	J	mg/L	1	9/15/2022 5:07:39 PM	C91078
Lead	ND	0.000057	0.00050		mg/L	1	9/15/2022 5:07:39 PM	C91078
Selenium	0.00039	0.00034	0.0010	J	mg/L	1	9/15/2022 5:07:39 PM	C91078
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/20/2022 3:21:21 PM	70278

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209635**
Date Reported: **10/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/13/2022 10:15:00 AM
Lab ID: 2209635-006A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.48	0.0090	0.050		mg/L	1	9/16/2022 11:16:00 AM	A91113
Surr: BFB	98.6	0	70-130		%Rec	1	9/16/2022 11:16:00 AM	A91113
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.45	2.0		µg/L	2	9/15/2022 8:07:00 PM	R91060
Toluene	ND	0.40	2.0		µg/L	2	9/15/2022 8:07:00 PM	R91060
Ethylbenzene	ND	0.43	2.0		µg/L	2	9/15/2022 8:07:00 PM	R91060
Methyl tert-butyl ether (MTBE)	500	7.9	20		µg/L	20	9/15/2022 7:44:00 PM	R91060
1,2,4-Trimethylbenzene	ND	0.24	2.0		µg/L	2	9/15/2022 8:07:00 PM	R91060
1,3,5-Trimethylbenzene	ND	0.36	2.0		µg/L	2	9/15/2022 8:07:00 PM	R91060
1,2-Dichloroethane (EDC)	17	0.51	2.0		µg/L	2	9/15/2022 8:07:00 PM	R91060
Acetone	ND	5.0	20		µg/L	2	9/15/2022 8:07:00 PM	R91060
Bromomethane	ND	1.7	6.0		µg/L	2	9/15/2022 8:07:00 PM	R91060
2-Butanone	ND	4.1	20		µg/L	2	9/15/2022 8:07:00 PM	R91060
Carbon disulfide	ND	1.2	20		µg/L	2	9/15/2022 8:07:00 PM	R91060
Chlorobenzene	ND	0.31	2.0		µg/L	2	9/15/2022 8:07:00 PM	R91060
Chloroform	ND	0.27	2.0		µg/L	2	9/15/2022 8:07:00 PM	R91060
Chloromethane	ND	0.82	6.0		µg/L	2	9/15/2022 8:07:00 PM	R91060
cis-1,2-DCE	2.7	0.78	2.0		µg/L	2	9/15/2022 8:07:00 PM	R91060
1,1-Dichloroethane	36	0.55	2.0		µg/L	2	9/15/2022 8:07:00 PM	R91060
1,1-Dichloroethene	40	0.40	2.0		µg/L	2	9/15/2022 8:07:00 PM	R91060
Isopropylbenzene	ND	0.37	2.0		µg/L	2	9/15/2022 8:07:00 PM	R91060
4-Isopropyltoluene	ND	0.40	2.0		µg/L	2	9/15/2022 8:07:00 PM	R91060
Methylene Chloride	ND	1.0	6.0		µg/L	2	9/15/2022 8:07:00 PM	R91060
n-Butylbenzene	ND	0.51	6.0		µg/L	2	9/15/2022 8:07:00 PM	R91060
n-Propylbenzene	ND	0.36	2.0		µg/L	2	9/15/2022 8:07:00 PM	R91060
sec-Butylbenzene	ND	0.29	2.0		µg/L	2	9/15/2022 8:07:00 PM	R91060
Styrene	ND	0.27	2.0		µg/L	2	9/15/2022 8:07:00 PM	R91060
Tetrachloroethene (PCE)	ND	0.71	2.0		µg/L	2	9/15/2022 8:07:00 PM	R91060
1,1,1-Trichloroethane	1.7	0.60	2.0	J	µg/L	2	9/15/2022 8:07:00 PM	R91060
Trichloroethene (TCE)	4.2	0.41	2.0		µg/L	2	9/15/2022 8:07:00 PM	R91060
Vinyl chloride	ND	0.64	2.0		µg/L	2	9/15/2022 8:07:00 PM	R91060
Xylenes, Total	ND	0.74	3.0		µg/L	2	9/15/2022 8:07:00 PM	R91060
Surr: 1,2-Dichloroethane-d4	103	0	70-130		%Rec	2	9/15/2022 8:07:00 PM	R91060
Surr: 4-Bromofluorobenzene	87.1	0	70-130		%Rec	2	9/15/2022 8:07:00 PM	R91060
Surr: Dibromofluoromethane	102	0	70-130		%Rec	2	9/15/2022 8:07:00 PM	R91060
Surr: Toluene-d8	90.1	0	70-130		%Rec	2	9/15/2022 8:07:00 PM	R91060

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209635**
Date Reported: **10/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/13/2022 10:15:00 AM
Lab ID: 2209635-006B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	0.0057	0.0027	0.0093	J	µg/L	1	9/16/2022 5:05:06 AM	70173

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209635**
Date Reported: **10/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/13/2022 10:15:00 AM
Lab ID: 2209635-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **JME**	
Diesel Range Organics (DRO)	0.26	0.016	0.064	E	mg/L	1	9/15/2022 6:36:37 PM	70190
Motor Oil Range Organics (MRO)	ND	0.052	0.080	E	mg/L	1	9/15/2022 6:36:37 PM	70190
Surr: DNOP	97.5	0	42.2-138		%Rec	1	9/15/2022 6:36:37 PM	70190
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	9/22/2022 2:29:25 PM	70174
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/22/2022 2:29:25 PM	70174
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	9/22/2022 2:29:25 PM	70174
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/22/2022 2:29:25 PM	70174
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/22/2022 2:29:25 PM	70174
Diethyl phthalate	ND	6.0	10		µg/L	1	9/22/2022 2:29:25 PM	70174
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/22/2022 2:29:25 PM	70174
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	9/22/2022 2:29:25 PM	70174
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/22/2022 2:29:25 PM	70174
2-Methylphenol	ND	5.0	10		µg/L	1	9/22/2022 2:29:25 PM	70174
3+4-Methylphenol	ND	5.1	10		µg/L	1	9/22/2022 2:29:25 PM	70174
Phenol	ND	18	20		µg/L	1	9/22/2022 2:29:25 PM	70174
Pyridine	ND	14	40		µg/L	1	9/22/2022 2:29:25 PM	70174
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/22/2022 2:29:25 PM	70174
Surr: 2-Fluorophenol	46.0	0	15-84.5		%Rec	1	9/22/2022 2:29:25 PM	70174
Surr: Phenol-d5	36.0	0	15-67		%Rec	1	9/22/2022 2:29:25 PM	70174
Surr: 2,4,6-Tribromophenol	46.1	0	15-108		%Rec	1	9/22/2022 2:29:25 PM	70174
Surr: Nitrobenzene-d5	61.4	0	16.8-112		%Rec	1	9/22/2022 2:29:25 PM	70174
Surr: 2-Fluorobiphenyl	59.7	0	15-101		%Rec	1	9/22/2022 2:29:25 PM	70174
Surr: 4-Terphenyl-d14	69.4	0	34.4-134		%Rec	1	9/22/2022 2:29:25 PM	70174
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	75	0.11	1.0	E	µg/L	1	9/15/2022 8:12:00 PM	70174
Naphthalene	ND	0.20	0.30		µg/L	1	9/15/2022 8:12:00 PM	70174
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	9/15/2022 8:12:00 PM	70174
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	9/15/2022 8:12:00 PM	70174
Acenaphthene	ND	0.14	0.30		µg/L	1	9/15/2022 8:12:00 PM	70174
Fluorene	ND	0.095	0.30		µg/L	1	9/15/2022 8:12:00 PM	70174
Phenanthrene	ND	0.16	0.30		µg/L	1	9/15/2022 8:12:00 PM	70174
Anthracene	ND	0.14	0.30		µg/L	1	9/15/2022 8:12:00 PM	70174
Fluoranthene	ND	0.14	0.30		µg/L	1	9/15/2022 8:12:00 PM	70174
Pyrene	ND	0.32	1.0		µg/L	1	9/15/2022 8:12:00 PM	70174
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/15/2022 8:12:00 PM	70174
Chrysene	ND	0.25	0.30		µg/L	1	9/15/2022 8:12:00 PM	70174
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/15/2022 8:12:00 PM	70174
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/15/2022 8:12:00 PM	70174

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209635**
Date Reported: **10/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/13/2022 10:15:00 AM
Lab ID: 2209635-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	63.1	0	31.6-100		%Rec	1	9/15/2022 8:12:00 PM	70174
Surr: 2-Fluorobiphenyl	57.6	0	26.7-90.1		%Rec	1	9/15/2022 8:12:00 PM	70174
Surr: 4-Terphenyl-d14	59.3	0	72.3-147	S	%Rec	1	9/15/2022 8:12:00 PM	70174

NOTES:
1,4 Dioxane is E flagged becuase the result is above the calibration range of the curve.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209635**
Date Reported: **10/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/13/2022 10:15:00 AM
Lab ID: 2209635-006D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.31	0.0016	0.0030		mg/L	1	9/16/2022 12:43:19 PM	70179
Beryllium	ND	0.00088	0.0020		mg/L	1	9/15/2022 2:08:58 PM	70179
Cadmium	ND	0.0018	0.0020		mg/L	1	9/15/2022 2:08:58 PM	70179
Chromium	0.014	0.0020	0.0060		mg/L	1	9/15/2022 2:08:58 PM	70179
Cobalt	0.0094	0.0035	0.0060		mg/L	1	9/15/2022 2:08:58 PM	70179
Nickel	0.0099	0.0053	0.010	J	mg/L	1	9/15/2022 2:08:58 PM	70179
Silver	ND	0.0018	0.0050		mg/L	1	9/15/2022 2:08:58 PM	70179
Vanadium	0.032	0.0035	0.050	J	mg/L	1	9/15/2022 2:08:58 PM	70179
Zinc	0.0071	0.0039	0.010	J	mg/L	1	9/15/2022 2:08:58 PM	70179
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/16/2022 1:57:22 PM	70179
Arsenic	0.0021	0.00013	0.0010		mg/L	1	9/16/2022 1:57:22 PM	70179
Lead	0.0099	0.000061	0.00050		mg/L	1	9/16/2022 1:57:22 PM	70179
Selenium	0.0026	0.00037	0.0010		mg/L	1	9/16/2022 1:57:22 PM	70179
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/20/2022 3:27:43 PM	70278

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209635**
Date Reported: **10/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/13/2022 10:15:00 AM
Lab ID: 2209635-006E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.10	0.0011	0.0020		mg/L	1	9/19/2022 6:12:18 PM	C91139
Beryllium	ND	0.00088	0.0020		mg/L	1	9/19/2022 6:12:18 PM	C91139
Cadmium	ND	0.00098	0.0020		mg/L	1	9/19/2022 6:12:18 PM	C91139
Chromium	ND	0.0020	0.0060		mg/L	1	9/19/2022 6:12:18 PM	C91139
Cobalt	ND	0.0024	0.0060		mg/L	1	9/19/2022 6:12:18 PM	C91139
Nickel	0.0039	0.0033	0.010	J	mg/L	1	9/19/2022 6:12:18 PM	C91139
Silver	0.0020	0.0013	0.0050	J	mg/L	1	9/19/2022 6:12:18 PM	C91139
Vanadium	0.0063	0.0017	0.050	J	mg/L	1	9/19/2022 6:12:18 PM	C91139
Zinc	0.010	0.0032	0.010		mg/L	1	9/19/2022 6:12:18 PM	C91139
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/15/2022 5:10:19 PM	C91078
Arsenic	0.00070	0.00012	0.0010	J	mg/L	1	9/15/2022 5:10:19 PM	C91078
Lead	0.000082	0.000057	0.00050	J	mg/L	1	9/15/2022 5:10:19 PM	C91078
Selenium	0.00051	0.00034	0.0010	J	mg/L	1	9/15/2022 5:10:19 PM	C91078
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/20/2022 3:29:51 PM	70278

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209635**
Date Reported: **10/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB 9-13-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/13/2022 10:15:00 AM
Lab ID: 2209635-007A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	9/15/2022 8:53:00 PM	R91060
Toluene	ND	0.20	1.0		µg/L	1	9/15/2022 8:53:00 PM	R91060
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/15/2022 8:53:00 PM	R91060
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/15/2022 8:53:00 PM	R91060
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/15/2022 8:53:00 PM	R91060
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/15/2022 8:53:00 PM	R91060
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/15/2022 8:53:00 PM	R91060
Acetone	16	2.5	10		µg/L	1	9/15/2022 8:53:00 PM	R91060
Bromomethane	ND	0.85	3.0		µg/L	1	9/15/2022 8:53:00 PM	R91060
2-Butanone	12	2.0	10		µg/L	1	9/15/2022 8:53:00 PM	R91060
Carbon disulfide	ND	0.59	10		µg/L	1	9/15/2022 8:53:00 PM	R91060
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/15/2022 8:53:00 PM	R91060
Chloroform	ND	0.13	1.0		µg/L	1	9/15/2022 8:53:00 PM	R91060
Chloromethane	ND	0.41	3.0		µg/L	1	9/15/2022 8:53:00 PM	R91060
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/15/2022 8:53:00 PM	R91060
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/15/2022 8:53:00 PM	R91060
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/15/2022 8:53:00 PM	R91060
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/15/2022 8:53:00 PM	R91060
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/15/2022 8:53:00 PM	R91060
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/15/2022 8:53:00 PM	R91060
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/15/2022 8:53:00 PM	R91060
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/15/2022 8:53:00 PM	R91060
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/15/2022 8:53:00 PM	R91060
Styrene	ND	0.14	1.0		µg/L	1	9/15/2022 8:53:00 PM	R91060
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/15/2022 8:53:00 PM	R91060
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/15/2022 8:53:00 PM	R91060
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/15/2022 8:53:00 PM	R91060
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/15/2022 8:53:00 PM	R91060
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/15/2022 8:53:00 PM	R91060
Surr: 1,2-Dichloroethane-d4	104	0	70-130		%Rec	1	9/15/2022 8:53:00 PM	R91060
Surr: 4-Bromofluorobenzene	89.1	0	70-130		%Rec	1	9/15/2022 8:53:00 PM	R91060
Surr: Dibromofluoromethane	102	0	70-130		%Rec	1	9/15/2022 8:53:00 PM	R91060
Surr: Toluene-d8	89.2	0	70-130		%Rec	1	9/15/2022 8:53:00 PM	R91060

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209635**
Date Reported: **10/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-9-13-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/13/2022
Lab ID: 2209635-008A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.021	0.0090	0.050	J	mg/L	1	9/16/2022 11:36:00 AM	A91113
Surr: BFB	103	0	70-130		%Rec	1	9/16/2022 11:36:00 AM	A91113
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	9/16/2022 3:03:00 PM	R91090
Toluene	ND	0.20	1.0		µg/L	1	9/16/2022 3:03:00 PM	R91090
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/16/2022 3:03:00 PM	R91090
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/16/2022 3:03:00 PM	R91090
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/16/2022 3:03:00 PM	R91090
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/16/2022 3:03:00 PM	R91090
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/16/2022 3:03:00 PM	R91090
Acetone	8.1	2.5	10	J	µg/L	1	9/16/2022 3:03:00 PM	R91090
Bromomethane	ND	0.85	3.0		µg/L	1	9/16/2022 3:03:00 PM	R91090
2-Butanone	ND	2.0	10		µg/L	1	9/16/2022 3:03:00 PM	R91090
Carbon disulfide	ND	0.59	10		µg/L	1	9/16/2022 3:03:00 PM	R91090
Chlorobenzene	0.33	0.16	1.0	J	µg/L	1	9/16/2022 3:03:00 PM	R91090
Chloroform	ND	0.13	1.0		µg/L	1	9/16/2022 3:03:00 PM	R91090
Chloromethane	ND	0.41	3.0		µg/L	1	9/16/2022 3:03:00 PM	R91090
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/16/2022 3:03:00 PM	R91090
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/16/2022 3:03:00 PM	R91090
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/16/2022 3:03:00 PM	R91090
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/16/2022 3:03:00 PM	R91090
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/16/2022 3:03:00 PM	R91090
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/16/2022 3:03:00 PM	R91090
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/16/2022 3:03:00 PM	R91090
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/16/2022 3:03:00 PM	R91090
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/16/2022 3:03:00 PM	R91090
Styrene	ND	0.14	1.0		µg/L	1	9/16/2022 3:03:00 PM	R91090
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/16/2022 3:03:00 PM	R91090
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/16/2022 3:03:00 PM	R91090
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/16/2022 3:03:00 PM	R91090
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/16/2022 3:03:00 PM	R91090
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/16/2022 3:03:00 PM	R91090
Surr: 1,2-Dichloroethane-d4	106	0	70-130		%Rec	1	9/16/2022 3:03:00 PM	R91090
Surr: 4-Bromofluorobenzene	90.1	0	70-130		%Rec	1	9/16/2022 3:03:00 PM	R91090
Surr: Dibromofluoromethane	104	0	70-130		%Rec	1	9/16/2022 3:03:00 PM	R91090
Surr: Toluene-d8	89.0	0	70-130		%Rec	1	9/16/2022 3:03:00 PM	R91090

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Estimated value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference

Analytical Report
Lab Order: **2209635**
Date Reported: **10/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-9-13-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/13/2022
Lab ID: 2209635-008B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	9/16/2022 5:35:10 AM	70173

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209635**
Date Reported: **10/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-9-13-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/13/2022
Lab ID: 2209635-008C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **JME**	
Diesel Range Organics (DRO)	0.058	0.016	0.064	JE	mg/L	1	9/15/2022 7:00:25 PM	70190
Motor Oil Range Organics (MRO)	ND	0.052	0.080	E	mg/L	1	9/15/2022 7:00:25 PM	70190
Surr: DNOP	96.3	0	42.2-138		%Rec	1	9/15/2022 7:00:25 PM	70190
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	9/22/2022 3:10:59 PM	70174
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/22/2022 3:10:59 PM	70174
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	9/22/2022 3:10:59 PM	70174
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/22/2022 3:10:59 PM	70174
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/22/2022 3:10:59 PM	70174
Diethyl phthalate	ND	6.0	10		µg/L	1	9/22/2022 3:10:59 PM	70174
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/22/2022 3:10:59 PM	70174
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	9/22/2022 3:10:59 PM	70174
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/22/2022 3:10:59 PM	70174
2-Methylphenol	ND	5.0	10		µg/L	1	9/22/2022 3:10:59 PM	70174
3+4-Methylphenol	ND	5.1	10		µg/L	1	9/22/2022 3:10:59 PM	70174
Phenol	ND	18	20		µg/L	1	9/22/2022 3:10:59 PM	70174
Pyridine	ND	14	40		µg/L	1	9/22/2022 3:10:59 PM	70174
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/22/2022 3:10:59 PM	70174
Surr: 2-Fluorophenol	43.0	0	15-84.5		%Rec	1	9/22/2022 3:10:59 PM	70174
Surr: Phenol-d5	33.5	0	15-67		%Rec	1	9/22/2022 3:10:59 PM	70174
Surr: 2,4,6-Tribromophenol	36.6	0	15-108		%Rec	1	9/22/2022 3:10:59 PM	70174
Surr: Nitrobenzene-d5	64.3	0	16.8-112		%Rec	1	9/22/2022 3:10:59 PM	70174
Surr: 2-Fluorobiphenyl	58.4	0	15-101		%Rec	1	9/22/2022 3:10:59 PM	70174
Surr: 4-Terphenyl-d14	75.4	0	34.4-134		%Rec	1	9/22/2022 3:10:59 PM	70174
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	2.1	0.11	1.0		µg/L	1	9/15/2022 9:02:00 PM	70174
Naphthalene	ND	0.20	0.30		µg/L	1	9/15/2022 9:02:00 PM	70174
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	9/15/2022 9:02:00 PM	70174
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	9/15/2022 9:02:00 PM	70174
Acenaphthene	ND	0.14	0.30		µg/L	1	9/15/2022 9:02:00 PM	70174
Fluorene	ND	0.095	0.30		µg/L	1	9/15/2022 9:02:00 PM	70174
Phenanthrene	ND	0.16	0.30		µg/L	1	9/15/2022 9:02:00 PM	70174
Anthracene	ND	0.14	0.30		µg/L	1	9/15/2022 9:02:00 PM	70174
Fluoranthene	ND	0.14	0.30		µg/L	1	9/15/2022 9:02:00 PM	70174
Pyrene	ND	0.32	1.0		µg/L	1	9/15/2022 9:02:00 PM	70174
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/15/2022 9:02:00 PM	70174
Chrysene	ND	0.25	0.30		µg/L	1	9/15/2022 9:02:00 PM	70174
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/15/2022 9:02:00 PM	70174
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/15/2022 9:02:00 PM	70174

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209635**
Date Reported: **10/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-9-13-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/13/2022
Lab ID: 2209635-008C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	62.9	0	31.6-100		%Rec	1	9/15/2022 9:02:00 PM	70174
Surr: 2-Fluorobiphenyl	58.1	0	26.7-90.1		%Rec	1	9/15/2022 9:02:00 PM	70174
Surr: 4-Terphenyl-d14	65.5	0	72.3-147	S	%Rec	1	9/15/2022 9:02:00 PM	70174

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209635**
Date Reported: **10/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-9-13-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/13/2022
Lab ID: 2209635-008D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.075	0.0016	0.0030		mg/L	1	9/16/2022 12:44:47 PM	70179
Beryllium	ND	0.00088	0.0020		mg/L	1	9/15/2022 2:11:53 PM	70179
Cadmium	ND	0.0018	0.0020		mg/L	1	9/15/2022 2:11:53 PM	70179
Chromium	ND	0.0020	0.0060		mg/L	1	9/15/2022 2:11:53 PM	70179
Cobalt	0.0086	0.0035	0.0060		mg/L	1	9/15/2022 2:11:53 PM	70179
Nickel	ND	0.0053	0.010		mg/L	1	9/15/2022 2:11:53 PM	70179
Silver	ND	0.0018	0.0050		mg/L	1	9/15/2022 2:11:53 PM	70179
Vanadium	0.0038	0.0035	0.050	J	mg/L	1	9/15/2022 2:11:53 PM	70179
Zinc	ND	0.0039	0.010		mg/L	1	9/15/2022 2:11:53 PM	70179
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/16/2022 1:59:49 PM	70179
Arsenic	0.00081	0.00013	0.0010	J	mg/L	1	9/16/2022 1:59:49 PM	70179
Lead	0.00083	0.000061	0.00050		mg/L	1	9/16/2022 1:59:49 PM	70179
Selenium	0.00063	0.00037	0.0010	J	mg/L	1	9/16/2022 1:59:49 PM	70179
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00011	0.000091	0.00020	J	mg/L	1	9/20/2022 3:31:58 PM	70278

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209635**
Date Reported: **10/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-9-13-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/13/2022
Lab ID: 2209635-008E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.036	0.0011	0.0020		mg/L	1	9/19/2022 6:16:21 PM	C91139
Beryllium	ND	0.00088	0.0020		mg/L	1	9/19/2022 6:16:21 PM	C91139
Cadmium	ND	0.00098	0.0020		mg/L	1	9/19/2022 6:16:21 PM	C91139
Chromium	ND	0.0020	0.0060		mg/L	1	9/19/2022 6:16:21 PM	C91139
Cobalt	ND	0.0024	0.0060		mg/L	1	9/19/2022 6:16:21 PM	C91139
Nickel	ND	0.0033	0.010		mg/L	1	9/19/2022 6:16:21 PM	C91139
Silver	0.0036	0.0013	0.0050	J	mg/L	1	9/19/2022 6:16:21 PM	C91139
Vanadium	0.0050	0.0017	0.050	J	mg/L	1	9/19/2022 6:16:21 PM	C91139
Zinc	0.013	0.0032	0.010		mg/L	1	9/19/2022 6:16:21 PM	C91139
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/15/2022 5:18:23 PM	C91078
Arsenic	0.00081	0.00012	0.0010	J	mg/L	1	9/15/2022 5:18:23 PM	C91078
Lead	ND	0.000057	0.00050		mg/L	1	9/15/2022 5:18:23 PM	C91078
Selenium	ND	0.00034	0.0010		mg/L	1	9/15/2022 5:18:23 PM	C91078
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/20/2022 3:34:06 PM	70278

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209635**
Date Reported: **10/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 3rd Quarter
Collection Date:
Lab ID: 2209635-009A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **CCM**	
Benzene	ND	0.23	1.0		µg/L	1	9/15/2022 10:25:00 PM	R91060
Toluene	ND	0.20	1.0		µg/L	1	9/15/2022 10:25:00 PM	R91060
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/15/2022 10:25:00 PM	R91060
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/15/2022 10:25:00 PM	R91060
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/15/2022 10:25:00 PM	R91060
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/15/2022 10:25:00 PM	R91060
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/15/2022 10:25:00 PM	R91060
Acetone	ND	2.5	10		µg/L	1	9/15/2022 10:25:00 PM	R91060
Bromomethane	ND	0.85	3.0		µg/L	1	9/15/2022 10:25:00 PM	R91060
2-Butanone	ND	2.0	10		µg/L	1	9/15/2022 10:25:00 PM	R91060
Carbon disulfide	ND	0.59	10		µg/L	1	9/15/2022 10:25:00 PM	R91060
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/15/2022 10:25:00 PM	R91060
Chloroform	ND	0.13	1.0		µg/L	1	9/15/2022 10:25:00 PM	R91060
Chloromethane	ND	0.41	3.0		µg/L	1	9/15/2022 10:25:00 PM	R91060
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/15/2022 10:25:00 PM	R91060
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/15/2022 10:25:00 PM	R91060
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/15/2022 10:25:00 PM	R91060
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/15/2022 10:25:00 PM	R91060
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/15/2022 10:25:00 PM	R91060
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/15/2022 10:25:00 PM	R91060
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/15/2022 10:25:00 PM	R91060
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/15/2022 10:25:00 PM	R91060
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/15/2022 10:25:00 PM	R91060
Styrene	ND	0.14	1.0		µg/L	1	9/15/2022 10:25:00 PM	R91060
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/15/2022 10:25:00 PM	R91060
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/15/2022 10:25:00 PM	R91060
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/15/2022 10:25:00 PM	R91060
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/15/2022 10:25:00 PM	R91060
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/15/2022 10:25:00 PM	R91060
Surr: 1,2-Dichloroethane-d4	106	0	70-130		%Rec	1	9/15/2022 10:25:00 PM	R91060
Surr: 4-Bromofluorobenzene	90.4	0	70-130		%Rec	1	9/15/2022 10:25:00 PM	R91060
Surr: Dibromofluoromethane	108	0	70-130		%Rec	1	9/15/2022 10:25:00 PM	R91060
Surr: Toluene-d8	88.5	0	70-130		%Rec	1	9/15/2022 10:25:00 PM	R91060

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209635**
Date Reported: **10/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 3rd Quarter
Collection Date:
Lab ID: 2209635-009B
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0096		µg/L	1	9/16/2022 6:35:22 AM	70173

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

ANALYTICAL REPORT

September 20, 2022

Hall Environmental Analysis Laboratory

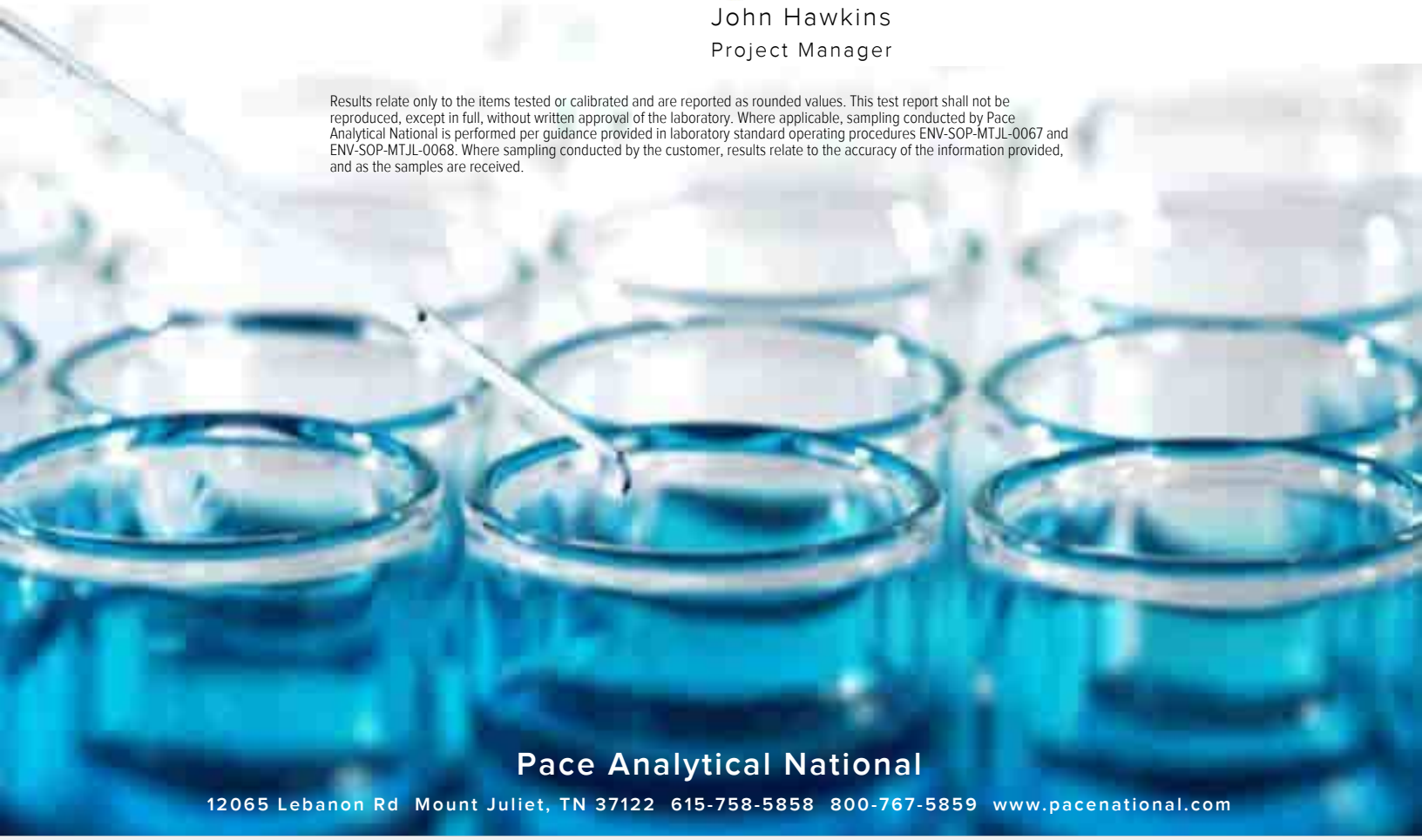
Sample Delivery Group:	L1535948
Samples Received:	09/15/2022
Project Number:	
Description:	

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By: John V Hawkins

John Hawkins
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 4

Sr: Sample Results 5

EB-09-13-22 2209635-001F L1535948-01 5

MKTF-46 2209635-002F L1535948-02 6

MKTF-18R 2209635-003F L1535948-03 7

MKTF-38 2209635-004F L1535948-04 8

MKTF-40 2209635-005F L1535948-05 9

MKTF-31 2209635-006F L1535948-06 10

DUP-9-13-22 2209635-007F L1535948-07 11

Qc: Quality Control Summary 12

Wet Chemistry by Method 4500CN E-2016 12

Gl: Glossary of Terms 13

Al: Accreditations & Locations 14

Sc: Sample Chain of Custody 15

SAMPLE SUMMARY

EB-09-13-22 2209635-001F L1535948-01 GW

			Collected by	Collected date/time	Received date/time	
				09/13/22 08:00	09/15/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1928511	1	09/20/22 09:12	09/20/22 18:00	LDT	Mt. Juliet, TN

MKTF-46 2209635-002F L1535948-02 GW

			Collected by	Collected date/time	Received date/time	
				09/13/22 08:30	09/15/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1928511	1	09/20/22 09:12	09/20/22 18:01	LDT	Mt. Juliet, TN

MKTF-18R 2209635-003F L1535948-03 GW

			Collected by	Collected date/time	Received date/time	
				09/13/22 09:15	09/15/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1928511	1	09/20/22 09:12	09/20/22 18:02	LDT	Mt. Juliet, TN

MKTF-38 2209635-004F L1535948-04 GW

			Collected by	Collected date/time	Received date/time	
				09/13/22 09:35	09/15/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1928511	1	09/20/22 09:12	09/20/22 18:03	LDT	Mt. Juliet, TN

MKTF-40 2209635-005F L1535948-05 GW

			Collected by	Collected date/time	Received date/time	
				09/13/22 09:55	09/15/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1928511	1	09/20/22 09:12	09/20/22 18:04	LDT	Mt. Juliet, TN

MKTF-31 2209635-006F L1535948-06 GW

			Collected by	Collected date/time	Received date/time	
				09/13/22 10:15	09/15/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1928511	1	09/20/22 09:12	09/20/22 18:05	LDT	Mt. Juliet, TN

DUP-9-13-22 2209635-007F L1535948-07 GW

			Collected by	Collected date/time	Received date/time	
				09/13/22 00:00	09/15/22 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1928511	1	09/20/22 09:12	09/20/22 18:06	LDT	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	U		1.80	5.00	1	09/20/2022 18:00	WG1928511

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	U		1.80	5.00	1	09/20/2022 18:01	WG1928511

Received by OCD: 4/21/2023 9:21:57 AM

Collected date/time: 09/13/22 09:15
L1535948

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	U		1.80	5.00	1	09/20/2022 18:02	WG1928511

Released to Imaging: 4/21/2023 9:40:26 AM

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	U		1.80	5.00	1	09/20/2022 18:03	WG1928511

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	13.1		1.80	5.00	1	09/20/2022 18:04	WG1928511

Received by OCD: 4/21/2023 9:21:57 AM

MRTT-31220630-0001
Collected date/time: 09/13/22 10:15
L1535948

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	12.4		1.80	5.00	1	09/20/2022 18:05	WG1928511

Released to Imaging: 4/21/2023 9:40:26 AM

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Cyanide	3.06	J	1.80	5.00	1	09/20/2022 18:06	WG1928511

Received by OCD: 4/21/2023 9:21:57 AM

QUALITY CONTROL SUMMARY

L1535948-01,02,03,04,05,06,07

Method Blank (MB)

(MB) R3839387-1 09/20/22 17:35

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Cyanide	U		1.80	5.00

L1535759-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1535759-02 09/20/22 17:50 • (DUP) R3839387-6 09/20/22 17:51

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3839387-2 09/20/22 17:36

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	100	102	102	87.1-120	

L1535745-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1535745-02 09/20/22 17:43 • (MS) R3839387-4 09/20/22 17:44 • (MSD) R3839387-5 09/20/22 17:47

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	100	U	105	104	105	104	1	90.0-110			0.957	20

Released to Imaging: 4/21/2023 9:40:26 AM

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

B055

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

SUB CONTRATOR:	Pace TN	COMPANY: PACE TN	PHONE: (800) 767-5859	FAX: (615) 758-5859	
ADDRESS:	12065 Lebanon Rd		ACCOUNT #:	EMAIL:	
CITY, STATE, ZIP:	Mt. Juliet, TN 37122				

L1535948

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS	
1	2209635-001F	EB-09-13-22	500AMBHDP F-NAOH	Groundwater	9/13/2022 8:00:00 AM	1	Total Cyanide J and MDL	-01
2	2209635-002F	MKTF-46	500AMBHDP F-NAOH	Groundwater	9/13/2022 8:30:00 AM	1	Total Cyanide J and MDL	-02
3	2209635-003F	MKTF-18R	500AMBHDP F-NAOH	Groundwater	9/13/2022 9:15:00 AM	1	Total Cyanide J and MDL	-03
4	2209635-004F	MKTF-38	500AMBHDP F-NAOH	Groundwater	9/13/2022 9:35:00 AM	1	Total Cyanide J and MDL	-04
5	2209635-005F	MKTF-40	500AMBHDP F-NAOH	Groundwater	9/13/2022 9:55:00 AM	1	Total Cyanide J and MDL	-05
6	2209635-006F	MKTF-31	500AMBHDP F-NAOH	Groundwater	9/13/2022 10:15:00 AM	1	Total Cyanide J and MDL	-06
7	2209635-008F	DUP-9-13-22	500AMBHDP F-NAOH	Groundwater	9/13/2022	1	Total Cyanide J and MDL	-07

Sample Receipt Checklist

COC Seal Present/Intact: ✓ Y ___ N
COC Signed/Accurate: ✓ Y ___ N
Bottles arrive intact: ✓ Y ___ N
Correct bottles used: ✓ Y ___ N
Sufficient volume sent: ✓ Y ___ N
RAD Screen <0.5 mR/hr: ✓ Y ___ N

If Applicable
VOA Zero Headspace: ___ Y ___ N
Pres.Correct/Check: ___ Y ___ N

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By: SR	Date: 9/14/2022	Time: 8:13 AM	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By: M. Wisk	Date: 9/15/22	Time: 900

TAT: Standard ✓ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY
Temp of samples _____ °C Attempt to Cool ? _____
Comments: _____

5755 8089 4009 2.1

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209635**

06-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70179**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **70179**	RunNo: **91068**
Prep Date: **9/14/2022**	Analysis Date: **9/15/2022**	SeqNo: **3257142** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	0.0056	0.010								J

Sample ID: **LCSLL-70179**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **70179**	RunNo: **91068**
Prep Date: **9/14/2022**	Analysis Date: **9/15/2022**	SeqNo: **3257143** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.0021	0.0020	0.002000	0	105	50	150			
Cadmium	0.0016	0.0020	0.002000	0	80.1	50	150			J
Chromium	0.0059	0.0060	0.006000	0	98.0	50	150			J
Cobalt	0.0043	0.0060	0.006000	0	71.1	50	150			J
Nickel	0.0041	0.010	0.005000	0	82.6	50	150			J
Silver	0.0049	0.0050	0.005000	0	99.0	50	150			J
Vanadium	0.0098	0.050	0.01000	0	98.2	50	150			J
Zinc	0.010	0.010	0.01000	0	105	50	150			

Sample ID: **LCS-70179**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **70179**	RunNo: **91068**
Prep Date: **9/14/2022**	Analysis Date: **9/15/2022**	SeqNo: **3257144** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.49	0.0020	0.5000	0	99.0	85	115			
Cadmium	0.47	0.0020	0.5000	0	94.5	85	115			
Chromium	0.47	0.0060	0.5000	0	94.6	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.2	85	115			
Nickel	0.46	0.010	0.5000	0	92.2	85	115			
Silver	0.097	0.0050	0.1000	0	96.8	85	115			
Vanadium	0.48	0.050	0.5000	0	96.3	85	115			
Zinc	0.48	0.010	0.5000	0	96.0	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209635**
06-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70179** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **70179** RunNo: **91103**
Prep Date: **9/14/2022** Analysis Date: **9/16/2022** SeqNo: **3258812** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								

Sample ID: **LCSLL-70179** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **70179** RunNo: **91103**
Prep Date: **9/14/2022** Analysis Date: **9/16/2022** SeqNo: **3258813** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0019	0.0030	0.002000	0	92.6	50	150			J

Sample ID: **LCS-70179** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **70179** RunNo: **91103**
Prep Date: **9/14/2022** Analysis Date: **9/16/2022** SeqNo: **3258814** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.52	0.0030	0.5000	0	104	85	115			

Sample ID: **MB-C** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **C91139** RunNo: **91139**
Prep Date: Analysis Date: **9/19/2022** SeqNo: **3260467** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS-C** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **C91139** RunNo: **91139**
Prep Date: Analysis Date: **9/19/2022** SeqNo: **3260468** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0025	0.0030	0.002000	0	123	50	150			J
Beryllium	0.0021	0.0020	0.002000	0	106	50	150			
Cadmium	0.0017	0.0020	0.002000	0	86.0	50	150			J
Chromium	0.0060	0.0060	0.006000	0	101	50	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209635**

06-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **LLLCS-C**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **C91139**	RunNo: **91139**
Prep Date:	Analysis Date: **9/19/2022**	SeqNo: **3260468** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	0.0061	0.0060	0.006000	0	102	50	150			
Nickel	0.0046	0.010	0.005000	0	91.6	50	150			J
Silver	0.0047	0.0050	0.005000	0	93.8	50	150			J
Vanadium	0.010	0.050	0.01000	0	102	50	150			J
Zinc	0.011	0.010	0.01000	0	105	50	150			

Sample ID: **LCS-C**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **C91139**	RunNo: **91139**
Prep Date:	Analysis Date: **9/19/2022**	SeqNo: **3260469** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0030	0.5000	0	102	85	115			
Beryllium	0.51	0.0020	0.5000	0	102	85	115			
Cadmium	0.52	0.0020	0.5000	0	104	85	115			
Chromium	0.51	0.0060	0.5000	0	103	85	115			
Cobalt	0.50	0.0060	0.5000	0	101	85	115			
Nickel	0.51	0.010	0.5000	0	102	85	115			
Silver	0.11	0.0050	0.1000	0	106	85	115			
Vanadium	0.52	0.050	0.5000	0	104	85	115			
Zinc	0.50	0.010	0.5000	0	101	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209635**

06-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-C**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **C91139**	RunNo: **91139**
Prep Date:	Analysis Date: **9/19/2022**	SeqNo: **3260470** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS-C**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **C91139**	RunNo: **91139**
Prep Date:	Analysis Date: **9/19/2022**	SeqNo: **3260471** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0025	0.0020	0.002000	0	123	50	150			
Beryllium	0.0021	0.0020	0.002000	0	106	50	150			
Cadmium	0.0017	0.0020	0.002000	0	86.0	50	150			J
Chromium	0.0060	0.0060	0.006000	0	101	50	150			
Cobalt	0.0061	0.0060	0.006000	0	102	50	150			
Nickel	0.0046	0.010	0.005000	0	91.6	50	150			J
Silver	0.0047	0.0050	0.005000	0	93.8	50	150			J
Vanadium	0.010	0.050	0.01000	0	102	50	150			J
Zinc	0.011	0.010	0.01000	0	105	50	150			

Sample ID: **LCS-C**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **C91139**	RunNo: **91139**
Prep Date:	Analysis Date: **9/19/2022**	SeqNo: **3260472** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0020	0.5000	0	102	85	115			
Beryllium	0.51	0.0020	0.5000	0	102	85	115			
Cadmium	0.52	0.0020	0.5000	0	104	85	115			
Chromium	0.51	0.0060	0.5000	0	103	85	115			
Cobalt	0.50	0.0060	0.5000	0	101	85	115			
Nickel	0.51	0.010	0.5000	0	102	85	115			
Silver	0.11	0.0050	0.1000	0	106	85	115			
Vanadium	0.52	0.050	0.5000	0	104	85	115			
Zinc	0.50	0.010	0.5000	0	101	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209635**

06-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **2209635-001EMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB-09-13-22**	Batch ID: **C91139**	RunNo: **91139**
Prep Date:	Analysis Date: **9/19/2022**	SeqNo: **3260574** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	97.9	70	130			
Beryllium	0.50	0.0020	0.5000	0	101	70	130			
Cadmium	0.51	0.0020	0.5000	0	102	70	130			
Chromium	0.49	0.0060	0.5000	0	98.6	70	130			
Cobalt	0.50	0.0060	0.5000	0	99.8	70	130			
Nickel	0.50	0.010	0.5000	0	99.6	70	130			
Silver	0.094	0.0050	0.1000	0	93.6	70	130			
Vanadium	0.50	0.050	0.5000	0	101	70	130			
Zinc	0.51	0.010	0.5000	0.006383	99.9	70	130			

Sample ID: **2209635-001EMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB-09-13-22**	Batch ID: **C91139**	RunNo: **91139**
Prep Date:	Analysis Date: **9/19/2022**	SeqNo: **3260575** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	97.4	70	130	0.513	20	
Beryllium	0.50	0.0020	0.5000	0	99.9	70	130	0.898	20	
Cadmium	0.50	0.0020	0.5000	0	101	70	130	1.67	20	
Chromium	0.49	0.0060	0.5000	0	97.6	70	130	1.03	20	
Cobalt	0.49	0.0060	0.5000	0	98.4	70	130	1.48	20	
Nickel	0.49	0.010	0.5000	0	98.1	70	130	1.54	20	
Silver	0.094	0.0050	0.1000	0	94.3	70	130	0.773	20	
Vanadium	0.50	0.050	0.5000	0	99.9	70	130	0.817	20	
Zinc	0.50	0.010	0.5000	0.006383	98.1	70	130	1.75	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209635**
06-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70179**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **70179**	RunNo: **91098**
Prep Date: **9/14/2022**	Analysis Date: **9/16/2022**	SeqNo: **3258655** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **MSLCSLL-70179**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **70179**	RunNo: **91098**
Prep Date: **9/14/2022**	Analysis Date: **9/16/2022**	SeqNo: **3258656** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0011	0.0010	0.001000	0	110	50	150			
Arsenic	0.0010	0.0010	0.001000	0	101	50	150			
Lead	0.00051	0.00050	0.0005000	0	101	50	150			
Selenium	0.0011	0.0010	0.001000	0	108	50	150			

Sample ID: **MSLCS-70179**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **70179**	RunNo: **91098**
Prep Date: **9/14/2022**	Analysis Date: **9/16/2022**	SeqNo: **3258657** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	99.4	85	115			
Arsenic	0.024	0.0010	0.02500	0	97.5	85	115			
Lead	0.012	0.00050	0.01250	0	97.0	85	115			
Selenium	0.024	0.0010	0.02500	0	95.0	85	115			

Sample ID: **2209635-008DMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Metals**
Client ID: **DUP-9-13-22**	Batch ID: **70179**	RunNo: **91098**
Prep Date: **9/14/2022**	Analysis Date: **9/16/2022**	SeqNo: **3258698** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	98.9	70	130			
Arsenic	0.026	0.0010	0.02500	0.0008119	99.3	70	130			
Lead	0.012	0.00050	0.01250	0.0008328	91.9	70	130			
Selenium	0.023	0.0010	0.02500	0.0006328	89.9	70	130			

Sample ID: **2209635-008DMSDL**	SampType: **MSD**	TestCode: **EPA 200.8: Metals**
Client ID: **DUP-9-13-22**	Batch ID: **70179**	RunNo: **91098**
Prep Date: **9/14/2022**	Analysis Date: **9/16/2022**	SeqNo: **3258699** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209635**
06-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **2209635-008DMSDL** SampType: **MSD** TestCode: **EPA 200.8: Metals**
Client ID: **DUP-9-13-22** Batch ID: **70179** RunNo: **91098**
Prep Date: **9/14/2022** Analysis Date: **9/16/2022** SeqNo: **3258699** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	101	70	130	2.24	20	
Arsenic	0.026	0.0010	0.02500	0.0008119	99.9	70	130	0.608	20	
Lead	0.012	0.00050	0.01250	0.0008328	92.9	70	130	0.982	20	
Selenium	0.025	0.0010	0.02500	0.0006328	98.7	70	130	9.13	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209635**
06-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **C91078**	RunNo: **91078**
Prep Date:	Analysis Date: **9/15/2022**	SeqNo: **3257887** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **C91078**	RunNo: **91078**
Prep Date:	Analysis Date: **9/15/2022**	SeqNo: **3257889** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00083	0.0010	0.001000	0	83.2	50	150			J
Arsenic	0.00095	0.0010	0.001000	0	95.5	50	150			J
Lead	0.00049	0.00050	0.0005000	0	97.0	50	150			J
Selenium	0.00062	0.0010	0.001000	0	62.2	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **C91078**	RunNo: **91078**
Prep Date:	Analysis Date: **9/15/2022**	SeqNo: **3257891** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.2	85	115			
Arsenic	0.024	0.0010	0.02500	0	97.9	85	115			
Lead	0.012	0.00050	0.01250	0	96.7	85	115			
Selenium	0.027	0.0010	0.02500	0	107	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209635**
06-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70278**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW**	Batch ID: **70278**	RunNo: **91165**
Prep Date: **9/20/2022**	Analysis Date: **9/20/2022**	SeqNo: **3261769** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00012	0.00020								J

Sample ID: **LCSLL-70278**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC**	Batch ID: **70278**	RunNo: **91165**
Prep Date: **9/20/2022**	Analysis Date: **9/20/2022**	SeqNo: **3261770** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00017	0.00020	0.0001500	0	115	50	150			J

Sample ID: **LCS-70278**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW**	Batch ID: **70278**	RunNo: **91165**
Prep Date: **9/20/2022**	Analysis Date: **9/20/2022**	SeqNo: **3261771** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0052	0.00020	0.005000	0	103	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209635**
06-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70173** SampType: **MBLK** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW** Batch ID: **70173** RunNo: **91063**
Prep Date: **9/15/2022** Analysis Date: **9/15/2022** SeqNo: **3258444** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **MB-70173** SampType: **MBLK** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW** Batch ID: **70173** RunNo: **91063**
Prep Date: **9/15/2022** Analysis Date: **9/15/2022** SeqNo: **3258445** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-70173** SampType: **LCS** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW** Batch ID: **70173** RunNo: **91063**
Prep Date: **9/15/2022** Analysis Date: **9/15/2022** SeqNo: **3258447** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.088	0.010	0.1000	0	87.9	70	130			

Sample ID: **LCSD-70173** SampType: **LCSD** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSS02** Batch ID: **70173** RunNo: **91063**
Prep Date: **9/15/2022** Analysis Date: **9/15/2022** SeqNo: **3258448** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.094	0.010	0.1000	0	93.6	70	130	6.28	20	

Sample ID: **2209635-001BMS** SampType: **MS** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **EB-09-13-22** Batch ID: **70173** RunNo: **91063**
Prep Date: **9/15/2022** Analysis Date: **9/16/2022** SeqNo: **3258460** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.089	0.0095	0.09485	0	93.8	65	135			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209635**

06-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70190**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **PBW**	Batch ID: **70190**	RunNo: **91074**
Prep Date: **9/15/2022**	Analysis Date: **9/15/2022**	SeqNo: **3257375** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.030	0.064								J
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.039		0.03750		103	42.2	138			

Sample ID: **LCS-70190**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSW**	Batch ID: **70190**	RunNo: **91074**
Prep Date: **9/15/2022**	Analysis Date: **9/15/2022**	SeqNo: **3257376** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.17	0.064	0.1875	0	89.3	31.7	75.4			S
Surr: DNOP	0.020		0.01875		105	42.2	138			

Sample ID: **LCSD-70190**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02**	Batch ID: **70190**	RunNo: **91074**
Prep Date: **9/15/2022**	Analysis Date: **9/15/2022**	SeqNo: **3257377** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.13	0.064	0.1875	0	69.3	31.7	75.4	25.3	20	R
Surr: DNOP	0.018		0.01875		98.2	42.2	138	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209635**

06-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **A91113**	RunNo: **91113**
Prep Date:	Analysis Date: **9/16/2022**	SeqNo: **3259450** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.50	0.050	0.5000	0	99.3	80	120			
Surr: BFB	42		20.00		210	70	130			S

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **A91113**	RunNo: **91113**
Prep Date:	Analysis Date: **9/16/2022**	SeqNo: **3259451** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	19		20.00		97.0	70	130			

Sample ID: **2209635-002a ms**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **MKTF-46**	Batch ID: **A91113**	RunNo: **91113**
Prep Date:	Analysis Date: **9/16/2022**	SeqNo: **3259472** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.51	0.050	0.5000	0.02460	97.5	70	130			
Surr: BFB	43		20.00		215	70	130			S

Sample ID: **2209635-002A MSD**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **MKTF-46**	Batch ID: **A91113**	RunNo: **91113**
Prep Date:	Analysis Date: **9/16/2022**	SeqNo: **3259473** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.49	0.050	0.5000	0.02460	92.4	70	130	5.13	20	
Surr: BFB	41		20.00		204	70	130	0	0	S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209635**
06-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R91021**	RunNo: **91021**
Prep Date:	Analysis Date: **9/14/2022**	SeqNo: **3255741** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	97.8	70	130			
Toluene	19	1.0	20.00	0	95.4	70	130			
Chlorobenzene	19	1.0	20.00	0	97.0	70	130			
1,1-Dichloroethene	19	1.0	20.00	0	92.6	70	130			
Trichloroethene (TCE)	19	1.0	20.00	0	93.3	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		103	70	130			
Surr: 4-Bromofluorobenzene	9.1		10.00		90.9	70	130			
Surr: Dibromofluoromethane	9.9		10.00		99.4	70	130			
Surr: Toluene-d8	9.0		10.00		90.1	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R91021**	RunNo: **91021**
Prep Date:	Analysis Date: **9/14/2022**	SeqNo: **3255742** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209635**

06-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R91021**	RunNo: **91021**
Prep Date:	Analysis Date: **9/14/2022**	SeqNo: **3255742** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		104	70	130			
Surr: 4-Bromofluorobenzene	9.1		10.00		91.2	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	8.8		10.00		88.2	70	130			

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R91060**	RunNo: **91060**
Prep Date:	Analysis Date: **9/15/2022**	SeqNo: **3257050** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	102	70	130			
Toluene	19	1.0	20.00	0	96.6	70	130			
Chlorobenzene	20	1.0	20.00	0	98.3	70	130			
1,1-Dichloroethene	19	1.0	20.00	0	94.7	70	130			
Trichloroethene (TCE)	19	1.0	20.00	0	97.4	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		104	70	130			
Surr: 4-Bromofluorobenzene	9.2		10.00		92.4	70	130			
Surr: Dibromofluoromethane	10		10.00		100	70	130			
Surr: Toluene-d8	9.0		10.00		89.8	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R91060**	RunNo: **91060**
Prep Date:	Analysis Date: **9/15/2022**	SeqNo: **3258173** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209635**

06-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R91060**	RunNo: **91060**
Prep Date:	Analysis Date: **9/15/2022**	SeqNo: **3258173** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		104	70	130			
Surr: 4-Bromofluorobenzene	8.8		10.00		87.8	70	130			
Surr: Dibromofluoromethane	10		10.00		104	70	130			
Surr: Toluene-d8	9.0		10.00		90.3	70	130			

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R91090**	RunNo: **91090**
Prep Date:	Analysis Date: **9/16/2022**	SeqNo: **3258469** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	104	70	130			
Toluene	20	1.0	20.00	0	100	70	130			
Chlorobenzene	21	1.0	20.00	0	103	70	130			
1,1-Dichloroethene	19	1.0	20.00	0	95.9	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	98.7	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		103	70	130			
Surr: 4-Bromofluorobenzene	9.0		10.00		90.3	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	9.0		10.00		90.1	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209635**
06-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R91090**	RunNo: **91090**
Prep Date:	Analysis Date: **9/16/2022**	SeqNo: **3259688** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		105	70	130			
Surr: 4-Bromofluorobenzene	8.8		10.00		87.9	70	130			
Surr: Dibromofluoromethane	10		10.00		105	70	130			
Surr: Toluene-d8	8.9		10.00		89.0	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209635**
06-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70174**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **70174**	RunNo: **91112**
Prep Date: **9/14/2022**	Analysis Date: **9/16/2022**	SeqNo: **3259515** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Anthracene	ND	10								
Benz(a)anthracene	ND	5.0								
Benzo(b)fluoranthene	ND	10								
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	10								
2,4-Dinitrophenol	ND	20								
Fluoranthene	ND	10								
Fluorene	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
1-Methylnaphthalene	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
Naphthalene	ND	5.0								
Phenanthrene	ND	10								
Phenol	ND	20								
Pyrene	ND	10								
Pyridine	ND	40								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	50		200.0		24.9	15	84.5			
Surr: Phenol-d5	38		200.0		18.8	15	67			
Surr: 2,4,6-Tribromophenol	67		200.0		33.7	15	108			
Surr: Nitrobenzene-d5	31		100.0		30.6	16.8	112			
Surr: 2-Fluorobiphenyl	30		100.0		29.7	15	101			
Surr: 4-Terphenyl-d14	57		100.0		57.2	34.4	134			

Sample ID: **LCS-70174**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **70174**	RunNo: **91112**
Prep Date: **9/14/2022**	Analysis Date: **9/16/2022**	SeqNo: **3259516** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209635**

06-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **LCS-70174**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **70174**	RunNo: **91112**
Prep Date: **9/14/2022**	Analysis Date: **9/16/2022**	SeqNo: **3259516** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	54	10	100.0	0	53.9	21.3	104			
1,4-Dichlorobenzene	48	5.0	100.0	0	48.5	15	89.8			
Phenol	71	20	200.0	0	35.5	17	61.1			
Pyrene	74	10	100.0	0	74.1	61	123			
Surr: 2-Fluorophenol	80		200.0		40.1	15	84.5			
Surr: Phenol-d5	63		200.0		31.6	15	67			
Surr: 2,4,6-Tribromophenol	100		200.0		49.9	15	108			
Surr: Nitrobenzene-d5	58		100.0		57.7	16.8	112			
Surr: 2-Fluorobiphenyl	53		100.0		53.4	15	101			
Surr: 4-Terphenyl-d14	73		100.0		73.4	34.4	134			

Sample ID: **LCSD-70174**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **70174**	RunNo: **91112**
Prep Date: **9/14/2022**	Analysis Date: **9/16/2022**	SeqNo: **3259517** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	62	10	100.0	0	62.4	21.3	104	14.6	45.3	
1,4-Dichlorobenzene	57	5.0	100.0	0	56.5	15	89.8	15.3	39.6	
Phenol	79	20	200.0	0	39.3	17	61.1	10.2	42.5	
Pyrene	74	10	100.0	0	74.3	61	123	0.179	11.8	
Surr: 2-Fluorophenol	96		200.0		48.0	15	84.5	0	0	
Surr: Phenol-d5	74		200.0		37.1	15	67	0	0	
Surr: 2,4,6-Tribromophenol	120		200.0		59.6	15	108	0	0	
Surr: Nitrobenzene-d5	66		100.0		66.3	16.8	112	0	0	
Surr: 2-Fluorobiphenyl	62		100.0		61.8	15	101	0	0	
Surr: 4-Terphenyl-d14	75		100.0		75.2	34.4	134	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209635**

06-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **mb-70174**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**							
Client ID: **PBW**	Batch ID: **70174**	RunNo: **91075**							
Prep Date: **9/14/2022**	Analysis Date: **9/15/2022**	SeqNo: **3257245**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.30								
1-Methylnaphthalene	ND	0.30								
2-Methylnaphthalene	ND	0.30								
Acenaphthene	ND	0.30								
Fluorene	ND	0.30								
Phenanthrene	ND	0.30								
Anthracene	ND	0.30								
Fluoranthene	ND	0.30								
Pyrene	ND	1.0								
Benz(a)anthracene	ND	0.30								
Chrysene	ND	0.30								
Benzo(b)fluoranthene	ND	0.30								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	32		100.0		32.3	31.6	100			
Surr: 2,4,6-Tribromophenol	54		200.0		27.1	22	101			
Surr: 2-Fluorobiphenyl	35		100.0		34.8	26.7	90.1			
Surr: 4-Terphenyl-d14	67		100.0		67.4	72.3	147			S

Sample ID: **lcs-70174-lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**							
Client ID: **LCSW**	Batch ID: **70174**	RunNo: **91075**							
Prep Date: **9/14/2022**	Analysis Date: **9/15/2022**	SeqNo: **3257246**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.60	0.10	2.000	0	30.0	20.2	48.4			
Naphthalene	0.76	0.30	2.000	0	38.0	21.3	79.9			
1-Methylnaphthalene	0.74	0.30	2.000	0	37.0	22.2	80.3			
2-Methylnaphthalene	0.72	0.30	2.000	0	36.0	20.6	80.1			
Acenaphthene	0.86	0.30	2.000	0	43.0	29.8	82.7			
Fluorene	0.90	0.30	2.000	0	45.0	33.3	86			
Phenanthrene	1.1	0.30	2.000	0	53.0	38.2	93.9			
Anthracene	1.1	0.30	2.000	0	53.0	41.1	95.6			
Fluoranthene	1.2	0.30	2.000	0	61.0	52.9	123			
Pyrene	1.2	1.0	2.000	0	62.0	51	113			
Benz(a)anthracene	1.3	0.30	2.000	0	65.0	51	147			
Chrysene	1.3	0.30	2.000	0	65.0	55.3	115			
Benzo(b)fluoranthene	1.3	0.30	2.000	0	65.0	44.4	136			
Indeno(1,2,3-cd)pyrene	1.4	0.30	2.000	0	68.0	31.4	165			
Surr: Nitrobenzene-d5	53		100.0		52.5	31.6	100			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209635**

06-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **lcs-70174-lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**							
Client ID: **LCSW**	Batch ID: **70174**	RunNo: **91075**							
Prep Date: **9/14/2022**	Analysis Date: **9/15/2022**	SeqNo: **3257246**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	67		200.0		33.6	22	101			
Surr: 2-Fluorobiphenyl	53		100.0		52.6	26.7	90.1			
Surr: 4-Terphenyl-d14	60		100.0		59.8	72.3	147			S

Sample ID: **lcsd-70174-lf**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**							
Client ID: **LCSS02**	Batch ID: **70174**	RunNo: **91075**							
Prep Date: **9/14/2022**	Analysis Date: **9/15/2022**	SeqNo: **3257247**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.76	0.10	2.000	0	38.0	20.2	48.4	23.5	30.1	
Naphthalene	0.78	0.30	2.000	0	39.0	21.3	79.9	2.60	25.6	
1-Methylnaphthalene	0.80	0.30	2.000	0	40.0	22.2	80.3	7.79	25	
2-Methylnaphthalene	0.78	0.30	2.000	0	39.0	20.6	80.1	8.00	25	
Acenaphthene	0.96	0.30	2.000	0	48.0	29.8	82.7	11.0	27.8	
Fluorene	1.1	0.30	2.000	0	54.0	33.3	86	18.2	26.4	
Phenanthrene	1.2	0.30	2.000	0	61.0	38.2	93.9	14.0	27.9	
Anthracene	1.2	0.30	2.000	0	58.0	41.1	95.6	9.01	25.6	
Fluoranthene	1.2	0.30	2.000	0	61.0	52.9	123	0	22.8	
Pyrene	1.3	1.0	2.000	0	63.0	51	113	1.60	20	
Benz(a)anthracene	1.3	0.30	2.000	0	64.0	51	147	1.55	24.1	
Chrysene	1.3	0.30	2.000	0	63.0	55.3	115	3.13	20	
Benzo(b)fluoranthene	1.2	0.30	2.000	0	62.0	44.4	136	4.72	24.5	
Indeno(1,2,3-cd)pyrene	1.4	0.30	2.000	0	68.0	31.4	165	0	21.1	
Surr: Nitrobenzene-d5	65		100.0		64.7	31.6	100	0	0	
Surr: 2,4,6-Tribromophenol	77		200.0		38.7	22	101	0	0	
Surr: 2-Fluorobiphenyl	64		100.0		63.7	26.7	90.1	0	0	
Surr: 4-Terphenyl-d14	69		100.0		69.5	72.3	147	0	0	S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Marathon | Work Order Number: 2209635 | RcptNo: 1

Received By: Juan Rojas 9/14/2022 7:40:00 AM

Completed By: Sean Livingston 9/14/2022 7:56:43 AM

Reviewed By: KPG 9.14.22

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☑	No ☐	NA ☐
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: 14 7 (<2 or >12 unless noted)

Adjusted? NO

Checked by: JM 9/14/22

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.7	Good				
2	0.8	Good				
3	0.9	Good				
4	0.4	Good				

Released to Imaging: 4/21/2023 9:40:36 AM
Received by OCD: 4/21/2023 9:21:57 AM

Chain-of-Custody Record

t: Marathon Gallup Refinery

ddress: 92 Giant Crossing Road

Jamestown, NM,87347

808-640-1823

Fax#:

ckage:

ard ☐ Level 4 (Full Validation)

dation: ☐ Az Compliance

LC ☐ Other

D (Type)

Turn-Around Time:

X Standard Rush

Project Name: 3rd

2022 GW Sampling [redacted] Quarter

Project #: **697-080-001**

Project Manager:

Lesli Alexander/Mackensie Swift

Sampler:

On Ice: ☐ Yes ☐ No

# of Coolers: 4

Cooler Temp(including CF): See Remarks

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2209635	See Analyte List	8260B: VOC	8270C: SVOC	8270C SIM: PAH, 1,4 Dioxane	8015: TPH GRO/DRO/MRO	E200.7: Metals	E200.7: Dissolved Metals	E245.1 Mercury	E504.1: EDB	E335.4: Cyanide Subbed		537.1: PFAS	SM 5201B: BOD	410.4: COD	SM9223B E Coli
9/13	8:00		EB-9-13-22	13		001	X	X	X	X	X	X	X	X	X	X					
9/13	8:30		MKTF-46	13		002	X	X	X	X	X	X	X	X	X	X					
9/13	9:15		MKTF-18R	13		003	X	X	X	X	X	X	X	X	X	X					
[redacted]						004															
9/13	9:35		MKTF-38	13		004 005	X	X	X	X	X	X	X	X	X	X					
9/13	9:55		MKTF-40	13		005 006	X	X	X	X	X	X	X	X	X	X					
9/13	10:15		MKTF-31	13		006 007	X	X	X	X	X	X	X	X	X	X					
9/13	10:15		FB-9-13-22	3		007 008	X	X	X												
9/13	—		DUP-9-13-22	13		008 sent 9/14/22	X	X	X	X	X	X	X	X	X	X					
9/13	-		Trip Blank	2		009	X	X	X												

Time:	Relinquished by:	Received by:	Via:	Date	Time
9/13 11:30	Hilario Tarjo		courier	9/14/22	7.40
Time:	Relinquished by:	Received by:	Via:	Date	Time

4.7-0=4.7
0.8-0=0.8
0.9-0=0.9
6.4-0=0.4

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 04, 2022

Lesli Alexander

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX (505) 632-3911

RE: 2022 GW Sampling 3rd Quarter OrderNo.: 2209730

Dear Lesli Alexander:

Hall Environmental Analysis Laboratory received 12 sample(s) on 9/15/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **2209730**
Date: **10/4/2022**

CLIENT: Marathon
Project: 2022 GW Sampling 3rd Quarter

Analytical Notes Regarding this Workorder are listed below:

"S" flagged surrogates/spikes denote that the analyte recovery was outstide of the standard limits.

Analytical Notes Regarding EPA Method 8270 and 8270 SIMS:
Naphthalene and 1-Methylnaphthalene were reported by EPA Method 8270 instead of EPA Method 8270SIMs becuase of their elevated concentrations for sample NAPI-2

Analytical Notes Regarding EPA Method 8015DRO:
The LCS had slighly elevated recovry

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-14-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 8:30:00 AM
Lab ID: 2209730-001A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	9/16/2022 11:56:00 AM	A91113
Surr: BFB	102	0	70-130		%Rec	1	9/16/2022 11:56:00 AM	A91113
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	9/16/2022 9:00:28 PM	R91115
Toluene	ND	0.20	1.0		µg/L	1	9/16/2022 9:00:28 PM	R91115
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/16/2022 9:00:28 PM	R91115
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/16/2022 9:00:28 PM	R91115
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/16/2022 9:00:28 PM	R91115
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/16/2022 9:00:28 PM	R91115
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/16/2022 9:00:28 PM	R91115
Acetone	ND	2.5	10		µg/L	1	9/16/2022 9:00:28 PM	R91115
Bromomethane	ND	0.85	3.0		µg/L	1	9/16/2022 9:00:28 PM	R91115
2-Butanone	ND	2.0	10		µg/L	1	9/16/2022 9:00:28 PM	R91115
Carbon disulfide	ND	0.59	10		µg/L	1	9/16/2022 9:00:28 PM	R91115
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/16/2022 9:00:28 PM	R91115
Chloroform	ND	0.13	1.0		µg/L	1	9/16/2022 9:00:28 PM	R91115
Chloromethane	ND	0.41	3.0		µg/L	1	9/16/2022 9:00:28 PM	R91115
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/16/2022 9:00:28 PM	R91115
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/16/2022 9:00:28 PM	R91115
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/16/2022 9:00:28 PM	R91115
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/16/2022 9:00:28 PM	R91115
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/16/2022 9:00:28 PM	R91115
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/16/2022 9:00:28 PM	R91115
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/16/2022 9:00:28 PM	R91115
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/16/2022 9:00:28 PM	R91115
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/16/2022 9:00:28 PM	R91115
Styrene	ND	0.14	1.0		µg/L	1	9/16/2022 9:00:28 PM	R91115
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/16/2022 9:00:28 PM	R91115
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/16/2022 9:00:28 PM	R91115
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/16/2022 9:00:28 PM	R91115
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/16/2022 9:00:28 PM	R91115
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/16/2022 9:00:28 PM	R91115
Surr: 1,2-Dichloroethane-d4	103	0	70-130		%Rec	1	9/16/2022 9:00:28 PM	R91115
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	9/16/2022 9:00:28 PM	R91115
Surr: Dibromofluoromethane	115	0	70-130		%Rec	1	9/16/2022 9:00:28 PM	R91115
Surr: Toluene-d8	99.6	0	70-130		%Rec	1	9/16/2022 9:00:28 PM	R91115

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Estimated value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-14-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 8:30:00 AM
Lab ID: 2209730-001B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	9/19/2022 8:36:53 PM	70247

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-14-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 8:30:00 AM
Lab ID: 2209730-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.71	0.016	0.064		mg/L	1	9/23/2022 12:58:06 PM	70201
Motor Oil Range Organics (MRO)	0.89	0.052	0.080		mg/L	1	9/23/2022 12:58:06 PM	70201
Surr: DNOP	91.5	0	42.2-138		%Rec	1	9/23/2022 12:58:06 PM	70201
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	9/22/2022 6:39:28 PM	70216
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/22/2022 6:39:28 PM	70216
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	9/22/2022 6:39:28 PM	70216
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/22/2022 6:39:28 PM	70216
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/22/2022 6:39:28 PM	70216
Diethyl phthalate	ND	6.0	10		µg/L	1	9/22/2022 6:39:28 PM	70216
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/22/2022 6:39:28 PM	70216
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	9/22/2022 6:39:28 PM	70216
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/22/2022 6:39:28 PM	70216
2-Methylphenol	ND	5.0	10		µg/L	1	9/22/2022 6:39:28 PM	70216
3+4-Methylphenol	ND	5.1	10		µg/L	1	9/22/2022 6:39:28 PM	70216
Phenol	ND	18	20		µg/L	1	9/22/2022 6:39:28 PM	70216
Pyridine	ND	14	40		µg/L	1	9/22/2022 6:39:28 PM	70216
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/22/2022 6:39:28 PM	70216
Surr: 2-Fluorophenol	54.6	0	15-84.5		%Rec	1	9/22/2022 6:39:28 PM	70216
Surr: Phenol-d5	41.8	0	15-67		%Rec	1	9/22/2022 6:39:28 PM	70216
Surr: 2,4,6-Tribromophenol	66.9	0	15-108		%Rec	1	9/22/2022 6:39:28 PM	70216
Surr: Nitrobenzene-d5	73.4	0	16.8-112		%Rec	1	9/22/2022 6:39:28 PM	70216
Surr: 2-Fluorobiphenyl	68.9	0	15-101		%Rec	1	9/22/2022 6:39:28 PM	70216
Surr: 4-Terphenyl-d14	82.1	0	34.4-134		%Rec	1	9/22/2022 6:39:28 PM	70216
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	9/21/2022 10:51:00 AM	70216
Naphthalene	ND	0.20	0.30		µg/L	1	9/21/2022 10:51:00 AM	70216
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	9/21/2022 10:51:00 AM	70216
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	9/21/2022 10:51:00 AM	70216
Acenaphthene	ND	0.14	0.30		µg/L	1	9/21/2022 10:51:00 AM	70216
Fluorene	ND	0.095	0.30		µg/L	1	9/21/2022 10:51:00 AM	70216
Phenanthrene	ND	0.16	0.30		µg/L	1	9/21/2022 10:51:00 AM	70216
Anthracene	ND	0.14	0.30		µg/L	1	9/21/2022 10:51:00 AM	70216
Fluoranthene	ND	0.14	0.30		µg/L	1	9/21/2022 10:51:00 AM	70216
Pyrene	ND	0.32	1.0		µg/L	1	9/21/2022 10:51:00 AM	70216
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/21/2022 10:51:00 AM	70216
Chrysene	ND	0.25	0.30		µg/L	1	9/21/2022 10:51:00 AM	70216
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/21/2022 10:51:00 AM	70216
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/21/2022 10:51:00 AM	70216

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-14-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 8:30:00 AM
Lab ID: 2209730-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	67.7	0	31.6-100		%Rec	1	9/21/2022 10:51:00 AM	70216
Surr: 2-Fluorobiphenyl	63.5	0	26.7-90.1		%Rec	1	9/21/2022 10:51:00 AM	70216
Surr: 4-Terphenyl-d14	74.1	0	72.3-147		%Rec	1	9/21/2022 10:51:00 AM	70216

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-14-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 8:30:00 AM
Lab ID: 2209730-001D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	ND	0.0016	0.0030		mg/L	1	9/19/2022 11:35:23 AM	70240
Beryllium	ND	0.00088	0.0020		mg/L	1	9/19/2022 11:35:23 AM	70240
Cadmium	ND	0.0018	0.0020		mg/L	1	9/19/2022 11:35:23 AM	70240
Chromium	ND	0.0020	0.0060		mg/L	1	9/19/2022 11:35:23 AM	70240
Cobalt	ND	0.0035	0.0060		mg/L	1	9/19/2022 11:35:23 AM	70240
Nickel	ND	0.0053	0.010		mg/L	1	9/19/2022 11:35:23 AM	70240
Silver	ND	0.0018	0.0050		mg/L	1	9/19/2022 11:35:23 AM	70240
Vanadium	ND	0.0035	0.050		mg/L	1	9/19/2022 11:35:23 AM	70240
Zinc	0.0052	0.0039	0.010	J	mg/L	1	9/19/2022 11:35:23 AM	70240
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/19/2022 3:00:18 PM	70240
Arsenic	ND	0.00013	0.0010		mg/L	1	9/19/2022 3:00:18 PM	70240
Lead	ND	0.000061	0.00050		mg/L	1	9/19/2022 3:00:18 PM	70240
Selenium	ND	0.00037	0.0010		mg/L	1	9/19/2022 3:00:18 PM	70240
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/20/2022 3:44:52 PM	70279

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-14-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 8:30:00 AM
Lab ID: 2209730-001E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	ND	0.0011	0.0020		mg/L	1	9/27/2022 2:49:12 PM	B91347
Beryllium	ND	0.00088	0.0020		mg/L	1	9/27/2022 2:49:12 PM	B91347
Cadmium	ND	0.00098	0.0020		mg/L	1	9/27/2022 2:49:12 PM	B91347
Chromium	ND	0.0020	0.0060		mg/L	1	9/27/2022 2:49:12 PM	B91347
Cobalt	ND	0.0024	0.0060		mg/L	1	9/27/2022 2:49:12 PM	B91347
Nickel	ND	0.0033	0.010		mg/L	1	9/27/2022 2:49:12 PM	B91347
Silver	ND	0.0013	0.0050		mg/L	1	9/28/2022 1:13:05 PM	A91392
Vanadium	ND	0.0017	0.050		mg/L	1	9/27/2022 2:49:12 PM	B91347
Zinc	0.0069	0.0032	0.010	J	mg/L	1	9/27/2022 2:49:12 PM	B91347
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/15/2022 5:21:03 PM	C91078
Arsenic	ND	0.00012	0.0010		mg/L	1	9/15/2022 5:21:03 PM	C91078
Lead	ND	0.000057	0.00050		mg/L	1	9/15/2022 5:21:03 PM	C91078
Selenium	ND	0.00034	0.0010		mg/L	1	9/15/2022 5:21:03 PM	C91078
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/20/2022 3:55:31 PM	70279

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 9:00:00 AM
Lab ID: 2209730-002A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.030	0.0090	0.050	J	mg/L	1	9/16/2022 12:15:00 PM	A91113
Surr: BFB	104	0	70-130		%Rec	1	9/16/2022 12:15:00 PM	A91113
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	9/16/2022 9:29:03 PM	R91115
Toluene	ND	0.20	1.0		µg/L	1	9/16/2022 9:29:03 PM	R91115
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/16/2022 9:29:03 PM	R91115
Methyl tert-butyl ether (MTBE)	33	0.39	1.0		µg/L	1	9/16/2022 9:29:03 PM	R91115
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/16/2022 9:29:03 PM	R91115
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/16/2022 9:29:03 PM	R91115
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/16/2022 9:29:03 PM	R91115
Acetone	ND	2.5	10		µg/L	1	9/16/2022 9:29:03 PM	R91115
Bromomethane	ND	0.85	3.0		µg/L	1	9/16/2022 9:29:03 PM	R91115
2-Butanone	ND	2.0	10		µg/L	1	9/16/2022 9:29:03 PM	R91115
Carbon disulfide	ND	0.59	10		µg/L	1	9/16/2022 9:29:03 PM	R91115
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/16/2022 9:29:03 PM	R91115
Chloroform	ND	0.13	1.0		µg/L	1	9/16/2022 9:29:03 PM	R91115
Chloromethane	ND	0.41	3.0		µg/L	1	9/16/2022 9:29:03 PM	R91115
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/16/2022 9:29:03 PM	R91115
1,1-Dichloroethane	1.6	0.27	1.0		µg/L	1	9/16/2022 9:29:03 PM	R91115
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/16/2022 9:29:03 PM	R91115
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/16/2022 9:29:03 PM	R91115
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/16/2022 9:29:03 PM	R91115
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/16/2022 9:29:03 PM	R91115
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/16/2022 9:29:03 PM	R91115
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/16/2022 9:29:03 PM	R91115
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/16/2022 9:29:03 PM	R91115
Styrene	ND	0.14	1.0		µg/L	1	9/16/2022 9:29:03 PM	R91115
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/16/2022 9:29:03 PM	R91115
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/16/2022 9:29:03 PM	R91115
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/16/2022 9:29:03 PM	R91115
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/16/2022 9:29:03 PM	R91115
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/16/2022 9:29:03 PM	R91115
Surr: 1,2-Dichloroethane-d4	98.8	0	70-130		%Rec	1	9/16/2022 9:29:03 PM	R91115
Surr: 4-Bromofluorobenzene	107	0	70-130		%Rec	1	9/16/2022 9:29:03 PM	R91115
Surr: Dibromofluoromethane	116	0	70-130		%Rec	1	9/16/2022 9:29:03 PM	R91115
Surr: Toluene-d8	102	0	70-130		%Rec	1	9/16/2022 9:29:03 PM	R91115

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Estimated value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 9:00:00 AM
Lab ID: 2209730-002B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	9/19/2022 9:07:30 PM	70247

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 9:00:00 AM
Lab ID: 2209730-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.20	0.016	0.064		mg/L	1	9/23/2022 1:21:55 PM	70201
Motor Oil Range Organics (MRO)	0.068	0.052	0.080	J	mg/L	1	9/23/2022 1:21:55 PM	70201
Surr: DNOP	94.3	0	42.2-138		%Rec	1	9/23/2022 1:21:55 PM	70201
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	9/22/2022 7:21:40 PM	70216
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/22/2022 7:21:40 PM	70216
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	9/22/2022 7:21:40 PM	70216
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/22/2022 7:21:40 PM	70216
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/22/2022 7:21:40 PM	70216
Diethyl phthalate	ND	6.0	10		µg/L	1	9/22/2022 7:21:40 PM	70216
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/22/2022 7:21:40 PM	70216
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	9/22/2022 7:21:40 PM	70216
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/22/2022 7:21:40 PM	70216
2-Methylphenol	ND	5.0	10		µg/L	1	9/22/2022 7:21:40 PM	70216
3+4-Methylphenol	ND	5.1	10		µg/L	1	9/22/2022 7:21:40 PM	70216
Phenol	ND	18	20		µg/L	1	9/22/2022 7:21:40 PM	70216
Pyridine	ND	14	40		µg/L	1	9/22/2022 7:21:40 PM	70216
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/22/2022 7:21:40 PM	70216
Surr: 2-Fluorophenol	39.5	0	15-84.5		%Rec	1	9/22/2022 7:21:40 PM	70216
Surr: Phenol-d5	30.8	0	15-67		%Rec	1	9/22/2022 7:21:40 PM	70216
Surr: 2,4,6-Tribromophenol	59.1	0	15-108		%Rec	1	9/22/2022 7:21:40 PM	70216
Surr: Nitrobenzene-d5	53.4	0	16.8-112		%Rec	1	9/22/2022 7:21:40 PM	70216
Surr: 2-Fluorobiphenyl	49.8	0	15-101		%Rec	1	9/22/2022 7:21:40 PM	70216
Surr: 4-Terphenyl-d14	74.5	0	34.4-134		%Rec	1	9/22/2022 7:21:40 PM	70216
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	5.0	0.11	1.0		µg/L	1	9/21/2022 11:35:00 AM	70216
Naphthalene	ND	0.20	0.30		µg/L	1	9/21/2022 11:35:00 AM	70216
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	9/21/2022 11:35:00 AM	70216
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	9/21/2022 11:35:00 AM	70216
Acenaphthene	ND	0.14	0.30		µg/L	1	9/21/2022 11:35:00 AM	70216
Fluorene	ND	0.095	0.30		µg/L	1	9/21/2022 11:35:00 AM	70216
Phenanthrene	ND	0.16	0.30		µg/L	1	9/21/2022 11:35:00 AM	70216
Anthracene	ND	0.14	0.30		µg/L	1	9/21/2022 11:35:00 AM	70216
Fluoranthene	ND	0.14	0.30		µg/L	1	9/21/2022 11:35:00 AM	70216
Pyrene	ND	0.32	1.0		µg/L	1	9/21/2022 11:35:00 AM	70216
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/21/2022 11:35:00 AM	70216
Chrysene	ND	0.25	0.30		µg/L	1	9/21/2022 11:35:00 AM	70216
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/21/2022 11:35:00 AM	70216
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/21/2022 11:35:00 AM	70216

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 9:00:00 AM
Lab ID: 2209730-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	48.1	0	31.6-100		%Rec	1	9/21/2022 11:35:00 AM	70216
Surr: 2-Fluorobiphenyl	47.6	0	26.7-90.1		%Rec	1	9/21/2022 11:35:00 AM	70216
Surr: 4-Terphenyl-d14	60.2	0	72.3-147	S	%Rec	1	9/21/2022 11:35:00 AM	70216

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 9:00:00 AM
Lab ID: 2209730-002D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.18	0.0016	0.0030		mg/L	1	9/19/2022 11:38:44 AM	70240
Beryllium	ND	0.00088	0.0020		mg/L	1	9/19/2022 11:38:44 AM	70240
Cadmium	ND	0.0018	0.0020		mg/L	1	9/19/2022 11:38:44 AM	70240
Chromium	ND	0.0020	0.0060		mg/L	1	9/19/2022 11:38:44 AM	70240
Cobalt	0.011	0.0035	0.0060		mg/L	1	9/19/2022 11:38:44 AM	70240
Nickel	0.029	0.0053	0.010		mg/L	1	9/19/2022 11:38:44 AM	70240
Silver	ND	0.0018	0.0050		mg/L	1	9/19/2022 11:38:44 AM	70240
Vanadium	0.015	0.0035	0.050	J	mg/L	1	9/19/2022 11:38:44 AM	70240
Zinc	0.0040	0.0039	0.010	J	mg/L	1	9/19/2022 11:38:44 AM	70240
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/19/2022 3:02:44 PM	70240
Arsenic	0.0011	0.00013	0.0010		mg/L	1	9/19/2022 3:02:44 PM	70240
Lead	0.0032	0.000061	0.00050		mg/L	1	9/19/2022 3:02:44 PM	70240
Selenium	0.0011	0.00037	0.0010		mg/L	1	9/19/2022 3:02:44 PM	70240
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/20/2022 3:57:40 PM	70279

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 9:00:00 AM
Lab ID: 2209730-002E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.059	0.0011	0.0020		mg/L	1	9/27/2022 2:53:29 PM	B91347
Beryllium	ND	0.00088	0.0020		mg/L	1	9/27/2022 2:53:29 PM	B91347
Cadmium	ND	0.00098	0.0020		mg/L	1	9/27/2022 2:53:29 PM	B91347
Chromium	ND	0.0020	0.0060		mg/L	1	9/27/2022 2:53:29 PM	B91347
Cobalt	ND	0.0024	0.0060		mg/L	1	9/27/2022 2:53:29 PM	B91347
Nickel	0.032	0.0033	0.010		mg/L	1	9/27/2022 2:53:29 PM	B91347
Silver	0.0043	0.0013	0.0050	J	mg/L	1	9/28/2022 1:15:15 PM	A91392
Vanadium	0.0038	0.0017	0.050	J	mg/L	1	9/27/2022 2:53:29 PM	B91347
Zinc	0.011	0.0032	0.010		mg/L	1	9/27/2022 2:53:29 PM	B91347
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/15/2022 5:23:44 PM	C91078
Arsenic	0.00042	0.00012	0.0010	J	mg/L	1	9/15/2022 5:23:44 PM	C91078
Lead	0.000093	0.000057	0.00050	J	mg/L	1	9/15/2022 5:23:44 PM	C91078
Selenium	0.00051	0.00034	0.0010	J	mg/L	1	9/15/2022 5:23:44 PM	C91078
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/20/2022 3:59:48 PM	70279

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-28
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 9:45:00 AM
Lab ID: 2209730-003A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	9/16/2022 12:35:00 PM	A91113
Surr: BFB	98.0	0	70-130		%Rec	1	9/16/2022 12:35:00 PM	A91113
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	9/16/2022 11:51:46 PM	R91115
Toluene	ND	0.20	1.0		µg/L	1	9/16/2022 11:51:46 PM	R91115
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/16/2022 11:51:46 PM	R91115
Methyl tert-butyl ether (MTBE)	1.6	0.39	1.0		µg/L	1	9/16/2022 11:51:46 PM	R91115
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/16/2022 11:51:46 PM	R91115
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/16/2022 11:51:46 PM	R91115
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/16/2022 11:51:46 PM	R91115
Acetone	ND	2.5	10		µg/L	1	9/16/2022 11:51:46 PM	R91115
Bromomethane	ND	0.85	3.0		µg/L	1	9/16/2022 11:51:46 PM	R91115
2-Butanone	ND	2.0	10		µg/L	1	9/16/2022 11:51:46 PM	R91115
Carbon disulfide	ND	0.59	10		µg/L	1	9/16/2022 11:51:46 PM	R91115
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/16/2022 11:51:46 PM	R91115
Chloroform	ND	0.13	1.0		µg/L	1	9/16/2022 11:51:46 PM	R91115
Chloromethane	ND	0.41	3.0		µg/L	1	9/16/2022 11:51:46 PM	R91115
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/16/2022 11:51:46 PM	R91115
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/16/2022 11:51:46 PM	R91115
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/16/2022 11:51:46 PM	R91115
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/16/2022 11:51:46 PM	R91115
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/16/2022 11:51:46 PM	R91115
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/16/2022 11:51:46 PM	R91115
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/16/2022 11:51:46 PM	R91115
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/16/2022 11:51:46 PM	R91115
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/16/2022 11:51:46 PM	R91115
Styrene	ND	0.14	1.0		µg/L	1	9/16/2022 11:51:46 PM	R91115
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/16/2022 11:51:46 PM	R91115
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/16/2022 11:51:46 PM	R91115
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/16/2022 11:51:46 PM	R91115
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/16/2022 11:51:46 PM	R91115
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/16/2022 11:51:46 PM	R91115
Surr: 1,2-Dichloroethane-d4	105	0	70-130		%Rec	1	9/16/2022 11:51:46 PM	R91115
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	9/16/2022 11:51:46 PM	R91115
Surr: Dibromofluoromethane	114	0	70-130		%Rec	1	9/16/2022 11:51:46 PM	R91115
Surr: Toluene-d8	104	0	70-130		%Rec	1	9/16/2022 11:51:46 PM	R91115

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Estimated value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-28
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 9:45:00 AM
Lab ID: 2209730-003B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	9/19/2022 9:38:05 PM	70247

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-28
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 9:45:00 AM
Lab ID: 2209730-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.16	0.016	0.064		mg/L	1	9/23/2022 1:45:47 PM	70201
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	9/23/2022 1:45:47 PM	70201
Surr: DNOP	52.5	0	42.2-138		%Rec	1	9/23/2022 1:45:47 PM	70201
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	9/22/2022 8:04:02 PM	70216
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/22/2022 8:04:02 PM	70216
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	9/22/2022 8:04:02 PM	70216
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/22/2022 8:04:02 PM	70216
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/22/2022 8:04:02 PM	70216
Diethyl phthalate	ND	6.0	10		µg/L	1	9/22/2022 8:04:02 PM	70216
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/22/2022 8:04:02 PM	70216
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	9/22/2022 8:04:02 PM	70216
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/22/2022 8:04:02 PM	70216
2-Methylphenol	ND	5.0	10		µg/L	1	9/22/2022 8:04:02 PM	70216
3+4-Methylphenol	ND	5.1	10		µg/L	1	9/22/2022 8:04:02 PM	70216
Phenol	ND	18	20		µg/L	1	9/22/2022 8:04:02 PM	70216
Pyridine	ND	14	40		µg/L	1	9/22/2022 8:04:02 PM	70216
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/22/2022 8:04:02 PM	70216
Surr: 2-Fluorophenol	33.5	0	15-84.5		%Rec	1	9/22/2022 8:04:02 PM	70216
Surr: Phenol-d5	25.5	0	15-67		%Rec	1	9/22/2022 8:04:02 PM	70216
Surr: 2,4,6-Tribromophenol	53.6	0	15-108		%Rec	1	9/22/2022 8:04:02 PM	70216
Surr: Nitrobenzene-d5	47.7	0	16.8-112		%Rec	1	9/22/2022 8:04:02 PM	70216
Surr: 2-Fluorobiphenyl	42.9	0	15-101		%Rec	1	9/22/2022 8:04:02 PM	70216
Surr: 4-Terphenyl-d14	68.6	0	34.4-134		%Rec	1	9/22/2022 8:04:02 PM	70216
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	0.36	0.11	1.0	J	µg/L	1	9/21/2022 12:20:00 PM	70216
Naphthalene	ND	0.20	0.30		µg/L	1	9/21/2022 12:20:00 PM	70216
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	9/21/2022 12:20:00 PM	70216
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	9/21/2022 12:20:00 PM	70216
Acenaphthene	ND	0.14	0.30		µg/L	1	9/21/2022 12:20:00 PM	70216
Fluorene	ND	0.095	0.30		µg/L	1	9/21/2022 12:20:00 PM	70216
Phenanthrene	ND	0.16	0.30		µg/L	1	9/21/2022 12:20:00 PM	70216
Anthracene	ND	0.14	0.30		µg/L	1	9/21/2022 12:20:00 PM	70216
Fluoranthene	ND	0.14	0.30		µg/L	1	9/21/2022 12:20:00 PM	70216
Pyrene	ND	0.32	1.0		µg/L	1	9/21/2022 12:20:00 PM	70216
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/21/2022 12:20:00 PM	70216
Chrysene	ND	0.25	0.30		µg/L	1	9/21/2022 12:20:00 PM	70216
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/21/2022 12:20:00 PM	70216
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/21/2022 12:20:00 PM	70216

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-28
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 9:45:00 AM
Lab ID: 2209730-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	43.6	0	31.6-100		%Rec	1	9/21/2022 12:20:00 PM	70216
Surr: 2-Fluorobiphenyl	42.8	0	26.7-90.1		%Rec	1	9/21/2022 12:20:00 PM	70216
Surr: 4-Terphenyl-d14	55.9	0	72.3-147	S	%Rec	1	9/21/2022 12:20:00 PM	70216

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-28
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 9:45:00 AM
Lab ID: 2209730-003D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.24	0.0016	0.0030		mg/L	1	9/19/2022 11:41:55 AM	70240
Beryllium	ND	0.00088	0.0020		mg/L	1	9/19/2022 11:41:55 AM	70240
Cadmium	ND	0.0018	0.0020		mg/L	1	9/19/2022 11:41:55 AM	70240
Chromium	ND	0.0020	0.0060		mg/L	1	9/19/2022 11:41:55 AM	70240
Cobalt	0.012	0.0035	0.0060		mg/L	1	9/19/2022 11:41:55 AM	70240
Nickel	ND	0.0053	0.010		mg/L	1	9/19/2022 11:41:55 AM	70240
Silver	ND	0.0018	0.0050		mg/L	1	9/19/2022 11:41:55 AM	70240
Vanadium	0.034	0.0035	0.050	J	mg/L	1	9/19/2022 11:41:55 AM	70240
Zinc	0.024	0.0039	0.010		mg/L	1	9/19/2022 11:41:55 AM	70240
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/19/2022 3:10:04 PM	70240
Arsenic	0.0040	0.00013	0.0010		mg/L	1	9/19/2022 3:10:04 PM	70240
Lead	0.011	0.000061	0.00050		mg/L	1	9/19/2022 3:10:04 PM	70240
Selenium	0.0026	0.00037	0.0010		mg/L	1	9/19/2022 3:10:04 PM	70240
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/20/2022 4:01:56 PM	70279

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-28
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 9:45:00 AM
Lab ID: 2209730-003E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.073	0.0011	0.0020		mg/L	1	9/27/2022 2:57:42 PM	B91347
Beryllium	ND	0.00088	0.0020		mg/L	1	9/27/2022 2:57:42 PM	B91347
Cadmium	ND	0.00098	0.0020		mg/L	1	9/27/2022 2:57:42 PM	B91347
Chromium	ND	0.0020	0.0060		mg/L	1	9/27/2022 2:57:42 PM	B91347
Cobalt	ND	0.0024	0.0060		mg/L	1	9/27/2022 2:57:42 PM	B91347
Nickel	0.0050	0.0033	0.010	J	mg/L	1	9/27/2022 2:57:42 PM	B91347
Silver	0.0019	0.0013	0.0050	J	mg/L	1	9/28/2022 1:17:29 PM	A91392
Vanadium	0.0064	0.0017	0.050	J	mg/L	1	9/27/2022 2:57:42 PM	B91347
Zinc	0.043	0.0032	0.010		mg/L	1	9/27/2022 2:57:42 PM	B91347
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	0.00077	0.00044	0.0010	J	mg/L	1	9/15/2022 5:26:24 PM	C91078
Arsenic	0.00093	0.00012	0.0010	J	mg/L	1	9/15/2022 5:26:24 PM	C91078
Lead	0.00014	0.000057	0.00050	J	mg/L	1	9/15/2022 5:26:24 PM	C91078
Selenium	0.00044	0.00034	0.0010	J	mg/L	1	9/15/2022 5:26:24 PM	C91078
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/20/2022 4:04:04 PM	70279

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-29
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 10:10:00 AM
Lab ID: 2209730-004A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.020	0.0090	0.050	J	mg/L	1	9/16/2022 12:55:00 PM	A91113
Surr: BFB	101	0	70-130		%Rec	1	9/16/2022 12:55:00 PM	A91113
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	9/17/2022 12:20:23 AM	R91115
Toluene	ND	0.20	1.0		µg/L	1	9/17/2022 12:20:23 AM	R91115
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/17/2022 12:20:23 AM	R91115
Methyl tert-butyl ether (MTBE)	22	0.39	1.0		µg/L	1	9/17/2022 12:20:23 AM	R91115
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/17/2022 12:20:23 AM	R91115
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/17/2022 12:20:23 AM	R91115
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/17/2022 12:20:23 AM	R91115
Acetone	ND	2.5	10		µg/L	1	9/17/2022 12:20:23 AM	R91115
Bromomethane	ND	0.85	3.0		µg/L	1	9/17/2022 12:20:23 AM	R91115
2-Butanone	ND	2.0	10		µg/L	1	9/17/2022 12:20:23 AM	R91115
Carbon disulfide	ND	0.59	10		µg/L	1	9/17/2022 12:20:23 AM	R91115
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/17/2022 12:20:23 AM	R91115
Chloroform	ND	0.13	1.0		µg/L	1	9/17/2022 12:20:23 AM	R91115
Chloromethane	ND	0.41	3.0		µg/L	1	9/17/2022 12:20:23 AM	R91115
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/17/2022 12:20:23 AM	R91115
1,1-Dichloroethane	0.90	0.27	1.0	J	µg/L	1	9/17/2022 12:20:23 AM	R91115
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/17/2022 12:20:23 AM	R91115
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/17/2022 12:20:23 AM	R91115
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/17/2022 12:20:23 AM	R91115
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/17/2022 12:20:23 AM	R91115
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/17/2022 12:20:23 AM	R91115
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/17/2022 12:20:23 AM	R91115
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/17/2022 12:20:23 AM	R91115
Styrene	ND	0.14	1.0		µg/L	1	9/17/2022 12:20:23 AM	R91115
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/17/2022 12:20:23 AM	R91115
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/17/2022 12:20:23 AM	R91115
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/17/2022 12:20:23 AM	R91115
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/17/2022 12:20:23 AM	R91115
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/17/2022 12:20:23 AM	R91115
Surr: 1,2-Dichloroethane-d4	102	0	70-130		%Rec	1	9/17/2022 12:20:23 AM	R91115
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	9/17/2022 12:20:23 AM	R91115
Surr: Dibromofluoromethane	117	0	70-130		%Rec	1	9/17/2022 12:20:23 AM	R91115
Surr: Toluene-d8	102	0	70-130		%Rec	1	9/17/2022 12:20:23 AM	R91115

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Estimated value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-29
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 10:10:00 AM
Lab ID: 2209730-004B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	9/19/2022 10:08:44 PM	70247

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-29
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 10:10:00 AM
Lab ID: 2209730-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	1.2	0.016	0.064		mg/L	1	9/23/2022 2:09:37 PM	70201
Motor Oil Range Organics (MRO)	0.84	0.052	0.080		mg/L	1	9/23/2022 2:09:37 PM	70201
Surr: DNOP	97.8	0	42.2-138		%Rec	1	9/23/2022 2:09:37 PM	70201
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	9/22/2022 8:46:17 PM	70216
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/22/2022 8:46:17 PM	70216
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	9/22/2022 8:46:17 PM	70216
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/22/2022 8:46:17 PM	70216
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/22/2022 8:46:17 PM	70216
Diethyl phthalate	ND	6.0	10		µg/L	1	9/22/2022 8:46:17 PM	70216
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/22/2022 8:46:17 PM	70216
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	9/22/2022 8:46:17 PM	70216
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/22/2022 8:46:17 PM	70216
2-Methylphenol	ND	5.0	10		µg/L	1	9/22/2022 8:46:17 PM	70216
3+4-Methylphenol	ND	5.1	10		µg/L	1	9/22/2022 8:46:17 PM	70216
Phenol	ND	18	20		µg/L	1	9/22/2022 8:46:17 PM	70216
Pyridine	ND	14	40		µg/L	1	9/22/2022 8:46:17 PM	70216
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/22/2022 8:46:17 PM	70216
Surr: 2-Fluorophenol	52.7	0	15-84.5		%Rec	1	9/22/2022 8:46:17 PM	70216
Surr: Phenol-d5	39.9	0	15-67		%Rec	1	9/22/2022 8:46:17 PM	70216
Surr: 2,4,6-Tribromophenol	61.0	0	15-108		%Rec	1	9/22/2022 8:46:17 PM	70216
Surr: Nitrobenzene-d5	72.6	0	16.8-112		%Rec	1	9/22/2022 8:46:17 PM	70216
Surr: 2-Fluorobiphenyl	63.8	0	15-101		%Rec	1	9/22/2022 8:46:17 PM	70216
Surr: 4-Terphenyl-d14	82.3	0	34.4-134		%Rec	1	9/22/2022 8:46:17 PM	70216
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	4.6	0.11	1.0		µg/L	1	9/21/2022 1:04:00 PM	70216
Naphthalene	ND	0.20	0.30		µg/L	1	9/21/2022 1:04:00 PM	70216
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	9/21/2022 1:04:00 PM	70216
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	9/21/2022 1:04:00 PM	70216
Acenaphthene	ND	0.14	0.30		µg/L	1	9/21/2022 1:04:00 PM	70216
Fluorene	ND	0.095	0.30		µg/L	1	9/21/2022 1:04:00 PM	70216
Phenanthrene	ND	0.16	0.30		µg/L	1	9/21/2022 1:04:00 PM	70216
Anthracene	ND	0.14	0.30		µg/L	1	9/21/2022 1:04:00 PM	70216
Fluoranthene	ND	0.14	0.30		µg/L	1	9/21/2022 1:04:00 PM	70216
Pyrene	ND	0.32	1.0		µg/L	1	9/21/2022 1:04:00 PM	70216
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/21/2022 1:04:00 PM	70216
Chrysene	ND	0.25	0.30		µg/L	1	9/21/2022 1:04:00 PM	70216
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/21/2022 1:04:00 PM	70216
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/21/2022 1:04:00 PM	70216

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-29
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 10:10:00 AM
Lab ID: 2209730-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	64.7	0	31.6-100		%Rec	1	9/21/2022 1:04:00 PM	70216
Surr: 2-Fluorobiphenyl	59.0	0	26.7-90.1		%Rec	1	9/21/2022 1:04:00 PM	70216
Surr: 4-Terphenyl-d14	62.2	0	72.3-147	S	%Rec	1	9/21/2022 1:04:00 PM	70216

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-29
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 10:10:00 AM
Lab ID: 2209730-004D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.30	0.0016	0.0030		mg/L	1	9/19/2022 11:49:56 AM	70240
Beryllium	ND	0.00088	0.0020		mg/L	1	9/19/2022 11:49:56 AM	70240
Cadmium	ND	0.0018	0.0020		mg/L	1	9/19/2022 11:49:56 AM	70240
Chromium	ND	0.0020	0.0060		mg/L	1	9/19/2022 11:49:56 AM	70240
Cobalt	0.022	0.0035	0.0060		mg/L	1	9/19/2022 11:49:56 AM	70240
Nickel	0.015	0.0053	0.010		mg/L	1	9/19/2022 11:49:56 AM	70240
Silver	0.0026	0.0018	0.0050	J	mg/L	1	9/19/2022 11:49:56 AM	70240
Vanadium	0.011	0.0035	0.050	J	mg/L	1	9/19/2022 11:49:56 AM	70240
Zinc	ND	0.0039	0.010		mg/L	1	9/19/2022 11:49:56 AM	70240
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/19/2022 3:12:31 PM	70240
Arsenic	0.00094	0.00013	0.0010	J	mg/L	1	9/19/2022 3:12:31 PM	70240
Lead	0.00062	0.000061	0.00050		mg/L	1	9/19/2022 3:12:31 PM	70240
Selenium	ND	0.00037	0.0010		mg/L	1	9/19/2022 3:12:31 PM	70240
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/20/2022 4:06:13 PM	70279

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-29
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 10:10:00 AM
Lab ID: 2209730-004E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.20	0.0011	0.0020		mg/L	1	9/27/2022 3:10:02 PM	B91347
Beryllium	ND	0.00088	0.0020		mg/L	1	9/27/2022 3:10:02 PM	B91347
Cadmium	ND	0.00098	0.0020		mg/L	1	9/27/2022 3:10:02 PM	B91347
Chromium	ND	0.0020	0.0060		mg/L	1	9/27/2022 3:10:02 PM	B91347
Cobalt	ND	0.0024	0.0060		mg/L	1	9/27/2022 3:10:02 PM	B91347
Nickel	0.018	0.0033	0.010		mg/L	1	9/27/2022 3:10:02 PM	B91347
Silver	0.0077	0.0013	0.0050		mg/L	1	9/28/2022 1:19:36 PM	A91392
Vanadium	0.0083	0.0017	0.050	J	mg/L	1	9/27/2022 3:10:02 PM	B91347
Zinc	0.011	0.0032	0.010		mg/L	1	9/27/2022 3:10:02 PM	B91347
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/15/2022 5:29:04 PM	C91078
Arsenic	0.00078	0.00012	0.0010	J	mg/L	1	9/15/2022 5:29:04 PM	C91078
Lead	ND	0.000057	0.00050		mg/L	1	9/15/2022 5:29:04 PM	C91078
Selenium	ND	0.00034	0.0010		mg/L	1	9/15/2022 5:29:04 PM	C91078
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/20/2022 4:08:22 PM	70279

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-30
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 10:30:00 AM
Lab ID: 2209730-005A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.028	0.0090	0.050	J	mg/L	1	9/16/2022 1:14:00 PM	A91113
Surr: BFB	103	0	70-130		%Rec	1	9/16/2022 1:14:00 PM	A91113
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	9/17/2022 12:49:02 AM	R91115
Toluene	ND	0.20	1.0		µg/L	1	9/17/2022 12:49:02 AM	R91115
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/17/2022 12:49:02 AM	R91115
Methyl tert-butyl ether (MTBE)	6.6	0.39	1.0		µg/L	1	9/17/2022 12:49:02 AM	R91115
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/17/2022 12:49:02 AM	R91115
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/17/2022 12:49:02 AM	R91115
1,2-Dichloroethane (EDC)	1.1	0.25	1.0		µg/L	1	9/17/2022 12:49:02 AM	R91115
Acetone	ND	2.5	10		µg/L	1	9/17/2022 12:49:02 AM	R91115
Bromomethane	ND	0.85	3.0		µg/L	1	9/17/2022 12:49:02 AM	R91115
2-Butanone	ND	2.0	10		µg/L	1	9/17/2022 12:49:02 AM	R91115
Carbon disulfide	ND	0.59	10		µg/L	1	9/17/2022 12:49:02 AM	R91115
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/17/2022 12:49:02 AM	R91115
Chloroform	ND	0.13	1.0		µg/L	1	9/17/2022 12:49:02 AM	R91115
Chloromethane	ND	0.41	3.0		µg/L	1	9/17/2022 12:49:02 AM	R91115
cis-1,2-DCE	1.9	0.39	1.0		µg/L	1	9/17/2022 12:49:02 AM	R91115
1,1-Dichloroethane	21	0.27	1.0		µg/L	1	9/17/2022 12:49:02 AM	R91115
1,1-Dichloroethene	1.4	0.20	1.0		µg/L	1	9/17/2022 12:49:02 AM	R91115
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/17/2022 12:49:02 AM	R91115
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/17/2022 12:49:02 AM	R91115
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/17/2022 12:49:02 AM	R91115
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/17/2022 12:49:02 AM	R91115
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/17/2022 12:49:02 AM	R91115
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/17/2022 12:49:02 AM	R91115
Styrene	ND	0.14	1.0		µg/L	1	9/17/2022 12:49:02 AM	R91115
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/17/2022 12:49:02 AM	R91115
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/17/2022 12:49:02 AM	R91115
Trichloroethene (TCE)	1.2	0.20	1.0		µg/L	1	9/17/2022 12:49:02 AM	R91115
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/17/2022 12:49:02 AM	R91115
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/17/2022 12:49:02 AM	R91115
Surr: 1,2-Dichloroethane-d4	107	0	70-130		%Rec	1	9/17/2022 12:49:02 AM	R91115
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	1	9/17/2022 12:49:02 AM	R91115
Surr: Dibromofluoromethane	120	0	70-130		%Rec	1	9/17/2022 12:49:02 AM	R91115
Surr: Toluene-d8	100	0	70-130		%Rec	1	9/17/2022 12:49:02 AM	R91115

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-30
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 10:30:00 AM
Lab ID: 2209730-005B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	9/19/2022 10:39:21 PM	70247

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-30
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 10:30:00 AM
Lab ID: 2209730-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.15	0.016	0.064		mg/L	1	9/23/2022 2:33:28 PM	70201
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	9/23/2022 2:33:28 PM	70201
Surr: DNOP	101	0	42.2-138		%Rec	1	9/23/2022 2:33:28 PM	70201
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	9/23/2022 10:04:31 AM	70216
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/23/2022 10:04:31 AM	70216
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	9/23/2022 10:04:31 AM	70216
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/23/2022 10:04:31 AM	70216
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/23/2022 10:04:31 AM	70216
Diethyl phthalate	ND	6.0	10		µg/L	1	9/23/2022 10:04:31 AM	70216
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/23/2022 10:04:31 AM	70216
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	9/23/2022 10:04:31 AM	70216
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/23/2022 10:04:31 AM	70216
2-Methylphenol	ND	5.0	10		µg/L	1	9/23/2022 10:04:31 AM	70216
3+4-Methylphenol	ND	5.1	10		µg/L	1	9/23/2022 10:04:31 AM	70216
Phenol	ND	18	20		µg/L	1	9/23/2022 10:04:31 AM	70216
Pyridine	ND	14	40		µg/L	1	9/23/2022 10:04:31 AM	70216
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/23/2022 10:04:31 AM	70216
Surr: 2-Fluorophenol	37.3	0	15-84.5		%Rec	1	9/23/2022 10:04:31 AM	70216
Surr: Phenol-d5	29.8	0	15-67		%Rec	1	9/23/2022 10:04:31 AM	70216
Surr: 2,4,6-Tribromophenol	47.2	0	15-108		%Rec	1	9/23/2022 10:04:31 AM	70216
Surr: Nitrobenzene-d5	50.9	0	16.8-112		%Rec	1	9/23/2022 10:04:31 AM	70216
Surr: 2-Fluorobiphenyl	47.8	0	15-101		%Rec	1	9/23/2022 10:04:31 AM	70216
Surr: 4-Terphenyl-d14	70.9	0	34.4-134		%Rec	1	9/23/2022 10:04:31 AM	70216
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	12	0.11	1.0		µg/L	1	9/21/2022 1:48:00 PM	70216
Naphthalene	ND	0.20	0.30		µg/L	1	9/21/2022 1:48:00 PM	70216
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	9/21/2022 1:48:00 PM	70216
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	9/21/2022 1:48:00 PM	70216
Acenaphthene	ND	0.14	0.30		µg/L	1	9/21/2022 1:48:00 PM	70216
Fluorene	ND	0.095	0.30		µg/L	1	9/21/2022 1:48:00 PM	70216
Phenanthrene	ND	0.16	0.30		µg/L	1	9/21/2022 1:48:00 PM	70216
Anthracene	ND	0.14	0.30		µg/L	1	9/21/2022 1:48:00 PM	70216
Fluoranthene	ND	0.14	0.30		µg/L	1	9/21/2022 1:48:00 PM	70216
Pyrene	ND	0.32	1.0		µg/L	1	9/21/2022 1:48:00 PM	70216
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/21/2022 1:48:00 PM	70216
Chrysene	ND	0.25	0.30		µg/L	1	9/21/2022 1:48:00 PM	70216
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/21/2022 1:48:00 PM	70216
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/21/2022 1:48:00 PM	70216

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-30
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 10:30:00 AM
Lab ID: 2209730-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	47.2	0	31.6-100		%Rec	1	9/21/2022 1:48:00 PM	70216
Surr: 2-Fluorobiphenyl	45.4	0	26.7-90.1		%Rec	1	9/21/2022 1:48:00 PM	70216
Surr: 4-Terphenyl-d14	58.9	0	72.3-147	S	%Rec	1	9/21/2022 1:48:00 PM	70216

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-30
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 10:30:00 AM
Lab ID: 2209730-005D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.16	0.0016	0.0030		mg/L	1	9/19/2022 11:53:18 AM	70240
Beryllium	ND	0.00088	0.0020		mg/L	1	9/19/2022 11:53:18 AM	70240
Cadmium	ND	0.0018	0.0020		mg/L	1	9/19/2022 11:53:18 AM	70240
Chromium	ND	0.0020	0.0060		mg/L	1	9/19/2022 11:53:18 AM	70240
Cobalt	0.0092	0.0035	0.0060		mg/L	1	9/19/2022 11:53:18 AM	70240
Nickel	0.014	0.0053	0.010		mg/L	1	9/19/2022 11:53:18 AM	70240
Silver	ND	0.0018	0.0050		mg/L	1	9/19/2022 11:53:18 AM	70240
Vanadium	0.021	0.0035	0.050	J	mg/L	1	9/19/2022 11:53:18 AM	70240
Zinc	ND	0.0039	0.010		mg/L	1	9/19/2022 11:53:18 AM	70240
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/19/2022 3:14:57 PM	70240
Arsenic	0.0012	0.00013	0.0010		mg/L	1	9/19/2022 3:14:57 PM	70240
Lead	0.0036	0.000061	0.00050		mg/L	1	9/19/2022 3:14:57 PM	70240
Selenium	0.00053	0.00037	0.0010	J	mg/L	1	9/19/2022 3:14:57 PM	70240
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/20/2022 4:10:31 PM	70279

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-30
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 10:30:00 AM
Lab ID: 2209730-005E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.036	0.0011	0.0020		mg/L	1	9/27/2022 3:14:29 PM	B91347
Beryllium	ND	0.00088	0.0020		mg/L	1	9/27/2022 3:14:29 PM	B91347
Cadmium	ND	0.00098	0.0020		mg/L	1	9/27/2022 3:14:29 PM	B91347
Chromium	ND	0.0020	0.0060		mg/L	1	9/27/2022 3:14:29 PM	B91347
Cobalt	ND	0.0024	0.0060		mg/L	1	9/27/2022 3:14:29 PM	B91347
Nickel	0.018	0.0033	0.010		mg/L	1	9/27/2022 3:14:29 PM	B91347
Silver	0.0022	0.0013	0.0050	J	mg/L	1	9/28/2022 1:21:53 PM	A91392
Vanadium	0.0046	0.0017	0.050	J	mg/L	1	9/27/2022 3:14:29 PM	B91347
Zinc	0.0090	0.0032	0.010	J	mg/L	1	9/27/2022 3:14:29 PM	B91347
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/15/2022 5:31:45 PM	C91078
Arsenic	0.00060	0.00012	0.0010	J	mg/L	1	9/15/2022 5:31:45 PM	C91078
Lead	0.000098	0.000057	0.00050	J	mg/L	1	9/15/2022 5:31:45 PM	C91078
Selenium	ND	0.00034	0.0010		mg/L	1	9/15/2022 5:31:45 PM	C91078
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/20/2022 4:12:41 PM	70279

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OPIS-1
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 10:50:00 AM
Lab ID: 2209730-006A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.34	0.045	0.25		mg/L	5	9/16/2022 1:34:00 PM	A91113
Surr: BFB	114	0	70-130		%Rec	5	9/16/2022 1:34:00 PM	A91113
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	24	1.1	5.0		µg/L	5	9/17/2022 1:17:41 AM	R91115
Toluene	ND	1.0	5.0		µg/L	5	9/17/2022 1:17:41 AM	R91115
Ethylbenzene	4.6	1.1	5.0	J	µg/L	5	9/17/2022 1:17:41 AM	R91115
Methyl tert-butyl ether (MTBE)	300	2.0	5.0		µg/L	5	9/17/2022 1:17:41 AM	R91115
1,2,4-Trimethylbenzene	ND	0.61	5.0		µg/L	5	9/17/2022 1:17:41 AM	R91115
1,3,5-Trimethylbenzene	ND	0.91	5.0		µg/L	5	9/17/2022 1:17:41 AM	R91115
1,2-Dichloroethane (EDC)	ND	1.3	5.0		µg/L	5	9/17/2022 1:17:41 AM	R91115
Acetone	ND	13	50		µg/L	5	9/17/2022 1:17:41 AM	R91115
Bromomethane	ND	4.3	15		µg/L	5	9/17/2022 1:17:41 AM	R91115
2-Butanone	ND	10	50		µg/L	5	9/17/2022 1:17:41 AM	R91115
Carbon disulfide	ND	3.0	50		µg/L	5	9/17/2022 1:17:41 AM	R91115
Chlorobenzene	ND	0.78	5.0		µg/L	5	9/17/2022 1:17:41 AM	R91115
Chloroform	ND	0.67	5.0		µg/L	5	9/17/2022 1:17:41 AM	R91115
Chloromethane	ND	2.1	15		µg/L	5	9/17/2022 1:17:41 AM	R91115
cis-1,2-DCE	ND	1.9	5.0		µg/L	5	9/17/2022 1:17:41 AM	R91115
1,1-Dichloroethane	ND	1.4	5.0		µg/L	5	9/17/2022 1:17:41 AM	R91115
1,1-Dichloroethene	ND	1.0	5.0		µg/L	5	9/17/2022 1:17:41 AM	R91115
Isopropylbenzene	ND	0.91	5.0		µg/L	5	9/17/2022 1:17:41 AM	R91115
4-Isopropyltoluene	ND	1.0	5.0		µg/L	5	9/17/2022 1:17:41 AM	R91115
Methylene Chloride	ND	2.5	15		µg/L	5	9/17/2022 1:17:41 AM	R91115
n-Butylbenzene	ND	1.3	15		µg/L	5	9/17/2022 1:17:41 AM	R91115
n-Propylbenzene	ND	0.91	5.0		µg/L	5	9/17/2022 1:17:41 AM	R91115
sec-Butylbenzene	ND	0.72	5.0		µg/L	5	9/17/2022 1:17:41 AM	R91115
Styrene	ND	0.68	5.0		µg/L	5	9/17/2022 1:17:41 AM	R91115
Tetrachloroethene (PCE)	ND	1.8	5.0		µg/L	5	9/17/2022 1:17:41 AM	R91115
1,1,1-Trichloroethane	ND	1.5	5.0		µg/L	5	9/17/2022 1:17:41 AM	R91115
Trichloroethene (TCE)	ND	1.0	5.0		µg/L	5	9/17/2022 1:17:41 AM	R91115
Vinyl chloride	ND	1.6	5.0		µg/L	5	9/17/2022 1:17:41 AM	R91115
Xylenes, Total	ND	1.9	7.5		µg/L	5	9/17/2022 1:17:41 AM	R91115
Surr: 1,2-Dichloroethane-d4	104	0	70-130		%Rec	5	9/17/2022 1:17:41 AM	R91115
Surr: 4-Bromofluorobenzene	100	0	70-130		%Rec	5	9/17/2022 1:17:41 AM	R91115
Surr: Dibromofluoromethane	116	0	70-130		%Rec	5	9/17/2022 1:17:41 AM	R91115
Surr: Toluene-d8	105	0	70-130		%Rec	5	9/17/2022 1:17:41 AM	R91115

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OPIS-1
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 10:50:00 AM
Lab ID: 2209730-006B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	9/19/2022 11:25:10 PM	70247

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OPIS-1
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 10:50:00 AM
Lab ID: 2209730-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	7.3	0.080	0.32		mg/L	5	9/23/2022 2:57:16 PM	70201
Motor Oil Range Organics (MRO)	1.0	0.26	0.40		mg/L	5	9/23/2022 2:57:16 PM	70201
Surr: DNOP	98.8	0	42.2-138		%Rec	5	9/23/2022 2:57:16 PM	70201
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	180	200	D	µg/L	10	9/23/2022 10:45:51 AM	70216
Bis(2-ethylhexyl)phthalate	ND	84	100	D	µg/L	10	9/23/2022 10:45:51 AM	70216
Di-n-butyl phthalate	ND	77	100	D	µg/L	10	9/23/2022 10:45:51 AM	70216
Di-n-octyl phthalate	ND	120	200	D	µg/L	10	9/23/2022 10:45:51 AM	70216
1,4-Dichlorobenzene	ND	24	50	D	µg/L	10	9/23/2022 10:45:51 AM	70216
Diethyl phthalate	ND	60	100	D	µg/L	10	9/23/2022 10:45:51 AM	70216
Dimethyl phthalate	ND	60	100	D	µg/L	10	9/23/2022 10:45:51 AM	70216
2,4-Dimethylphenol	ND	58	100	D	µg/L	10	9/23/2022 10:45:51 AM	70216
2,4-Dinitrophenol	ND	160	200	D	µg/L	10	9/23/2022 10:45:51 AM	70216
2-Methylphenol	ND	50	100	D	µg/L	10	9/23/2022 10:45:51 AM	70216
3+4-Methylphenol	ND	51	100	D	µg/L	10	9/23/2022 10:45:51 AM	70216
Phenol	ND	180	200	D	µg/L	10	9/23/2022 10:45:51 AM	70216
Pyridine	ND	140	400	D	µg/L	10	9/23/2022 10:45:51 AM	70216
2,4,6-Trichlorophenol	ND	59	100	D	µg/L	10	9/23/2022 10:45:51 AM	70216
Surr: 2-Fluorophenol	0	0	15-84.5	SD	%Rec	10	9/23/2022 10:45:51 AM	70216
Surr: Phenol-d5	0	0	15-67	SD	%Rec	10	9/23/2022 10:45:51 AM	70216
Surr: 2,4,6-Tribromophenol	0	0	15-108	SD	%Rec	10	9/23/2022 10:45:51 AM	70216
Surr: Nitrobenzene-d5	0	0	16.8-112	SD	%Rec	10	9/23/2022 10:45:51 AM	70216
Surr: 2-Fluorobiphenyl	0	0	15-101	SD	%Rec	10	9/23/2022 10:45:51 AM	70216
Surr: 4-Terphenyl-d14	0	0	34.4-134	SD	%Rec	10	9/23/2022 10:45:51 AM	70216
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	ND	1.1	10	D	µg/L	10	9/21/2022 2:33:00 PM	70216
Naphthalene	ND	2.0	3.0	D	µg/L	10	9/21/2022 2:33:00 PM	70216
1-Methylnaphthalene	ND	1.5	3.0	D	µg/L	10	9/21/2022 2:33:00 PM	70216
2-Methylnaphthalene	ND	1.4	3.0	D	µg/L	10	9/21/2022 2:33:00 PM	70216
Acenaphthene	ND	1.4	3.0	D	µg/L	10	9/21/2022 2:33:00 PM	70216
Fluorene	ND	0.95	3.0	D	µg/L	10	9/21/2022 2:33:00 PM	70216
Phenanthrene	ND	1.6	3.0	D	µg/L	10	9/21/2022 2:33:00 PM	70216
Anthracene	ND	1.4	3.0	D	µg/L	10	9/21/2022 2:33:00 PM	70216
Fluoranthene	ND	1.4	3.0	D	µg/L	10	9/21/2022 2:33:00 PM	70216
Pyrene	ND	3.2	10	D	µg/L	10	9/21/2022 2:33:00 PM	70216
Benz(a)anthracene	ND	1.5	3.0	D	µg/L	10	9/21/2022 2:33:00 PM	70216
Chrysene	ND	2.5	3.0	D	µg/L	10	9/21/2022 2:33:00 PM	70216
Benzo(b)fluoranthene	ND	1.4	3.0	D	µg/L	10	9/21/2022 2:33:00 PM	70216
Indeno(1,2,3-cd)pyrene	ND	2.3	3.0	D	µg/L	10	9/21/2022 2:33:00 PM	70216

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OPIS-1
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 10:50:00 AM
Lab ID: 2209730-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	0	0	31.6-100	SD	%Rec	10	9/21/2022 2:33:00 PM	70216
Surr: 2-Fluorobiphenyl	0	0	26.7-90.1	SD	%Rec	10	9/21/2022 2:33:00 PM	70216
Surr: 4-Terphenyl-d14	0	0	72.3-147	SD	%Rec	10	9/21/2022 2:33:00 PM	70216

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OPIS-1
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 10:50:00 AM
Lab ID: 2209730-006D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.93	0.0016	0.0030		mg/L	1	9/19/2022 11:56:27 AM	70240
Beryllium	ND	0.00088	0.0020		mg/L	1	9/19/2022 11:56:27 AM	70240
Cadmium	ND	0.0018	0.0020		mg/L	1	9/19/2022 11:56:27 AM	70240
Chromium	0.0023	0.0020	0.0060	J	mg/L	1	9/19/2022 11:56:27 AM	70240
Cobalt	0.019	0.0035	0.0060		mg/L	1	9/19/2022 11:56:27 AM	70240
Nickel	0.17	0.0053	0.010	*	mg/L	1	9/19/2022 11:56:27 AM	70240
Silver	ND	0.0018	0.0050		mg/L	1	9/19/2022 11:56:27 AM	70240
Vanadium	0.041	0.0035	0.050	J	mg/L	1	9/19/2022 11:56:27 AM	70240
Zinc	0.0068	0.0039	0.010	J	mg/L	1	9/19/2022 11:56:27 AM	70240
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/19/2022 3:55:11 PM	70240
Arsenic	0.0050	0.00013	0.0010		mg/L	1	9/19/2022 3:55:11 PM	70240
Lead	0.0060	0.000061	0.00050		mg/L	1	9/19/2022 3:55:11 PM	70240
Selenium	0.0012	0.00037	0.0010		mg/L	1	9/19/2022 3:55:11 PM	70240
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/20/2022 4:19:05 PM	70279

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OPIS-1
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 10:50:00 AM
Lab ID: 2209730-006E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.82	0.0011	0.0020		mg/L	1	9/27/2022 3:18:33 PM	B91347
Beryllium	ND	0.00088	0.0020		mg/L	1	9/27/2022 3:18:33 PM	B91347
Cadmium	ND	0.00098	0.0020		mg/L	1	9/27/2022 3:18:33 PM	B91347
Chromium	ND	0.0020	0.0060		mg/L	1	9/27/2022 3:18:33 PM	B91347
Cobalt	0.0048	0.0024	0.0060	J	mg/L	1	9/27/2022 3:18:33 PM	B91347
Nickel	0.17	0.0033	0.010	*	mg/L	1	9/27/2022 3:18:33 PM	B91347
Silver	0.0025	0.0013	0.0050	J	mg/L	1	9/28/2022 1:24:00 PM	A91392
Vanadium	0.029	0.0017	0.050	J	mg/L	1	9/27/2022 3:18:33 PM	B91347
Zinc	0.023	0.0032	0.010		mg/L	1	9/27/2022 3:18:33 PM	B91347
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/15/2022 5:34:25 PM	C91078
Arsenic	0.0050	0.00012	0.0010		mg/L	1	9/15/2022 5:34:25 PM	C91078
Lead	0.0050	0.000057	0.00050		mg/L	1	9/15/2022 5:34:25 PM	C91078
Selenium	0.0012	0.00034	0.0010		mg/L	1	9/15/2022 5:34:25 PM	C91078
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/20/2022 4:21:13 PM	70279

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPI-2
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 11:20:00 AM
Lab ID: 2209730-007A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	4.1	0.090	0.50		mg/L	10	9/16/2022 1:54:00 PM	A91113
Surr: BFB	131	0	70-130	S	%Rec	10	9/16/2022 1:54:00 PM	A91113
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	1200	4.5	20		µg/L	20	9/17/2022 1:46:14 AM	R91115
Toluene	0.62	0.40	2.0	J	µg/L	2	9/17/2022 2:14:40 AM	R91115
Ethylbenzene	200	0.43	2.0		µg/L	2	9/17/2022 2:14:40 AM	R91115
Methyl tert-butyl ether (MTBE)	110	0.79	2.0		µg/L	2	9/17/2022 2:14:40 AM	R91115
1,2,4-Trimethylbenzene	2.2	0.24	2.0		µg/L	2	9/17/2022 2:14:40 AM	R91115
1,3,5-Trimethylbenzene	ND	0.36	2.0		µg/L	2	9/17/2022 2:14:40 AM	R91115
1,2-Dichloroethane (EDC)	ND	0.51	2.0		µg/L	2	9/17/2022 2:14:40 AM	R91115
Acetone	ND	5.0	20		µg/L	2	9/17/2022 2:14:40 AM	R91115
Bromomethane	ND	1.7	6.0		µg/L	2	9/17/2022 2:14:40 AM	R91115
2-Butanone	ND	4.1	20		µg/L	2	9/17/2022 2:14:40 AM	R91115
Carbon disulfide	ND	1.2	20		µg/L	2	9/17/2022 2:14:40 AM	R91115
Chlorobenzene	ND	0.31	2.0		µg/L	2	9/17/2022 2:14:40 AM	R91115
Chloroform	ND	0.27	2.0		µg/L	2	9/17/2022 2:14:40 AM	R91115
Chloromethane	ND	0.82	6.0		µg/L	2	9/17/2022 2:14:40 AM	R91115
cis-1,2-DCE	ND	0.78	2.0		µg/L	2	9/17/2022 2:14:40 AM	R91115
1,1-Dichloroethane	ND	0.55	2.0		µg/L	2	9/17/2022 2:14:40 AM	R91115
1,1-Dichloroethene	ND	0.40	2.0		µg/L	2	9/17/2022 2:14:40 AM	R91115
Isopropylbenzene	15	0.37	2.0		µg/L	2	9/17/2022 2:14:40 AM	R91115
4-Isopropyltoluene	ND	0.40	2.0		µg/L	2	9/17/2022 2:14:40 AM	R91115
Methylene Chloride	ND	1.0	6.0		µg/L	2	9/17/2022 2:14:40 AM	R91115
n-Butylbenzene	1.2	0.51	6.0	J	µg/L	2	9/17/2022 2:14:40 AM	R91115
n-Propylbenzene	14	0.36	2.0		µg/L	2	9/17/2022 2:14:40 AM	R91115
sec-Butylbenzene	2.3	0.29	2.0		µg/L	2	9/17/2022 2:14:40 AM	R91115
Styrene	ND	0.27	2.0		µg/L	2	9/17/2022 2:14:40 AM	R91115
Tetrachloroethene (PCE)	ND	0.71	2.0		µg/L	2	9/17/2022 2:14:40 AM	R91115
1,1,1-Trichloroethane	ND	0.60	2.0		µg/L	2	9/17/2022 2:14:40 AM	R91115
Trichloroethene (TCE)	ND	0.41	2.0		µg/L	2	9/17/2022 2:14:40 AM	R91115
Vinyl chloride	ND	0.64	2.0		µg/L	2	9/17/2022 2:14:40 AM	R91115
Xylenes, Total	26	0.74	3.0		µg/L	2	9/17/2022 2:14:40 AM	R91115
Surr: 1,2-Dichloroethane-d4	90.7	0	70-130		%Rec	2	9/17/2022 2:14:40 AM	R91115
Surr: 4-Bromofluorobenzene	92.9	0	70-130		%Rec	2	9/17/2022 2:14:40 AM	R91115
Surr: Dibromofluoromethane	99.5	0	70-130		%Rec	2	9/17/2022 2:14:40 AM	R91115
Surr: Toluene-d8	105	0	70-130		%Rec	2	9/17/2022 2:14:40 AM	R91115

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Estimated value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPI-2
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 11:20:00 AM
Lab ID: 2209730-007B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	9/19/2022 11:55:46 PM	70247

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPI-2
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 11:20:00 AM
Lab ID: 2209730-007C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	2.7	0.016	0.064		mg/L	1	9/23/2022 3:44:49 PM	70201
Motor Oil Range Organics (MRO)	0.14	0.052	0.080		mg/L	1	9/23/2022 3:44:49 PM	70201
Surr: DNOP	87.9	0	42.2-138		%Rec	1	9/23/2022 3:44:49 PM	70201
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	9/23/2022 11:27:16 AM	70216
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/23/2022 11:27:16 AM	70216
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	9/23/2022 11:27:16 AM	70216
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/23/2022 11:27:16 AM	70216
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/23/2022 11:27:16 AM	70216
Diethyl phthalate	ND	6.0	10		µg/L	1	9/23/2022 11:27:16 AM	70216
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/23/2022 11:27:16 AM	70216
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	9/23/2022 11:27:16 AM	70216
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/23/2022 11:27:16 AM	70216
1-Methylnaphthalene	44	4.3	5.0		µg/L	1	9/23/2022 11:27:16 AM	70216
2-Methylphenol	ND	5.0	10		µg/L	1	9/23/2022 11:27:16 AM	70216
3+4-Methylphenol	ND	5.1	10		µg/L	1	9/23/2022 11:27:16 AM	70216
Naphthalene	25	3.2	5.0		µg/L	1	9/23/2022 11:27:16 AM	70216
Phenol	27	18	20		µg/L	1	9/23/2022 11:27:16 AM	70216
Pyridine	ND	14	40		µg/L	1	9/23/2022 11:27:16 AM	70216
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/23/2022 11:27:16 AM	70216
Surr: 2-Fluorophenol	41.5	0	15-84.5		%Rec	1	9/23/2022 11:27:16 AM	70216
Surr: Phenol-d5	33.0	0	15-67		%Rec	1	9/23/2022 11:27:16 AM	70216
Surr: 2,4,6-Tribromophenol	58.2	0	15-108		%Rec	1	9/23/2022 11:27:16 AM	70216
Surr: Nitrobenzene-d5	58.8	0	16.8-112		%Rec	1	9/23/2022 11:27:16 AM	70216
Surr: 2-Fluorobiphenyl	55.4	0	15-101		%Rec	1	9/23/2022 11:27:16 AM	70216
Surr: 4-Terphenyl-d14	72.3	0	34.4-134		%Rec	1	9/23/2022 11:27:16 AM	70216
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	1.6	0.11	1.0		µg/L	1	9/21/2022 3:17:00 PM	70216
2-Methylnaphthalene	16	0.14	0.30		µg/L	1	9/21/2022 3:17:00 PM	70216
Acenaphthene	2.7	0.14	0.30		µg/L	1	9/21/2022 3:17:00 PM	70216
Fluorene	3.2	0.095	0.30		µg/L	1	9/21/2022 3:17:00 PM	70216
Phenanthrene	0.92	0.16	0.30		µg/L	1	9/21/2022 3:17:00 PM	70216
Anthracene	0.30	0.14	0.30		µg/L	1	9/21/2022 3:17:00 PM	70216
Fluoranthene	ND	0.14	0.30		µg/L	1	9/21/2022 3:17:00 PM	70216
Pyrene	ND	0.32	1.0		µg/L	1	9/21/2022 3:17:00 PM	70216
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/21/2022 3:17:00 PM	70216
Chrysene	ND	0.25	0.30		µg/L	1	9/21/2022 3:17:00 PM	70216
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/21/2022 3:17:00 PM	70216
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/21/2022 3:17:00 PM	70216

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Estimated value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPI-2
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 11:20:00 AM
Lab ID: 2209730-007C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	52.5	0	31.6-100		%Rec	1	9/21/2022 3:17:00 PM	70216
Surr: 2-Fluorobiphenyl	45.0	0	26.7-90.1		%Rec	1	9/21/2022 3:17:00 PM	70216
Surr: 4-Terphenyl-d14	50.8	0	72.3-147	S	%Rec	1	9/21/2022 3:17:00 PM	70216

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPI-2
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 11:20:00 AM
Lab ID: 2209730-007D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	5.2	0.016	0.030	*	mg/L	10	9/19/2022 3:20:30 PM	70240
Beryllium	ND	0.00088	0.0020		mg/L	1	9/19/2022 11:59:42 AM	70240
Cadmium	ND	0.0018	0.0020		mg/L	1	9/19/2022 11:59:42 AM	70240
Chromium	ND	0.0020	0.0060		mg/L	1	9/19/2022 11:59:42 AM	70240
Cobalt	0.011	0.0035	0.0060		mg/L	1	9/19/2022 11:59:42 AM	70240
Nickel	0.084	0.0053	0.010		mg/L	1	9/19/2022 11:59:42 AM	70240
Silver	ND	0.0018	0.0050		mg/L	1	9/19/2022 11:59:42 AM	70240
Vanadium	0.0092	0.0035	0.050	J	mg/L	1	9/19/2022 11:59:42 AM	70240
Zinc	ND	0.0039	0.010		mg/L	1	9/19/2022 11:59:42 AM	70240
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/19/2022 3:19:50 PM	70240
Arsenic	0.0031	0.00013	0.0010		mg/L	1	9/19/2022 3:19:50 PM	70240
Lead	0.0026	0.000061	0.00050		mg/L	1	9/19/2022 3:19:50 PM	70240
Selenium	0.00063	0.00037	0.0010	J	mg/L	1	9/19/2022 3:19:50 PM	70240
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/20/2022 4:23:22 PM	70279

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPI-2
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 11:20:00 AM
Lab ID: 2209730-007E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	4.9	0.0056	0.010	*	mg/L	5	9/27/2022 3:24:43 PM	B91347
Beryllium	ND	0.00088	0.0020		mg/L	1	9/27/2022 3:22:44 PM	B91347
Cadmium	ND	0.00098	0.0020		mg/L	1	9/27/2022 3:22:44 PM	B91347
Chromium	ND	0.0020	0.0060		mg/L	1	9/27/2022 3:22:44 PM	B91347
Cobalt	ND	0.0024	0.0060		mg/L	1	9/27/2022 3:22:44 PM	B91347
Nickel	0.068	0.0033	0.010		mg/L	1	9/27/2022 3:22:44 PM	B91347
Silver	0.0026	0.0013	0.0050	J	mg/L	1	9/28/2022 1:26:01 PM	A91392
Vanadium	0.0042	0.0017	0.050	J	mg/L	1	9/27/2022 3:22:44 PM	B91347
Zinc	0.0096	0.0032	0.010	J	mg/L	1	9/27/2022 3:22:44 PM	B91347
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/15/2022 5:37:06 PM	C91078
Arsenic	0.0018	0.00012	0.0010		mg/L	1	9/15/2022 5:37:06 PM	C91078
Lead	0.00032	0.000057	0.00050	J	mg/L	1	9/15/2022 5:37:06 PM	C91078
Selenium	0.00053	0.00034	0.0010	J	mg/L	1	9/15/2022 5:37:06 PM	C91078
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/20/2022 4:25:30 PM	70279

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPI-3
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 11:45:00 AM
Lab ID: 2209730-008A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.47	0.0090	0.050		mg/L	1	9/16/2022 2:14:00 PM	A91113
Surr: BFB	201	0	70-130	S	%Rec	1	9/16/2022 2:14:00 PM	A91113
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	90	0.23	1.0		µg/L	1	9/17/2022 2:43:06 AM	R91115
Toluene	ND	0.20	1.0		µg/L	1	9/17/2022 2:43:06 AM	R91115
Ethylbenzene	29	0.21	1.0		µg/L	1	9/17/2022 2:43:06 AM	R91115
Methyl tert-butyl ether (MTBE)	62	0.39	1.0		µg/L	1	9/17/2022 2:43:06 AM	R91115
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/17/2022 2:43:06 AM	R91115
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/17/2022 2:43:06 AM	R91115
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/17/2022 2:43:06 AM	R91115
Acetone	ND	2.5	10		µg/L	1	9/17/2022 2:43:06 AM	R91115
Bromomethane	ND	0.85	3.0		µg/L	1	9/17/2022 2:43:06 AM	R91115
2-Butanone	ND	2.0	10		µg/L	1	9/17/2022 2:43:06 AM	R91115
Carbon disulfide	ND	0.59	10		µg/L	1	9/17/2022 2:43:06 AM	R91115
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/17/2022 2:43:06 AM	R91115
Chloroform	ND	0.13	1.0		µg/L	1	9/17/2022 2:43:06 AM	R91115
Chloromethane	ND	0.41	3.0		µg/L	1	9/17/2022 2:43:06 AM	R91115
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/17/2022 2:43:06 AM	R91115
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/17/2022 2:43:06 AM	R91115
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/17/2022 2:43:06 AM	R91115
Isopropylbenzene	3.3	0.18	1.0		µg/L	1	9/17/2022 2:43:06 AM	R91115
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/17/2022 2:43:06 AM	R91115
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/17/2022 2:43:06 AM	R91115
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/17/2022 2:43:06 AM	R91115
n-Propylbenzene	1.8	0.18	1.0		µg/L	1	9/17/2022 2:43:06 AM	R91115
sec-Butylbenzene	0.73	0.14	1.0	J	µg/L	1	9/17/2022 2:43:06 AM	R91115
Styrene	ND	0.14	1.0		µg/L	1	9/17/2022 2:43:06 AM	R91115
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/17/2022 2:43:06 AM	R91115
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/17/2022 2:43:06 AM	R91115
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/17/2022 2:43:06 AM	R91115
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/17/2022 2:43:06 AM	R91115
Xylenes, Total	1.2	0.37	1.5	J	µg/L	1	9/17/2022 2:43:06 AM	R91115
Surr: 1,2-Dichloroethane-d4	97.2	0	70-130		%Rec	1	9/17/2022 2:43:06 AM	R91115
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	9/17/2022 2:43:06 AM	R91115
Surr: Dibromofluoromethane	108	0	70-130		%Rec	1	9/17/2022 2:43:06 AM	R91115
Surr: Toluene-d8	106	0	70-130		%Rec	1	9/17/2022 2:43:06 AM	R91115

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPI-3
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 11:45:00 AM
Lab ID: 2209730-008B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	9/20/2022 12:26:14 AM	70247

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPI-3
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 11:45:00 AM
Lab ID: 2209730-008C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.86	0.016	0.064		mg/L	1	9/23/2022 4:08:40 PM	70201
Motor Oil Range Organics (MRO)	0.086	0.052	0.080		mg/L	1	9/23/2022 4:08:40 PM	70201
Surr: DNOP	95.7	0	42.2-138		%Rec	1	9/23/2022 4:08:40 PM	70201
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	9/23/2022 12:08:50 PM	70216
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/23/2022 12:08:50 PM	70216
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	9/23/2022 12:08:50 PM	70216
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/23/2022 12:08:50 PM	70216
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/23/2022 12:08:50 PM	70216
Diethyl phthalate	ND	6.0	10		µg/L	1	9/23/2022 12:08:50 PM	70216
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/23/2022 12:08:50 PM	70216
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	9/23/2022 12:08:50 PM	70216
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/23/2022 12:08:50 PM	70216
2-Methylphenol	ND	5.0	10		µg/L	1	9/23/2022 12:08:50 PM	70216
3+4-Methylphenol	ND	5.1	10		µg/L	1	9/23/2022 12:08:50 PM	70216
Phenol	ND	18	20		µg/L	1	9/23/2022 12:08:50 PM	70216
Pyridine	ND	14	40		µg/L	1	9/23/2022 12:08:50 PM	70216
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/23/2022 12:08:50 PM	70216
Surr: 2-Fluorophenol	50.3	0	15-84.5		%Rec	1	9/23/2022 12:08:50 PM	70216
Surr: Phenol-d5	40.0	0	15-67		%Rec	1	9/23/2022 12:08:50 PM	70216
Surr: 2,4,6-Tribromophenol	61.8	0	15-108		%Rec	1	9/23/2022 12:08:50 PM	70216
Surr: Nitrobenzene-d5	66.9	0	16.8-112		%Rec	1	9/23/2022 12:08:50 PM	70216
Surr: 2-Fluorobiphenyl	63.3	0	15-101		%Rec	1	9/23/2022 12:08:50 PM	70216
Surr: 4-Terphenyl-d14	78.6	0	34.4-134		%Rec	1	9/23/2022 12:08:50 PM	70216
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	0.74	0.11	1.0	J	µg/L	1	9/21/2022 4:01:00 PM	70216
Naphthalene	1.3	0.20	0.30		µg/L	1	9/21/2022 4:01:00 PM	70216
1-Methylnaphthalene	1.9	0.15	0.30		µg/L	1	9/21/2022 4:01:00 PM	70216
2-Methylnaphthalene	0.70	0.14	0.30		µg/L	1	9/21/2022 4:01:00 PM	70216
Acenaphthene	0.62	0.14	0.30		µg/L	1	9/21/2022 4:01:00 PM	70216
Fluorene	0.24	0.095	0.30	J	µg/L	1	9/21/2022 4:01:00 PM	70216
Phenanthrene	ND	0.16	0.30		µg/L	1	9/21/2022 4:01:00 PM	70216
Anthracene	0.18	0.14	0.30	J	µg/L	1	9/21/2022 4:01:00 PM	70216
Fluoranthene	ND	0.14	0.30		µg/L	1	9/21/2022 4:01:00 PM	70216
Pyrene	ND	0.32	1.0		µg/L	1	9/21/2022 4:01:00 PM	70216
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/21/2022 4:01:00 PM	70216
Chrysene	ND	0.25	0.30		µg/L	1	9/21/2022 4:01:00 PM	70216
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/21/2022 4:01:00 PM	70216
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/21/2022 4:01:00 PM	70216

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPI-3
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 11:45:00 AM
Lab ID: 2209730-008C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	60.8	0	31.6-100		%Rec	1	9/21/2022 4:01:00 PM	70216
Surr: 2-Fluorobiphenyl	52.2	0	26.7-90.1		%Rec	1	9/21/2022 4:01:00 PM	70216
Surr: 4-Terphenyl-d14	54.9	0	72.3-147	S	%Rec	1	9/21/2022 4:01:00 PM	70216

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPI-3
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 11:45:00 AM
Lab ID: 2209730-008D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	2.3	0.0079	0.015	*	mg/L	5	9/19/2022 12:10:39 PM	70240
Beryllium	ND	0.00088	0.0020		mg/L	1	9/19/2022 12:02:49 PM	70240
Cadmium	ND	0.0018	0.0020		mg/L	1	9/19/2022 12:02:49 PM	70240
Chromium	ND	0.0020	0.0060		mg/L	1	9/19/2022 12:02:49 PM	70240
Cobalt	0.013	0.0035	0.0060		mg/L	1	9/19/2022 12:02:49 PM	70240
Nickel	0.022	0.0053	0.010		mg/L	1	9/19/2022 12:02:49 PM	70240
Silver	ND	0.0018	0.0050		mg/L	1	9/19/2022 12:02:49 PM	70240
Vanadium	0.0041	0.0035	0.050	J	mg/L	1	9/19/2022 12:02:49 PM	70240
Zinc	ND	0.0039	0.010		mg/L	1	9/19/2022 12:02:49 PM	70240
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/19/2022 3:22:17 PM	70240
Arsenic	0.0041	0.00013	0.0010		mg/L	1	9/19/2022 3:22:17 PM	70240
Lead	0.00075	0.000061	0.00050		mg/L	1	9/19/2022 3:22:17 PM	70240
Selenium	0.00054	0.00037	0.0010	J	mg/L	1	9/19/2022 3:22:17 PM	70240
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/20/2022 4:27:39 PM	70279

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPI-3
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 11:45:00 AM
Lab ID: 2209730-008E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	2.3	0.0056	0.010	*	mg/L	5	9/27/2022 3:28:47 PM	B91347
Beryllium	ND	0.00088	0.0020		mg/L	1	9/27/2022 3:26:40 PM	B91347
Cadmium	ND	0.00098	0.0020		mg/L	1	9/27/2022 3:26:40 PM	B91347
Chromium	ND	0.0020	0.0060		mg/L	1	9/27/2022 3:26:40 PM	B91347
Cobalt	ND	0.0024	0.0060		mg/L	1	9/27/2022 3:26:40 PM	B91347
Nickel	0.022	0.0033	0.010		mg/L	1	9/27/2022 3:26:40 PM	B91347
Silver	0.0028	0.0013	0.0050	J	mg/L	1	9/28/2022 1:28:02 PM	A91392
Vanadium	0.0023	0.0017	0.050	J	mg/L	1	9/27/2022 3:26:40 PM	B91347
Zinc	0.012	0.0032	0.010		mg/L	1	9/27/2022 3:26:40 PM	B91347
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/15/2022 5:39:47 PM	C91078
Arsenic	0.0017	0.00012	0.0010		mg/L	1	9/15/2022 5:39:47 PM	C91078
Lead	ND	0.000057	0.00050		mg/L	1	9/15/2022 5:39:47 PM	C91078
Selenium	ND	0.00034	0.0010		mg/L	1	9/15/2022 5:39:47 PM	C91078
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/20/2022 4:29:48 PM	70279

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: KA-3
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 12:10:00 PM
Lab ID: 2209730-009A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.12	0.0090	0.050		mg/L	1	9/16/2022 2:33:00 PM	A91113
Surr: BFB	147	0	70-130	S	%Rec	1	9/16/2022 2:33:00 PM	A91113
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	9/17/2022 3:11:31 AM	R91115
Toluene	ND	0.20	1.0		µg/L	1	9/17/2022 3:11:31 AM	R91115
Ethylbenzene	0.31	0.21	1.0	J	µg/L	1	9/17/2022 3:11:31 AM	R91115
Methyl tert-butyl ether (MTBE)	68	0.39	1.0		µg/L	1	9/17/2022 3:11:31 AM	R91115
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/17/2022 3:11:31 AM	R91115
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/17/2022 3:11:31 AM	R91115
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/17/2022 3:11:31 AM	R91115
Acetone	ND	2.5	10		µg/L	1	9/17/2022 3:11:31 AM	R91115
Bromomethane	ND	0.85	3.0		µg/L	1	9/17/2022 3:11:31 AM	R91115
2-Butanone	ND	2.0	10		µg/L	1	9/17/2022 3:11:31 AM	R91115
Carbon disulfide	ND	0.59	10		µg/L	1	9/17/2022 3:11:31 AM	R91115
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/17/2022 3:11:31 AM	R91115
Chloroform	ND	0.13	1.0		µg/L	1	9/17/2022 3:11:31 AM	R91115
Chloromethane	ND	0.41	3.0		µg/L	1	9/17/2022 3:11:31 AM	R91115
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/17/2022 3:11:31 AM	R91115
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/17/2022 3:11:31 AM	R91115
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/17/2022 3:11:31 AM	R91115
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/17/2022 3:11:31 AM	R91115
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/17/2022 3:11:31 AM	R91115
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/17/2022 3:11:31 AM	R91115
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/17/2022 3:11:31 AM	R91115
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/17/2022 3:11:31 AM	R91115
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/17/2022 3:11:31 AM	R91115
Styrene	ND	0.14	1.0		µg/L	1	9/17/2022 3:11:31 AM	R91115
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/17/2022 3:11:31 AM	R91115
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/17/2022 3:11:31 AM	R91115
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/17/2022 3:11:31 AM	R91115
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/17/2022 3:11:31 AM	R91115
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/17/2022 3:11:31 AM	R91115
Surr: 1,2-Dichloroethane-d4	103	0	70-130		%Rec	1	9/17/2022 3:11:31 AM	R91115
Surr: 4-Bromofluorobenzene	105	0	70-130		%Rec	1	9/17/2022 3:11:31 AM	R91115
Surr: Dibromofluoromethane	116	0	70-130		%Rec	1	9/17/2022 3:11:31 AM	R91115
Surr: Toluene-d8	104	0	70-130		%Rec	1	9/17/2022 3:11:31 AM	R91115

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: KA-3
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 12:10:00 PM
Lab ID: 2209730-009B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	9/20/2022 12:56:47 AM	70247

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: KA-3
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 12:10:00 PM
Lab ID: 2209730-009C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.61	0.016	0.064		mg/L	1	9/23/2022 4:32:23 PM	70201
Motor Oil Range Organics (MRO)	0.11	0.052	0.080		mg/L	1	9/23/2022 4:32:23 PM	70201
Surr: DNOP	95.0	0	42.2-138		%Rec	1	9/23/2022 4:32:23 PM	70201
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	9/23/2022 12:50:16 PM	70216
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/23/2022 12:50:16 PM	70216
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	9/23/2022 12:50:16 PM	70216
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/23/2022 12:50:16 PM	70216
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/23/2022 12:50:16 PM	70216
Diethyl phthalate	ND	6.0	10		µg/L	1	9/23/2022 12:50:16 PM	70216
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/23/2022 12:50:16 PM	70216
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	9/23/2022 12:50:16 PM	70216
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/23/2022 12:50:16 PM	70216
2-Methylphenol	ND	5.0	10		µg/L	1	9/23/2022 12:50:16 PM	70216
3+4-Methylphenol	ND	5.1	10		µg/L	1	9/23/2022 12:50:16 PM	70216
Phenol	ND	18	20		µg/L	1	9/23/2022 12:50:16 PM	70216
Pyridine	ND	14	40		µg/L	1	9/23/2022 12:50:16 PM	70216
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/23/2022 12:50:16 PM	70216
Surr: 2-Fluorophenol	37.7	0	15-84.5		%Rec	1	9/23/2022 12:50:16 PM	70216
Surr: Phenol-d5	30.2	0	15-67		%Rec	1	9/23/2022 12:50:16 PM	70216
Surr: 2,4,6-Tribromophenol	53.5	0	15-108		%Rec	1	9/23/2022 12:50:16 PM	70216
Surr: Nitrobenzene-d5	50.8	0	16.8-112		%Rec	1	9/23/2022 12:50:16 PM	70216
Surr: 2-Fluorobiphenyl	48.4	0	15-101		%Rec	1	9/23/2022 12:50:16 PM	70216
Surr: 4-Terphenyl-d14	64.0	0	34.4-134		%Rec	1	9/23/2022 12:50:16 PM	70216
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	0.48	0.11	1.0	J	µg/L	1	9/21/2022 4:45:00 PM	70216
Naphthalene	ND	0.20	0.30		µg/L	1	9/21/2022 4:45:00 PM	70216
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	9/21/2022 4:45:00 PM	70216
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	9/21/2022 4:45:00 PM	70216
Acenaphthene	ND	0.14	0.30		µg/L	1	9/21/2022 4:45:00 PM	70216
Fluorene	ND	0.095	0.30		µg/L	1	9/21/2022 4:45:00 PM	70216
Phenanthrene	ND	0.16	0.30		µg/L	1	9/21/2022 4:45:00 PM	70216
Anthracene	ND	0.14	0.30		µg/L	1	9/21/2022 4:45:00 PM	70216
Fluoranthene	ND	0.14	0.30		µg/L	1	9/21/2022 4:45:00 PM	70216
Pyrene	ND	0.32	1.0		µg/L	1	9/21/2022 4:45:00 PM	70216
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/21/2022 4:45:00 PM	70216
Chrysene	ND	0.25	0.30		µg/L	1	9/21/2022 4:45:00 PM	70216
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/21/2022 4:45:00 PM	70216
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/21/2022 4:45:00 PM	70216

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: KA-3
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 12:10:00 PM
Lab ID: 2209730-009C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	48.4	0	31.6-100		%Rec	1	9/21/2022 4:45:00 PM	70216
Surr: 2-Fluorobiphenyl	42.5	0	26.7-90.1		%Rec	1	9/21/2022 4:45:00 PM	70216
Surr: 4-Terphenyl-d14	48.3	0	72.3-147	S	%Rec	1	9/21/2022 4:45:00 PM	70216

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: KA-3
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 12:10:00 PM
Lab ID: 2209730-009D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.22	0.0016	0.0030		mg/L	1	9/19/2022 12:12:20 PM	70240
Beryllium	ND	0.00088	0.0020		mg/L	1	9/19/2022 12:12:20 PM	70240
Cadmium	ND	0.0018	0.0020		mg/L	1	9/19/2022 12:12:20 PM	70240
Chromium	ND	0.0020	0.0060		mg/L	1	9/19/2022 12:12:20 PM	70240
Cobalt	0.0085	0.0035	0.0060		mg/L	1	9/19/2022 12:12:20 PM	70240
Nickel	0.020	0.0053	0.010		mg/L	1	9/19/2022 12:12:20 PM	70240
Silver	ND	0.0018	0.0050		mg/L	1	9/19/2022 12:12:20 PM	70240
Vanadium	0.019	0.0035	0.050	J	mg/L	1	9/19/2022 12:12:20 PM	70240
Zinc	0.0089	0.0039	0.010	J	mg/L	1	9/23/2022 11:03:48 AM	70240
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/19/2022 3:24:43 PM	70240
Arsenic	0.00071	0.00013	0.0010	J	mg/L	1	9/19/2022 3:24:43 PM	70240
Lead	0.00067	0.000061	0.00050		mg/L	1	9/19/2022 3:24:43 PM	70240
Selenium	0.00080	0.00037	0.0010	J	mg/L	1	9/19/2022 3:24:43 PM	70240
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/20/2022 4:31:56 PM	70279

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: KA-3
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 12:10:00 PM
Lab ID: 2209730-009E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.21	0.0011	0.0020		mg/L	1	9/27/2022 3:45:04 PM	B91347
Beryllium	ND	0.00088	0.0020		mg/L	1	9/27/2022 3:45:04 PM	B91347
Cadmium	ND	0.00098	0.0020		mg/L	1	9/27/2022 3:45:04 PM	B91347
Chromium	ND	0.0020	0.0060		mg/L	1	9/27/2022 3:45:04 PM	B91347
Cobalt	ND	0.0024	0.0060		mg/L	1	9/27/2022 3:45:04 PM	B91347
Nickel	0.022	0.0033	0.010		mg/L	1	9/27/2022 3:45:04 PM	B91347
Silver	ND	0.0013	0.0050		mg/L	1	9/28/2022 1:30:09 PM	A91392
Vanadium	0.015	0.0017	0.050	J	mg/L	1	9/27/2022 3:45:04 PM	B91347
Zinc	0.032	0.0032	0.010		mg/L	1	9/27/2022 3:45:04 PM	B91347
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/15/2022 5:42:28 PM	C91078
Arsenic	0.00067	0.00012	0.0010	J	mg/L	1	9/15/2022 5:42:28 PM	C91078
Lead	0.00021	0.000057	0.00050	J	mg/L	1	9/15/2022 5:42:28 PM	C91078
Selenium	0.0014	0.00034	0.0010		mg/L	1	9/15/2022 5:42:28 PM	C91078
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/20/2022 4:34:04 PM	70279

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 9-14-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022
Lab ID: 2209730-010A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.032	0.0090	0.050	J	mg/L	1	9/16/2022 2:53:00 PM	A91113
Surr: BFB	102	0	70-130		%Rec	1	9/16/2022 2:53:00 PM	A91113
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	9/17/2022 3:40:08 AM	R91115
Toluene	ND	0.20	1.0		µg/L	1	9/17/2022 3:40:08 AM	R91115
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/17/2022 3:40:08 AM	R91115
Methyl tert-butyl ether (MTBE)	33	0.39	1.0		µg/L	1	9/17/2022 3:40:08 AM	R91115
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/17/2022 3:40:08 AM	R91115
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/17/2022 3:40:08 AM	R91115
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/17/2022 3:40:08 AM	R91115
Acetone	ND	2.5	10		µg/L	1	9/17/2022 3:40:08 AM	R91115
Bromomethane	ND	0.85	3.0		µg/L	1	9/17/2022 3:40:08 AM	R91115
2-Butanone	ND	2.0	10		µg/L	1	9/17/2022 3:40:08 AM	R91115
Carbon disulfide	ND	0.59	10		µg/L	1	9/17/2022 3:40:08 AM	R91115
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/17/2022 3:40:08 AM	R91115
Chloroform	ND	0.13	1.0		µg/L	1	9/17/2022 3:40:08 AM	R91115
Chloromethane	ND	0.41	3.0		µg/L	1	9/17/2022 3:40:08 AM	R91115
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/17/2022 3:40:08 AM	R91115
1,1-Dichloroethane	1.6	0.27	1.0		µg/L	1	9/17/2022 3:40:08 AM	R91115
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/17/2022 3:40:08 AM	R91115
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/17/2022 3:40:08 AM	R91115
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/17/2022 3:40:08 AM	R91115
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/17/2022 3:40:08 AM	R91115
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/17/2022 3:40:08 AM	R91115
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/17/2022 3:40:08 AM	R91115
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/17/2022 3:40:08 AM	R91115
Styrene	ND	0.14	1.0		µg/L	1	9/17/2022 3:40:08 AM	R91115
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/17/2022 3:40:08 AM	R91115
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/17/2022 3:40:08 AM	R91115
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/17/2022 3:40:08 AM	R91115
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/17/2022 3:40:08 AM	R91115
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/17/2022 3:40:08 AM	R91115
Surr: 1,2-Dichloroethane-d4	107	0	70-130		%Rec	1	9/17/2022 3:40:08 AM	R91115
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	9/17/2022 3:40:08 AM	R91115
Surr: Dibromofluoromethane	115	0	70-130		%Rec	1	9/17/2022 3:40:08 AM	R91115
Surr: Toluene-d8	101	0	70-130		%Rec	1	9/17/2022 3:40:08 AM	R91115

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 9-14-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022
Lab ID: 2209730-010B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	9/20/2022 1:27:14 AM	70247

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 9-14-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022
Lab ID: 2209730-010C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.21	0.016	0.064		mg/L	1	9/23/2022 4:56:05 PM	70201
Motor Oil Range Organics (MRO)	0.061	0.052	0.080	J	mg/L	1	9/23/2022 4:56:05 PM	70201
Surr: DNOP	103	0	42.2-138		%Rec	1	9/23/2022 4:56:05 PM	70201
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	9/23/2022 1:31:30 PM	70216
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/23/2022 1:31:30 PM	70216
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	9/23/2022 1:31:30 PM	70216
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/23/2022 1:31:30 PM	70216
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/23/2022 1:31:30 PM	70216
Diethyl phthalate	ND	6.0	10		µg/L	1	9/23/2022 1:31:30 PM	70216
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/23/2022 1:31:30 PM	70216
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	9/23/2022 1:31:30 PM	70216
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/23/2022 1:31:30 PM	70216
2-Methylphenol	ND	5.0	10		µg/L	1	9/23/2022 1:31:30 PM	70216
3+4-Methylphenol	ND	5.1	10		µg/L	1	9/23/2022 1:31:30 PM	70216
Phenol	ND	18	20		µg/L	1	9/23/2022 1:31:30 PM	70216
Pyridine	ND	14	40		µg/L	1	9/23/2022 1:31:30 PM	70216
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/23/2022 1:31:30 PM	70216
Surr: 2-Fluorophenol	41.9	0	15-84.5		%Rec	1	9/23/2022 1:31:30 PM	70216
Surr: Phenol-d5	35.8	0	15-67		%Rec	1	9/23/2022 1:31:30 PM	70216
Surr: 2,4,6-Tribromophenol	46.6	0	15-108		%Rec	1	9/23/2022 1:31:30 PM	70216
Surr: Nitrobenzene-d5	56.6	0	16.8-112		%Rec	1	9/23/2022 1:31:30 PM	70216
Surr: 2-Fluorobiphenyl	58.7	0	15-101		%Rec	1	9/23/2022 1:31:30 PM	70216
Surr: 4-Terphenyl-d14	73.8	0	34.4-134		%Rec	1	9/23/2022 1:31:30 PM	70216
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	5.7	0.11	1.0		µg/L	1	9/21/2022 5:29:00 PM	70216
Naphthalene	ND	0.20	0.30		µg/L	1	9/21/2022 5:29:00 PM	70216
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	9/21/2022 5:29:00 PM	70216
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	9/21/2022 5:29:00 PM	70216
Acenaphthene	ND	0.14	0.30		µg/L	1	9/21/2022 5:29:00 PM	70216
Fluorene	ND	0.095	0.30		µg/L	1	9/21/2022 5:29:00 PM	70216
Phenanthrene	ND	0.16	0.30		µg/L	1	9/21/2022 5:29:00 PM	70216
Anthracene	ND	0.14	0.30		µg/L	1	9/21/2022 5:29:00 PM	70216
Fluoranthene	ND	0.14	0.30		µg/L	1	9/21/2022 5:29:00 PM	70216
Pyrene	ND	0.32	1.0		µg/L	1	9/21/2022 5:29:00 PM	70216
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/21/2022 5:29:00 PM	70216
Chrysene	ND	0.25	0.30		µg/L	1	9/21/2022 5:29:00 PM	70216
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/21/2022 5:29:00 PM	70216
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/21/2022 5:29:00 PM	70216

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 9-14-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022
Lab ID: 2209730-010C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	54.4	0	31.6-100		%Rec	1	9/21/2022 5:29:00 PM	70216
Surr: 2-Fluorobiphenyl	50.4	0	26.7-90.1		%Rec	1	9/21/2022 5:29:00 PM	70216
Surr: 4-Terphenyl-d14	56.4	0	72.3-147	S	%Rec	1	9/21/2022 5:29:00 PM	70216

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 9-14-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022
Lab ID: 2209730-010D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.17	0.0016	0.0030		mg/L	1	9/19/2022 12:15:38 PM	70240
Beryllium	ND	0.00088	0.0020		mg/L	1	9/19/2022 12:15:38 PM	70240
Cadmium	ND	0.0018	0.0020		mg/L	1	9/19/2022 12:15:38 PM	70240
Chromium	ND	0.0020	0.0060		mg/L	1	9/19/2022 12:15:38 PM	70240
Cobalt	0.015	0.0035	0.0060		mg/L	1	9/19/2022 12:15:38 PM	70240
Nickel	0.029	0.0053	0.010		mg/L	1	9/19/2022 12:15:38 PM	70240
Silver	ND	0.0018	0.0050		mg/L	1	9/19/2022 12:15:38 PM	70240
Vanadium	0.016	0.0035	0.050	J	mg/L	1	9/19/2022 12:15:38 PM	70240
Zinc	ND	0.0039	0.010		mg/L	1	9/19/2022 12:15:38 PM	70240
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/19/2022 3:32:03 PM	70240
Arsenic	0.0013	0.00013	0.0010		mg/L	1	9/19/2022 3:32:03 PM	70240
Lead	0.0029	0.000061	0.00050		mg/L	1	9/19/2022 3:32:03 PM	70240
Selenium	0.0014	0.00037	0.0010		mg/L	1	9/19/2022 3:32:03 PM	70240
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/20/2022 4:36:13 PM	70279

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 9-14-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022
Lab ID: 2209730-010E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.058	0.0011	0.0020		mg/L	1	9/27/2022 3:49:13 PM	C91347
Beryllium	ND	0.00088	0.0020		mg/L	1	9/27/2022 3:49:13 PM	C91347
Cadmium	ND	0.00098	0.0020		mg/L	1	9/27/2022 3:49:13 PM	C91347
Chromium	ND	0.0020	0.0060		mg/L	1	9/27/2022 3:49:13 PM	C91347
Cobalt	ND	0.0024	0.0060		mg/L	1	9/27/2022 3:49:13 PM	C91347
Nickel	0.033	0.0033	0.010		mg/L	1	9/27/2022 3:49:13 PM	C91347
Silver	0.0040	0.0013	0.0050	J	mg/L	1	9/28/2022 1:40:23 PM	A91392
Vanadium	0.0048	0.0017	0.050	J	mg/L	1	9/27/2022 3:49:13 PM	C91347
Zinc	0.010	0.0032	0.010		mg/L	1	9/27/2022 3:49:13 PM	C91347
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/15/2022 5:55:54 PM	C91078
Arsenic	0.00049	0.00012	0.0010	J	mg/L	1	9/15/2022 5:55:54 PM	C91078
Lead	0.000080	0.000057	0.00050	J	mg/L	1	9/15/2022 5:55:54 PM	C91078
Selenium	0.00094	0.00034	0.0010	J	mg/L	1	9/15/2022 5:55:54 PM	C91078
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/20/2022 4:38:22 PM	70279

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB 9-14-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/14/2022 12:10:00 PM
Lab ID: 2209730-011A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	9/17/2022 4:08:43 AM	R91115
Toluene	ND	0.20	1.0		µg/L	1	9/17/2022 4:08:43 AM	R91115
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/17/2022 4:08:43 AM	R91115
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/17/2022 4:08:43 AM	R91115
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/17/2022 4:08:43 AM	R91115
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/17/2022 4:08:43 AM	R91115
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/17/2022 4:08:43 AM	R91115
Acetone	59	2.5	10		µg/L	1	9/17/2022 4:08:43 AM	R91115
Bromomethane	ND	0.85	3.0		µg/L	1	9/17/2022 4:08:43 AM	R91115
2-Butanone	12	2.0	10		µg/L	1	9/17/2022 4:08:43 AM	R91115
Carbon disulfide	ND	0.59	10		µg/L	1	9/17/2022 4:08:43 AM	R91115
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/17/2022 4:08:43 AM	R91115
Chloroform	ND	0.13	1.0		µg/L	1	9/17/2022 4:08:43 AM	R91115
Chloromethane	ND	0.41	3.0		µg/L	1	9/17/2022 4:08:43 AM	R91115
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/17/2022 4:08:43 AM	R91115
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/17/2022 4:08:43 AM	R91115
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/17/2022 4:08:43 AM	R91115
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/17/2022 4:08:43 AM	R91115
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/17/2022 4:08:43 AM	R91115
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/17/2022 4:08:43 AM	R91115
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/17/2022 4:08:43 AM	R91115
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/17/2022 4:08:43 AM	R91115
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/17/2022 4:08:43 AM	R91115
Styrene	ND	0.14	1.0		µg/L	1	9/17/2022 4:08:43 AM	R91115
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/17/2022 4:08:43 AM	R91115
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/17/2022 4:08:43 AM	R91115
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/17/2022 4:08:43 AM	R91115
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/17/2022 4:08:43 AM	R91115
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/17/2022 4:08:43 AM	R91115
Surr: 1,2-Dichloroethane-d4	105	0	70-130		%Rec	1	9/17/2022 4:08:43 AM	R91115
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	9/17/2022 4:08:43 AM	R91115
Surr: Dibromofluoromethane	116	0	70-130		%Rec	1	9/17/2022 4:08:43 AM	R91115
Surr: Toluene-d8	103	0	70-130		%Rec	1	9/17/2022 4:08:43 AM	R91115

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 3rd Quarter
Collection Date:
Lab ID: 2209730-012A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	9/17/2022 4:37:13 AM	R91115
Toluene	ND	0.20	1.0		µg/L	1	9/17/2022 4:37:13 AM	R91115
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/17/2022 4:37:13 AM	R91115
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/17/2022 4:37:13 AM	R91115
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/17/2022 4:37:13 AM	R91115
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/17/2022 4:37:13 AM	R91115
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/17/2022 4:37:13 AM	R91115
Acetone	ND	2.5	10		µg/L	1	9/17/2022 4:37:13 AM	R91115
Bromomethane	ND	0.85	3.0		µg/L	1	9/17/2022 4:37:13 AM	R91115
2-Butanone	ND	2.0	10		µg/L	1	9/17/2022 4:37:13 AM	R91115
Carbon disulfide	ND	0.59	10		µg/L	1	9/17/2022 4:37:13 AM	R91115
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/17/2022 4:37:13 AM	R91115
Chloroform	ND	0.13	1.0		µg/L	1	9/17/2022 4:37:13 AM	R91115
Chloromethane	ND	0.41	3.0		µg/L	1	9/17/2022 4:37:13 AM	R91115
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/17/2022 4:37:13 AM	R91115
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/17/2022 4:37:13 AM	R91115
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/17/2022 4:37:13 AM	R91115
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/17/2022 4:37:13 AM	R91115
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/17/2022 4:37:13 AM	R91115
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/17/2022 4:37:13 AM	R91115
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/17/2022 4:37:13 AM	R91115
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/17/2022 4:37:13 AM	R91115
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/17/2022 4:37:13 AM	R91115
Styrene	ND	0.14	1.0		µg/L	1	9/17/2022 4:37:13 AM	R91115
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/17/2022 4:37:13 AM	R91115
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/17/2022 4:37:13 AM	R91115
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/17/2022 4:37:13 AM	R91115
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/17/2022 4:37:13 AM	R91115
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/17/2022 4:37:13 AM	R91115
Surr: 1,2-Dichloroethane-d4	106	0	70-130		%Rec	1	9/17/2022 4:37:13 AM	R91115
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	9/17/2022 4:37:13 AM	R91115
Surr: Dibromofluoromethane	115	0	70-130		%Rec	1	9/17/2022 4:37:13 AM	R91115
Surr: Toluene-d8	102	0	70-130		%Rec	1	9/17/2022 4:37:13 AM	R91115

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209730**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 3rd Quarter
Collection Date:
Lab ID: 2209730-012B
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	9/20/2022 1:57:41 AM	70247

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

ANALYTICAL REPORT

September 23, 2022

Hall Environmental Analysis Laboratory

Sample Delivery Group: L1536827

Samples Received: 09/16/2022

Project Number:

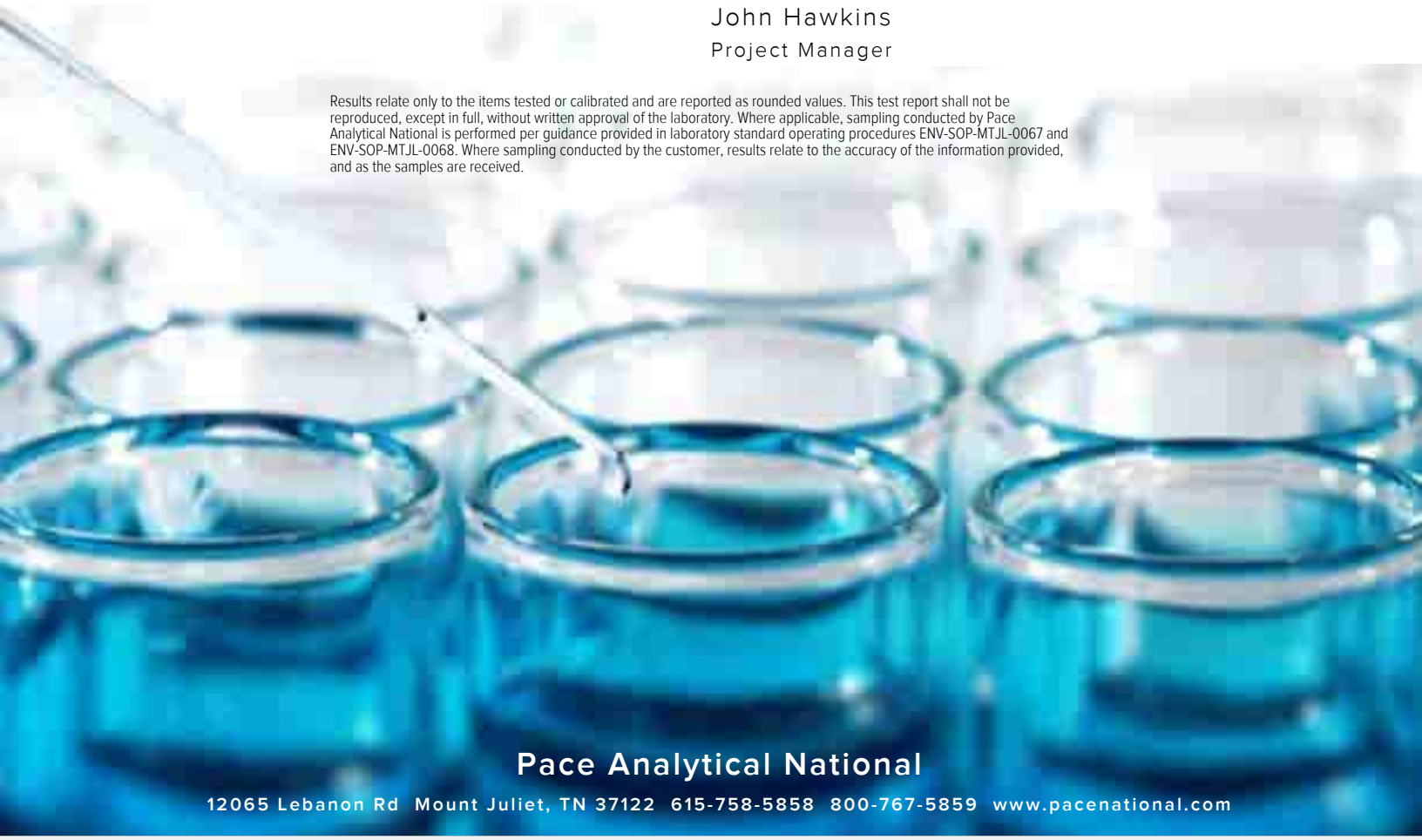
Description:

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By:

John Hawkins
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 5

Sr: Sample Results 6

2209730-001F EB-09-14-22 L1536827-01 6

2209730-0002F MKTF-27 L1536827-02 7

2209730-003F MKTF-28 L1536827-03 8

2209730-004F MKTF-29 L1536827-04 9

2209730-005F MKTF-30 L1536827-05 10

2209730-006F OPIS-1 L1536827-06 11

2209730-007F NAPI-2 L1536827-07 12

2209730-008F NAPI-3 L1536827-08 13

2209730-009F KA-3 L1536827-09 14

2209730-010F DUP 9-14-22 L1536827-10 15

Qc: Quality Control Summary 16

Wet Chemistry by Method 4500CN E-2016 16

Gl: Glossary of Terms 19

Al: Accreditations & Locations 20

Sc: Sample Chain of Custody 21

2209730-001F EB-09-14-22 L1536827-01 GW

Collected by	Collected date/time	Received date/time
	09/14/22 08:30	09/16/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1928522	1	09/21/22 02:19	09/22/22 21:47	LDT	Mt. Juliet, TN

2209730-0002F MKTF-27 L1536827-02 GW

Collected by	Collected date/time	Received date/time
	09/14/22 09:00	09/16/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1928523	1	09/22/22 02:31	09/23/22 00:47	LDT	Mt. Juliet, TN

2209730-003F MKTF-28 L1536827-03 GW

Collected by	Collected date/time	Received date/time
	09/14/22 09:45	09/16/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1928523	1	09/22/22 02:31	09/23/22 00:52	LDT	Mt. Juliet, TN

2209730-004F MKTF-29 L1536827-04 GW

Collected by	Collected date/time	Received date/time
	09/14/22 10:10	09/16/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1928523	1	09/22/22 02:31	09/23/22 00:53	LDT	Mt. Juliet, TN

2209730-005F MKTF-30 L1536827-05 GW

Collected by	Collected date/time	Received date/time
	09/14/22 10:30	09/16/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1928523	1	09/22/22 02:31	09/23/22 00:54	LDT	Mt. Juliet, TN

2209730-006F OPIS-1 L1536827-06 GW

Collected by	Collected date/time	Received date/time
	09/14/22 10:50	09/16/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1928523	1	09/22/22 02:31	09/23/22 00:55	LDT	Mt. Juliet, TN

2209730-007F NAPI-2 L1536827-07 GW

Collected by	Collected date/time	Received date/time
	09/14/22 11:20	09/16/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1928523	1	09/22/22 02:31	09/23/22 00:56	LDT	Mt. Juliet, TN

2209730-008F NAPI-3 L1536827-08 GW

Collected by	Collected date/time	Received date/time
	09/14/22 11:45	09/16/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1928523	1	09/22/22 02:31	09/23/22 00:57	LDT	Mt. Juliet, TN

SAMPLE SUMMARY

2209730-009F KA-3 L1536827-09 GW

Collected by	Collected date/time	Received date/time
	09/14/22 10:00	09/16/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1928523	1	09/22/22 02:31	09/23/22 00:58	LDT	Mt. Juliet, TN

2209730-010F DUP 9-14-22 L1536827-10 GW

Collected by	Collected date/time	Received date/time
	09/14/22 00:00	09/16/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1928523	1	09/22/22 02:31	09/23/22 00:59	LDT	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	09/22/2022 21:47	WG1928522

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.00799		0.00500	1	09/23/2022 00:47	WG1928523

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	09/23/2022 00:52	WG1928523

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.00602		0.00500	1	09/23/2022 00:53	WG1928523

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	09/23/2022 00:54	WG1928523

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.0429		0.00500	1	09/23/2022 00:55	WG1928523

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.0171		0.00500	1	09/23/2022 00:56	WG1928523

Received by OCD: 4/21/2023 9:21:57 AM

220730-0081 NAPI-3

SAMPLE RESULTS - 08

Collected date/time: 09/14/22 11:45

L1536827

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.00856		0.00500	1	09/23/2022 00:57	WG1928523

Released to Imaging: 4/21/2023 9:40:26 AM

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.0114		0.00500	1	09/23/2022 00:58	WG1928523

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.00901		0.00500	1	09/23/2022 00:59	WG1928523

Method Blank (MB)

(MB) R3840466-1 09/22/22 21:15

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1535396-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1535396-04 09/22/22 21:19 • (DUP) R3840466-3 09/22/22 21:20

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

L1536174-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1536174-01 09/22/22 21:51 • (DUP) R3840466-8 09/22/22 21:52

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	2.88	3.06	20	6.06		20

Laboratory Control Sample (LCS)

(LCS) R3840466-2 09/22/22 21:16

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.0965	96.5	87.1-120	

L1535656-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1535656-01 09/22/22 21:21 • (MS) R3840466-4 09/22/22 21:22 • (MSD) R3840466-5 09/22/22 21:23

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0951	0.0952	95.1	95.2	1	90.0-110			0.105	20

L1536174-13 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1536174-13 09/22/22 21:31 • (MS) R3840466-6 09/22/22 21:32 • (MSD) R3840466-7 09/22/22 21:33

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	0.518	0.605	0.509	87.0	0.000	1	90.0-110	E V	E V	17.2	20

L1536174-13 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1536174-13 09/22/22 21:31 • (MS) R3840466-6 09/22/22 21:32 • (MSD) R3840466-7 09/22/22 21:33

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %

Sample Narrative:

MS: Matrix spike failure due to matrix interference.

MSD: Matrix spike failure due to matrix interference.

Method Blank (MB)

(MB) R3840481-1 09/23/22 00:26

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1536428-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1536428-02 09/23/22 00:31 • (DUP) R3840481-3 09/23/22 00:32

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

L1536482-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1536482-02 09/23/22 00:39 • (DUP) R3840481-6 09/23/22 00:40

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3840481-2 09/23/22 00:27

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.0959	95.9	87.1-120	

L1536480-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1536480-02 09/23/22 00:33 • (MS) R3840481-4 09/23/22 00:34 • (MSD) R3840481-5 09/23/22 00:35

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0919	0.0946	91.9	94.6	1	90.0-110			2.90	20

L1536827-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1536827-02 09/23/22 00:47 • (MS) R3840481-7 09/23/22 00:48 • (MSD) R3840481-8 09/23/22 00:51

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	0.00799	0.107	0.110	99.0	102	1	90.0-110			2.76	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
V	The sample concentration is too high to evaluate accurate spike recoveries.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Received by OCD: 4/21/2023 9:21:57 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

L155 6827

SUB CONTRATOR: Pace TN	COMPANY: PACE TN	PHONE: (800) 767-5859	FAX: (615) 758-5859
ADDRESS: 12065 Lebanon Rd		ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: Mt. Juliet, TN 37122			

J128

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS	
1	2209730-001F	EB-09-14-22	500AMBHDP F-NAOH	Groundwater	9/14/2022 8:30:00 AM	1	Total Cyanide J and MDL	- 01
2	2209730-002F	MKTF-27	500AMBHDP F-NAOH	Groundwater	9/14/2022 9:00:00 AM	1	Total Cyanide J and MDL	- 02
3	2209730-003F	MKTF-28	500AMBHDP F-NAOH	Groundwater	9/14/2022 9:45:00 AM	1	Total Cyanide J and MDL	- 03
4	2209730-004F	MKTF-29	500AMBHDP F-NAOH	Groundwater	9/14/2022 10:10:00 AM	1	Total Cyanide J and MDL	- 04
5	2209730-005F	MKTF-30	500AMBHDP F-NAOH	Groundwater	9/14/2022 10:30:00 AM	1	Total Cyanide J and MDL	- 05
6	2209730-006F	OPIS-1	500AMBHDP F-NAOH	Groundwater	9/14/2022 10:50:00 AM	1	Total Cyanide J and MDL	- 06
7	2209730-007F	NAPI-2	500AMBHDP F-NAOH	Groundwater	9/14/2022 11:20:00 AM	1	Total Cyanide J and MDL	- 07
8	2209730-008F	NAPI-3	500AMBHDP F-NAOH	Groundwater	9/14/2022 11:45:00 AM	1	Total Cyanide J and MDL	- 08
9	2209730-009F	KA-3	500AMBHDP F-NAOH	Groundwater	9/14/2022 12:10:00 PM	1	Total Cyanide J and MDL	- 09
10	2209730-010F	DUP 9-14-22	500AMBHDP F-NAOH	Groundwater	9/14/2022	1	Total Cyanide J and MDL	- 10

Sample Receipt Checklist

COC Seal Present/Intact: Y N NM If Applicable
COC Signed/Accurate: Y N VOA Zero Headspace: Y N
Bottles arrive intact: Y N Pres.Correct/Check: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
RAD Screen <0.5 mR/hr: Y N

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

5755 8089 3995 1.8+0=1.8

Relinquished By:	Date: 9/15/2022	Time: 8:16 AM	Received By:	Date: 9/16/22	Time: 8:40
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☑ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY

Temp of samples _____ °C Attempt to Cool ? _____

Comments: _____

Released to Imaging: 4/21/2023 9:40:26 AM

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209730**

04-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70240**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **70240**	RunNo: **91129**
Prep Date: **9/16/2022**	Analysis Date: **9/19/2022**	SeqNo: **3260099** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LCSLL-70240**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **70240**	RunNo: **91129**
Prep Date: **9/16/2022**	Analysis Date: **9/19/2022**	SeqNo: **3260100** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0025	0.0030	0.002000	0	124	50	150			J
Beryllium	0.0020	0.0020	0.002000	0	98.1	50	150			J
Cadmium	0.0017	0.0020	0.002000	0	83.1	50	150			J
Chromium	0.0046	0.0060	0.006000	0	76.8	50	150			J
Cobalt	0.0070	0.0060	0.006000	0	117	50	150			
Nickel	0.0048	0.010	0.005000	0	96.1	50	150			J
Silver	0.0048	0.0050	0.005000	0	96.1	50	150			J
Vanadium	0.010	0.050	0.01000	0	101	50	150			J
Zinc	0.0095	0.010	0.01000	0	95.1	50	150			J

Sample ID: **LCS-70240**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **70240**	RunNo: **91129**
Prep Date: **9/16/2022**	Analysis Date: **9/19/2022**	SeqNo: **3260101** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.53	0.0030	0.5000	0	106	85	115			
Beryllium	0.54	0.0020	0.5000	0	109	85	115			
Cadmium	0.52	0.0020	0.5000	0	104	85	115			
Chromium	0.52	0.0060	0.5000	0	104	85	115			
Cobalt	0.52	0.0060	0.5000	0	104	85	115			
Nickel	0.51	0.010	0.5000	0	101	85	115			
Silver	0.099	0.0050	0.1000	0	98.6	85	115			
Vanadium	0.53	0.050	0.5000	0	106	85	115			
Zinc	0.56	0.010	0.5000	0	113	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209730**

04-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-B**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **B91347**	RunNo: **91347**
Prep Date:	Analysis Date: **9/27/2022**	SeqNo: **3270225** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS-B**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **B91347**	RunNo: **91347**
Prep Date:	Analysis Date: **9/27/2022**	SeqNo: **3270226** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0014	0.0030	0.002000	0	68.2	50	150			J
Beryllium	0.0018	0.0020	0.002000	0	88.8	50	150			J
Cadmium	0.0022	0.0020	0.002000	0	110	50	150			
Chromium	0.0058	0.0060	0.006000	0	95.9	50	150			J
Cobalt	0.0058	0.0060	0.006000	0	96.3	50	150			J
Nickel	0.0067	0.010	0.005000	0	133	50	150			J
Vanadium	0.0097	0.050	0.01000	0	96.8	50	150			J
Zinc	0.010	0.010	0.01000	0	104	50	150			

Sample ID: **LCS-B**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **B91347**	RunNo: **91347**
Prep Date:	Analysis Date: **9/27/2022**	SeqNo: **3270227** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0030	0.5000	0	99.4	85	115			
Beryllium	0.51	0.0020	0.5000	0	102	85	115			
Cadmium	0.51	0.0020	0.5000	0	102	85	115			
Chromium	0.50	0.0060	0.5000	0	101	85	115			
Cobalt	0.49	0.0060	0.5000	0	97.9	85	115			
Nickel	0.49	0.010	0.5000	0	98.5	85	115			
Vanadium	0.51	0.050	0.5000	0	102	85	115			
Zinc	0.50	0.010	0.5000	0	100	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209730**
04-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-B** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW** Batch ID: **B91347** RunNo: **91347**
Prep Date: Analysis Date: **9/27/2022** SeqNo: **3269822** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS-B** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **B91347** RunNo: **91347**
Prep Date: Analysis Date: **9/27/2022** SeqNo: **3269823** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0014	0.0020	0.002000	0	68.2	50	150			J
Beryllium	0.0018	0.0020	0.002000	0	88.8	50	150			J
Cadmium	0.0022	0.0020	0.002000	0	110	50	150			
Chromium	0.0058	0.0060	0.006000	0	95.9	50	150			J
Cobalt	0.0058	0.0060	0.006000	0	96.3	50	150			J
Nickel	0.0067	0.010	0.005000	0	133	50	150			J
Vanadium	0.0097	0.050	0.01000	0	96.8	50	150			J
Zinc	0.010	0.010	0.01000	0	104	50	150			

Sample ID: **LCS-B** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **B91347** RunNo: **91347**
Prep Date: Analysis Date: **9/27/2022** SeqNo: **3269824** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0020	0.5000	0	99.4	85	115			
Beryllium	0.51	0.0020	0.5000	0	102	85	115			
Cadmium	0.51	0.0020	0.5000	0	102	85	115			
Chromium	0.50	0.0060	0.5000	0	101	85	115			
Cobalt	0.49	0.0060	0.5000	0	97.9	85	115			
Nickel	0.49	0.010	0.5000	0	98.5	85	115			
Vanadium	0.51	0.050	0.5000	0	102	85	115			
Zinc	0.50	0.010	0.5000	0	100	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209730**
04-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-C**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **C91347**	RunNo: **91347**
Prep Date:	Analysis Date: **9/27/2022**	SeqNo: **3269825** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS-C**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **C91347**	RunNo: **91347**
Prep Date:	Analysis Date: **9/27/2022**	SeqNo: **3269826** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0014	0.0020	0.002000	0	70.7	50	150			J
Beryllium	0.0018	0.0020	0.002000	0	90.4	50	150			J
Cadmium	0.0025	0.0020	0.002000	0	124	50	150			
Chromium	0.0060	0.0060	0.006000	0	100	50	150			
Cobalt	0.0053	0.0060	0.006000	0	88.2	50	150			J
Nickel	0.0057	0.010	0.005000	0	114	50	150			J
Vanadium	0.010	0.050	0.01000	0	103	50	150			J
Zinc	0.010	0.010	0.01000	0	102	50	150			

Sample ID: **LCS-C**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **C91347**	RunNo: **91347**
Prep Date:	Analysis Date: **9/27/2022**	SeqNo: **3269827** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	98.4	85	115			
Beryllium	0.50	0.0020	0.5000	0	100	85	115			
Cadmium	0.50	0.0020	0.5000	0	100	85	115			
Chromium	0.50	0.0060	0.5000	0	99.8	85	115			
Cobalt	0.48	0.0060	0.5000	0	96.8	85	115			
Nickel	0.49	0.010	0.5000	0	97.8	85	115			
Vanadium	0.50	0.050	0.5000	0	101	85	115			
Zinc	0.50	0.010	0.5000	0	99.4	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209730**

04-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-A**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A91392**	RunNo: **91392**
Prep Date:	Analysis Date: **9/28/2022**	SeqNo: **3271799** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	ND	0.0050								

Sample ID: **LLLCS-A**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A91392**	RunNo: **91392**
Prep Date:	Analysis Date: **9/28/2022**	SeqNo: **3271800** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.0048	0.0050	0.005000	0	96.1	50	150			J

Sample ID: **LCS-A**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A91392**	RunNo: **91392**
Prep Date:	Analysis Date: **9/28/2022**	SeqNo: **3271801** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.10	0.0050	0.1000	0	99.8	85	115			

Sample ID: **2209730-010EMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **DUP 9-14-22**	Batch ID: **A91392**	RunNo: **91392**
Prep Date:	Analysis Date: **9/28/2022**	SeqNo: **3271824** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.11	0.0050	0.1000	0.004047	110	70	130			

Sample ID: **2209730-010EMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **DUP 9-14-22**	Batch ID: **A91392**	RunNo: **91392**
Prep Date:	Analysis Date: **9/28/2022**	SeqNo: **3271825** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.10	0.0050	0.1000	0.004047	97.4	70	130	11.7	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209730**
04-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70240** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **70240** RunNo: **91144**
Prep Date: **9/16/2022** Analysis Date: **9/19/2022** SeqNo: **3260907** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **MSLCSLL-70240** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **70240** RunNo: **91144**
Prep Date: **9/16/2022** Analysis Date: **9/19/2022** SeqNo: **3260908** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0011	0.0010	0.001000	0	111	50	150			
Arsenic	0.0011	0.0010	0.001000	0	107	50	150			
Lead	0.00054	0.00050	0.0005000	0	107	50	150			
Selenium	0.0011	0.0010	0.001000	0	113	50	150			

Sample ID: **MSLCS-70240** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **70240** RunNo: **91144**
Prep Date: **9/16/2022** Analysis Date: **9/19/2022** SeqNo: **3260909** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.2	85	115			
Arsenic	0.024	0.0010	0.02500	0	95.7	85	115			
Lead	0.012	0.00050	0.01250	0	99.2	85	115			
Selenium	0.023	0.0010	0.02500	0	92.5	85	115			

Sample ID: **2209730-009DMSLL** SampType: **MS** TestCode: **EPA 200.8: Metals**
Client ID: **KA-3** Batch ID: **70240** RunNo: **91144**
Prep Date: **9/16/2022** Analysis Date: **9/19/2022** SeqNo: **3260930** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	102	70	130			
Arsenic	0.026	0.0010	0.02500	0.0007115	102	70	130			
Lead	0.012	0.00050	0.01250	0.0006673	91.7	70	130			
Selenium	0.026	0.0010	0.02500	0.0008011	99.0	70	130			

Sample ID: **2209730-009DMSDL** SampType: **MSD** TestCode: **EPA 200.8: Metals**
Client ID: **KA-3** Batch ID: **70240** RunNo: **91144**
Prep Date: **9/16/2022** Analysis Date: **9/19/2022** SeqNo: **3260931** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209730**
04-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **2209730-009DMSDL** SampType: **MSD** TestCode: **EPA 200.8: Metals**
Client ID: **KA-3** Batch ID: **70240** RunNo: **91144**
Prep Date: **9/16/2022** Analysis Date: **9/19/2022** SeqNo: **3260931** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.027	0.0010	0.02500	0	107	70	130	4.02	20	
Arsenic	0.026	0.0010	0.02500	0.0007115	102	70	130	0.0267	20	
Lead	0.012	0.00050	0.01250	0.0006673	90.6	70	130	1.12	20	
Selenium	0.023	0.0010	0.02500	0.0008011	89.4	70	130	9.87	20	

Sample ID: **2209730-010DMSLL** SampType: **MS** TestCode: **EPA 200.8: Metals**
Client ID: **DUP 9-14-22** Batch ID: **70240** RunNo: **91144**
Prep Date: **9/16/2022** Analysis Date: **9/19/2022** SeqNo: **3260935** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.022	0.0010	0.02500	0	88.8	70	130			
Arsenic	0.026	0.0010	0.02500	0.001286	97.3	70	130			
Lead	0.014	0.00050	0.01250	0.002911	86.7	70	130			
Selenium	0.023	0.0010	0.02500	0.001432	85.2	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209730**
04-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **C91078**	RunNo: **91078**
Prep Date:	Analysis Date: **9/15/2022**	SeqNo: **3257887** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **C91078**	RunNo: **91078**
Prep Date:	Analysis Date: **9/15/2022**	SeqNo: **3257889** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00083	0.0010	0.001000	0	83.2	50	150			J
Arsenic	0.00095	0.0010	0.001000	0	95.5	50	150			J
Lead	0.00049	0.00050	0.0005000	0	97.0	50	150			J
Selenium	0.00062	0.0010	0.001000	0	62.2	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **C91078**	RunNo: **91078**
Prep Date:	Analysis Date: **9/15/2022**	SeqNo: **3257891** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.2	85	115			
Arsenic	0.024	0.0010	0.02500	0	97.9	85	115			
Lead	0.012	0.00050	0.01250	0	96.7	85	115			
Selenium	0.027	0.0010	0.02500	0	107	85	115			

Sample ID: **2209730-009EMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **KA-3**	Batch ID: **C91078**	RunNo: **91078**
Prep Date:	Analysis Date: **9/15/2022**	SeqNo: **3257922** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	103	70	130			
Arsenic	0.026	0.0010	0.02500	0.0006708	99.6	70	130			
Lead	0.011	0.00050	0.01250	0.0002101	86.7	70	130			
Selenium	0.027	0.0010	0.02500	0.001416	103	70	130			

Sample ID: **2209730-009EMSDL**	SampType: **MSD**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **KA-3**	Batch ID: **C91078**	RunNo: **91078**
Prep Date:	Analysis Date: **9/15/2022**	SeqNo: **3257923** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209730**
04-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **2209730-009EMSDL** SampType: **MSD** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **KA-3** Batch ID: **C91078** RunNo: **91078**
Prep Date: Analysis Date: **9/15/2022** SeqNo: **3257923** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	104	70	130	0.727	20	
Arsenic	0.026	0.0010	0.02500	0.0006708	100	70	130	0.855	20	
Lead	0.011	0.00050	0.01250	0.0002101	85.1	70	130	1.82	20	
Selenium	0.026	0.0010	0.02500	0.001416	97.8	70	130	4.67	20	

Sample ID: **2209730-010EMSLL** SampType: **MS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **DUP 9-14-22** Batch ID: **C91078** RunNo: **91078**
Prep Date: Analysis Date: **9/15/2022** SeqNo: **3257925** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	105	70	130			
Arsenic	0.026	0.0010	0.02500	0.0004917	103	70	130			
Lead	0.011	0.00050	0.01250	.00007954	88.2	70	130			
Selenium	0.025	0.0010	0.02500	0.0009367	98.0	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209730**
04-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70279**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **PBW**	Batch ID: **70279**	RunNo: **91165**							
Prep Date: **9/20/2022**	Analysis Date: **9/20/2022**	SeqNo: **3261772**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-70279**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **BatchQC**	Batch ID: **70279**	RunNo: **91165**							
Prep Date: **9/20/2022**	Analysis Date: **9/20/2022**	SeqNo: **3261773**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00017	0.00020	0.0001500	0	111	50	150			J

Sample ID: **LCS-70279**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **LCSW**	Batch ID: **70279**	RunNo: **91165**							
Prep Date: **9/20/2022**	Analysis Date: **9/20/2022**	SeqNo: **3261774**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	102	85	115			

Sample ID: **2209730-001DMS**	SampType: **MS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **EB-09-14-22**	Batch ID: **70279**	RunNo: **91165**							
Prep Date: **9/20/2022**	Analysis Date: **9/20/2022**	SeqNo: **3261802**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.00020	0.005000	0	101	75	125			

Sample ID: **2209730-001DMSD**	SampType: **MSD**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **EB-09-14-22**	Batch ID: **70279**	RunNo: **91165**							
Prep Date: **9/20/2022**	Analysis Date: **9/20/2022**	SeqNo: **3261805**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.00020	0.005000	0	100	75	125	0.496	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209730**

04-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70247**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **70247**	RunNo: **91159**
Prep Date: **9/19/2022**	Analysis Date: **9/19/2022**	SeqNo: **3261596** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-70247**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW**	Batch ID: **70247**	RunNo: **91159**
Prep Date: **9/19/2022**	Analysis Date: **9/19/2022**	SeqNo: **3261598** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.10	0.010	0.1000	0	102	70	130			

Sample ID: **LCSD-70247**	SampType: **LCSD**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSS02**	Batch ID: **70247**	RunNo: **91159**
Prep Date: **9/19/2022**	Analysis Date: **9/19/2022**	SeqNo: **3261599** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.10	0.010	0.1000	0	101	70	130	0.626	20	

Sample ID: **MB-70247**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **70247**	RunNo: **91159**
Prep Date: **9/19/2022**	Analysis Date: **9/19/2022**	SeqNo: **3261678** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209730**
04-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70201**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **PBW**	Batch ID: **70201**	RunNo: **91269**							
Prep Date: **9/15/2022**	Analysis Date: **9/23/2022**	SeqNo: **3266117**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.025	0.064								J
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.035		0.03750		93.7	42.2	138			

Sample ID: **LCS-70201**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSW**	Batch ID: **70201**	RunNo: **91269**							
Prep Date: **9/15/2022**	Analysis Date: **9/23/2022**	SeqNo: **3266118**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.14	0.064	0.1875	0	75.5	31.7	75.4			S
Surr: DNOP	0.019		0.01875		101	42.2	138			

Sample ID: **LCSD-70201**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSS02**	Batch ID: **70201**	RunNo: **91269**							
Prep Date: **9/15/2022**	Analysis Date: **9/23/2022**	SeqNo: **3266119**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.12	0.064	0.1875	0	66.6	31.7	75.4	12.5	20	
Surr: DNOP	0.017		0.01875		90.0	42.2	138	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209730**

04-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **A91113**	RunNo: **91113**
Prep Date:	Analysis Date: **9/16/2022**	SeqNo: **3259450** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.50	0.050	0.5000	0	99.3	80	120			
Surr: BFB	42		20.00		210	70	130			S

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **A91113**	RunNo: **91113**
Prep Date:	Analysis Date: **9/16/2022**	SeqNo: **3259451** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	19		20.00		97.0	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209730**

04-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R91115**	RunNo: **91115**
Prep Date:	Analysis Date: **9/16/2022**	SeqNo: **3259547** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	96.8	70	130			
Toluene	18	1.0	20.00	0	91.7	70	130			
Chlorobenzene	20	1.0	20.00	0	98.3	70	130			
1,1-Dichloroethene	17	1.0	20.00	0	85.6	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	89.5	70	130			
Surr: 1,2-Dichloroethane-d4	9.4		10.00		94.5	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	12		10.00		119	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R91115**	RunNo: **91115**
Prep Date:	Analysis Date: **9/16/2022**	SeqNo: **3259578** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209730**
04-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R91115**	RunNo: **91115**
Prep Date:	Analysis Date: **9/16/2022**	SeqNo: **3259578** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	12		10.00		119	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209730**
04-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70216**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **70216**	RunNo: **91245**
Prep Date: **9/16/2022**	Analysis Date: **9/22/2022**	SeqNo: **3265611** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Anthracene	ND	10								
Benz(a)anthracene	ND	5.0								
Benzo(b)fluoranthene	ND	10								
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	10								
2,4-Dinitrophenol	ND	20								
Fluoranthene	ND	10								
Fluorene	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
1-Methylnaphthalene	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
Naphthalene	ND	5.0								
Phenanthrene	ND	10								
Phenol	ND	20								
Pyrene	ND	10								
Pyridine	ND	40								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	100		200.0		51.6	15	84.5			
Surr: Phenol-d5	77		200.0		38.6	15	67			
Surr: 2,4,6-Tribromophenol	120		200.0		59.3	15	108			
Surr: Nitrobenzene-d5	67		100.0		67.2	16.8	112			
Surr: 2-Fluorobiphenyl	61		100.0		61.0	15	101			
Surr: 4-Terphenyl-d14	79		100.0		79.3	34.4	134			

Sample ID: **LCS-70216**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **70216**	RunNo: **91245**
Prep Date: **9/16/2022**	Analysis Date: **9/22/2022**	SeqNo: **3265612** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209730**

04-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **LCS-70216**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **70216**	RunNo: **91245**
Prep Date: **9/16/2022**	Analysis Date: **9/22/2022**	SeqNo: **3265612** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	66	10	100.0	0	65.8	21.3	104			
1,4-Dichlorobenzene	59	5.0	100.0	0	58.5	15	89.8			
Phenol	82	20	200.0	0	41.1	17	61.1			
Pyrene	80	10	100.0	0	80.0	61	123			
Surr: 2-Fluorophenol	100		200.0		50.1	15	84.5			
Surr: Phenol-d5	76		200.0		38.0	15	67			
Surr: 2,4,6-Tribromophenol	130		200.0		62.5	15	108			
Surr: Nitrobenzene-d5	72		100.0		72.0	16.8	112			
Surr: 2-Fluorobiphenyl	66		100.0		65.8	15	101			
Surr: 4-Terphenyl-d14	83		100.0		82.8	34.4	134			

Sample ID: **LCSD-70216**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **70216**	RunNo: **91245**
Prep Date: **9/16/2022**	Analysis Date: **9/22/2022**	SeqNo: **3265613** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	69	10	100.0	0	68.7	21.3	104	4.23	45.3	
1,4-Dichlorobenzene	60	5.0	100.0	0	60.3	15	89.8	3.06	39.6	
Phenol	85	20	200.0	0	42.7	17	61.1	3.65	42.5	
Pyrene	78	10	100.0	0	77.9	61	123	2.65	11.8	
Surr: 2-Fluorophenol	100		200.0		50.4	15	84.5	0	0	
Surr: Phenol-d5	77		200.0		38.3	15	67	0	0	
Surr: 2,4,6-Tribromophenol	130		200.0		66.9	15	108	0	0	
Surr: Nitrobenzene-d5	68		100.0		67.8	16.8	112	0	0	
Surr: 2-Fluorobiphenyl	66		100.0		65.8	15	101	0	0	
Surr: 4-Terphenyl-d14	79		100.0		79.2	34.4	134	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209730**

04-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **mb-70216**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**							
Client ID: **PBW**	Batch ID: **70216**	RunNo: **91209**							
Prep Date: **9/16/2022**	Analysis Date: **9/21/2022**	SeqNo: **3263103**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.30								
1-Methylnaphthalene	ND	0.30								
2-Methylnaphthalene	ND	0.30								
Acenaphthene	ND	0.30								
Fluorene	ND	0.30								
Phenanthrene	ND	0.30								
Anthracene	ND	0.30								
Fluoranthene	ND	0.30								
Pyrene	ND	1.0								
Benz(a)anthracene	ND	0.30								
Chrysene	ND	0.30								
Benzo(b)fluoranthene	ND	0.30								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	58		100.0		58.4	31.6	100			
Surr: 2,4,6-Tribromophenol	74		200.0		37.2	22	101			
Surr: 2-Fluorobiphenyl	56		100.0		55.8	26.7	90.1			
Surr: 4-Terphenyl-d14	67		100.0		67.0	72.3	147			S

Sample ID: **lcs-70216-lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**							
Client ID: **LCSW**	Batch ID: **70216**	RunNo: **91209**							
Prep Date: **9/16/2022**	Analysis Date: **9/21/2022**	SeqNo: **3263104**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.60	0.10	2.000	0	30.0	15	60.5			
Naphthalene	1.0	0.30	2.000	0	52.0	15	78.3			
1-Methylnaphthalene	1.0	0.30	2.000	0	51.0	15	79.6			
2-Methylnaphthalene	1.0	0.30	2.000	0	50.0	15	78.6			
Acenaphthene	1.1	0.30	2.000	0	54.0	15	92			
Fluorene	1.1	0.30	2.000	0	55.0	15	96			
Phenanthrene	1.2	0.30	2.000	0	58.0	21	103			
Anthracene	1.2	0.30	2.000	0	60.0	21.1	106			
Fluoranthene	1.3	0.30	2.000	0	67.0	32.8	119			
Pyrene	1.3	1.0	2.000	0	64.0	34.1	110			
Benz(a)anthracene	1.4	0.30	2.000	0	69.0	32	132			
Chrysene	1.3	0.30	2.000	0	65.0	31.3	112			
Benzo(b)fluoranthene	1.3	0.30	2.000	0	67.0	34.1	119			
Indeno(1,2,3-cd)pyrene	1.5	0.30	2.000	0	73.0	24.7	152			
Surr: Nitrobenzene-d5	56		100.0		56.3	31.6	100			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209730**

04-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **lcs-70216-lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **70216**	RunNo: **91209**
Prep Date: **9/16/2022**	Analysis Date: **9/21/2022**	SeqNo: **3263104** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	72		200.0		36.1	22	101			
Surr: 2-Fluorobiphenyl	54		100.0		53.8	26.7	90.1			
Surr: 4-Terphenyl-d14	59		100.0		59.0	72.3	147			S

Sample ID: **lcsd-70216-lf**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02**	Batch ID: **70216**	RunNo: **91209**
Prep Date: **9/16/2022**	Analysis Date: **9/21/2022**	SeqNo: **3263105** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.62	0.10	2.000	0	31.0	15	60.5	3.28	29.7	
Naphthalene	1.0	0.30	2.000	0	50.0	15	78.3	3.92	31.7	
1-Methylnaphthalene	0.98	0.30	2.000	0	49.0	15	79.6	4.00	31.4	
2-Methylnaphthalene	0.96	0.30	2.000	0	48.0	15	78.6	4.08	30.5	
Acenaphthene	1.1	0.30	2.000	0	54.0	15	92	0	30.5	
Fluorene	1.1	0.30	2.000	0	57.0	15	96	3.57	25.1	
Phenanthrene	1.2	0.30	2.000	0	60.0	21	103	3.39	26.4	
Anthracene	1.3	0.30	2.000	0	64.0	21.1	106	6.45	14.4	
Fluoranthene	1.4	0.30	2.000	0	71.0	32.8	119	5.80	14.8	
Pyrene	1.3	1.0	2.000	0	67.0	34.1	110	4.58	19.2	
Benz(a)anthracene	1.5	0.30	2.000	0	73.0	32	132	5.63	29.3	
Chrysene	1.4	0.30	2.000	0	68.0	31.3	112	4.51	19	
Benzo(b)fluoranthene	1.4	0.30	2.000	0	70.0	34.1	119	4.38	31.6	
Indeno(1,2,3-cd)pyrene	1.5	0.30	2.000	0	76.0	24.7	152	4.03	21.3	
Surr: Nitrobenzene-d5	61		100.0		60.9	31.6	100	0	0	
Surr: 2,4,6-Tribromophenol	77		200.0		38.4	22	101	0	0	
Surr: 2-Fluorobiphenyl	58		100.0		57.8	26.7	90.1	0	0	
Surr: 4-Terphenyl-d14	66		100.0		65.6	72.3	147	0	0	S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Marathon Work Order Number: 2209730 RcptNo: 1

Received By: Juan Rojas 9/15/2022 7:35:00 AM

Completed By: Sean Livingston 9/15/2022 8:10:15 AM

Reviewed By: 9-15-22

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐	
2. How was the sample delivered?	Courier			

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	jm 9/15/22
8. Was preservative added to bottles?	Yes ☑	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☑	No ☐	NA ☐
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: 2 0 10 (<2 or >12 unless noted)

Adjusted? yes

Checked by: jm 9/15/22

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks: 0.5 ml of HNO3 was added to sample 006D, 008D for pH<2. jm 9/15/22

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.4	Good				
2	1.6	Good				
3	2.3	Good				
4	0.4	Good				

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Marathon Work Order Number: 2209730 RcptNo: 1

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
5	0.9	Good				

Released to Imaging: 4/21/2023 9:40:36 AM
Received by OCD: 4/21/2023 9:21:57 AM

Chain-of-Custody Record

Marathon Gallup Refinery

g ddress: 92 Giant Crossing Road
Jamestown, NM,87347
808-640-1823
o ax#:
: ckage:
n rd ☐ Level 4 (Full Validation)
di ion: ☐ Az Compliance
L ☐ Other
D (Type)

Turn-Around Time:
X Standard Rush

Project Name:
3rd
2022 GW Sampling 1st Quarter
Project #: 697-080-001

Project Manager:
Lesli Alexander/Mackensie Swift

Sampler:
On Ice: ☑ Yes ☐ No
# of Coolers: 1 / 9.15.22 5
Cooler Temp(including CF): 0.9-0=0.9°c / see remarks / 9.15.22

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2209730	See Analyte List	8260B: VOC	8270C: SVOC	8270C SIM: PAH, 1,4 Dioxane	8015: TPH GRO/DRO/MRO	E200.7: Metals	E200.7: Dissolved Metals	E245.1 Mercury	E504.1: EDB	E335.4: Cyanide Subbed		537.1: PFAS	SM 5201B: BOD	410.4: COD	SM9223B E Coli
9/14	8:30		EB-9-14-22	13		001	X	X	X	X	X	X	X	X	X	X					
9/14	9:00		MKTF-27	13		002	X	X	X	X	X	X	X	X	X	X					
9/14	9:45		MKTF-28	13		003	X	X	X	X	X	X	X	X	X	X					
9/14	10:10		MKTF-29	13		004	X	X	X	X	X	X	X	X	X	X					
9/14	10:30		MKTF-30	13		005	X	X	X	X	X	X	X	X	X	X					
9/14	10:50		OPIS-1	13		006	X	X	X	X	X	X	X	X	X	X					
9/14	11:20		NAPI-2	13		007	X	X	X	X	X	X	X	X	X	X					
9/14	11:45		NAPI-3	13		008	X	X	X	X	X	X	X	X	X	X					
9/14	12:10		KA-3	13		009	X	X	X	X	X	X	X	X	X	X					
9/14	—		DUP-9-14-22	13		010	X	X	X	X	X	X	X	X	X	X					
9/14	12:10		FB-9-14-22	2		011	X	X	X												
9/14	—		TRIP BLANK	4		012	X	X	X												

Time:	Relinquished by:	Received by:	Via:	Date	Time
9/14 12:45	Hilario Tafoya		UPS	9.15.22	7:30
Time:	Relinquished by:	Received by:	Via:	Date	Time
			courier	9/15/22	7:35

9.15.22

2.4-0=2.4
1.6-0=1.6
2.3-0=2.3
0.4-0=0.4

0.9-0=0.9

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 04, 2022

Lesli Alexander

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX (505) 632-3911

RE: 2022 GW Sampling 3rd Quarter OrderNo.: 2209816

Dear Lesli Alexander:

Hall Environmental Analysis Laboratory received 8 sample(s) on 9/16/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **2209816**
Date: **10/4/2022**

CLIENT: Marathon
Project: 2022 GW Sampling 3rd Quarter

Analytical Notes Regarding this Workorder are listed below:

"S" flagged surrogates/spikes denote that the analyte recovery was outstide of the standard limits.

Analytical Notes Regarding EPA Method 8270 and 8270 SIMS:
Naphthalene, 1-Methylnaphthalene, and 2-methylnaphthalene were reported by EPA Method 8270 instead of EPA Method 8270SIMs becuase of their elevated concentrations for sample OW-57

Analytical Report
Lab Order: **2209816**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-15-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/15/2022 8:15:00 AM
Lab ID: 2209816-001A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	9/16/2022 6:49:00 PM	B91113
Surr: BFB	103	0	70-130		%Rec	1	9/16/2022 6:49:00 PM	B91113
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	9/16/2022 3:27:10 PM	A91114
Toluene	ND	0.20	1.0		µg/L	1	9/16/2022 3:27:10 PM	A91114
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/16/2022 3:27:10 PM	A91114
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/16/2022 3:27:10 PM	A91114
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/16/2022 3:27:10 PM	A91114
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/16/2022 3:27:10 PM	A91114
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/16/2022 3:27:10 PM	A91114
Acetone	4.3	2.5	10	J	µg/L	1	9/16/2022 3:27:10 PM	A91114
Bromomethane	ND	0.85	3.0		µg/L	1	9/16/2022 3:27:10 PM	A91114
2-Butanone	ND	2.0	10		µg/L	1	9/16/2022 3:27:10 PM	A91114
Carbon disulfide	ND	0.59	10		µg/L	1	9/16/2022 3:27:10 PM	A91114
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/16/2022 3:27:10 PM	A91114
Chloroform	ND	0.13	1.0		µg/L	1	9/16/2022 3:27:10 PM	A91114
Chloromethane	ND	0.41	3.0		µg/L	1	9/16/2022 3:27:10 PM	A91114
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/16/2022 3:27:10 PM	A91114
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/16/2022 3:27:10 PM	A91114
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/16/2022 3:27:10 PM	A91114
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/16/2022 3:27:10 PM	A91114
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/16/2022 3:27:10 PM	A91114
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/16/2022 3:27:10 PM	A91114
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/16/2022 3:27:10 PM	A91114
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/16/2022 3:27:10 PM	A91114
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/16/2022 3:27:10 PM	A91114
Styrene	ND	0.14	1.0		µg/L	1	9/16/2022 3:27:10 PM	A91114
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/16/2022 3:27:10 PM	A91114
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/16/2022 3:27:10 PM	A91114
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/16/2022 3:27:10 PM	A91114
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/16/2022 3:27:10 PM	A91114
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/16/2022 3:27:10 PM	A91114
Surr: 1,2-Dichloroethane-d4	103	0	70-130		%Rec	1	9/16/2022 3:27:10 PM	A91114
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	9/16/2022 3:27:10 PM	A91114
Surr: Dibromofluoromethane	104	0	70-130		%Rec	1	9/16/2022 3:27:10 PM	A91114
Surr: Toluene-d8	99.3	0	70-130		%Rec	1	9/16/2022 3:27:10 PM	A91114

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209816**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-15-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/15/2022 8:15:00 AM
Lab ID: 2209816-001B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	9/22/2022 3:30:20 PM	70321

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209816**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-15-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/15/2022 8:15:00 AM
Lab ID: 2209816-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.021	0.016	0.064	J	mg/L	1	9/26/2022 4:06:24 PM	70323
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	9/26/2022 4:06:24 PM	70323
Surr: DNOP	87.0	0	42.2-138		%Rec	1	9/26/2022 4:06:24 PM	70323
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	9/28/2022 7:06:21 PM	70290
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/28/2022 7:06:21 PM	70290
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	9/28/2022 7:06:21 PM	70290
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/28/2022 7:06:21 PM	70290
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/28/2022 7:06:21 PM	70290
Diethyl phthalate	ND	6.0	10		µg/L	1	9/28/2022 7:06:21 PM	70290
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/28/2022 7:06:21 PM	70290
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	9/28/2022 7:06:21 PM	70290
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/28/2022 7:06:21 PM	70290
2-Methylphenol	ND	5.0	10		µg/L	1	9/28/2022 7:06:21 PM	70290
3+4-Methylphenol	ND	5.1	10		µg/L	1	9/28/2022 7:06:21 PM	70290
Phenol	ND	18	20		µg/L	1	9/28/2022 7:06:21 PM	70290
Pyridine	ND	14	40		µg/L	1	9/28/2022 7:06:21 PM	70290
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/28/2022 7:06:21 PM	70290
Surr: 2-Fluorophenol	55.3	0	15-84.5		%Rec	1	9/28/2022 7:06:21 PM	70290
Surr: Phenol-d5	41.8	0	15-67		%Rec	1	9/28/2022 7:06:21 PM	70290
Surr: 2,4,6-Tribromophenol	65.5	0	15-108		%Rec	1	9/28/2022 7:06:21 PM	70290
Surr: Nitrobenzene-d5	67.0	0	16.8-112		%Rec	1	9/28/2022 7:06:21 PM	70290
Surr: 2-Fluorobiphenyl	66.1	0	15-101		%Rec	1	9/28/2022 7:06:21 PM	70290
Surr: 4-Terphenyl-d14	82.1	0	34.4-134		%Rec	1	9/28/2022 7:06:21 PM	70290
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	9/26/2022 11:03:00 PM	70290
Naphthalene	ND	0.20	0.30		µg/L	1	9/26/2022 11:03:00 PM	70290
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	9/26/2022 11:03:00 PM	70290
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	9/26/2022 11:03:00 PM	70290
Acenaphthene	ND	0.14	0.30		µg/L	1	9/26/2022 11:03:00 PM	70290
Fluorene	ND	0.095	0.30		µg/L	1	9/26/2022 11:03:00 PM	70290
Phenanthrene	ND	0.16	0.30		µg/L	1	9/26/2022 11:03:00 PM	70290
Anthracene	ND	0.14	0.30		µg/L	1	9/26/2022 11:03:00 PM	70290
Fluoranthene	ND	0.14	0.30		µg/L	1	9/26/2022 11:03:00 PM	70290
Pyrene	ND	0.32	1.0		µg/L	1	9/26/2022 11:03:00 PM	70290
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/26/2022 11:03:00 PM	70290
Chrysene	ND	0.25	0.30		µg/L	1	9/26/2022 11:03:00 PM	70290
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/26/2022 11:03:00 PM	70290
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/26/2022 11:03:00 PM	70290

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209816**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-15-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/15/2022 8:15:00 AM
Lab ID: 2209816-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	63.7	0	31.6-100		%Rec	1	9/26/2022 11:03:00 PM	70290
Surr: 2-Fluorobiphenyl	60.5	0	26.7-90.1		%Rec	1	9/26/2022 11:03:00 PM	70290
Surr: 4-Terphenyl-d14	70.0	0	72.3-147	S	%Rec	1	9/26/2022 11:03:00 PM	70290

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209816**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-15-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/15/2022 8:15:00 AM
Lab ID: 2209816-001D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	ND	0.0016	0.0030		mg/L	1	9/21/2022 11:52:09 AM	70299
Beryllium	ND	0.00088	0.0020		mg/L	1	9/21/2022 11:52:09 AM	70299
Cadmium	ND	0.0018	0.0020		mg/L	1	9/21/2022 11:52:09 AM	70299
Chromium	ND	0.0020	0.0060		mg/L	1	9/21/2022 11:52:09 AM	70299
Cobalt	ND	0.0035	0.0060		mg/L	1	9/21/2022 11:52:09 AM	70299
Nickel	ND	0.0053	0.010		mg/L	1	9/21/2022 11:52:09 AM	70299
Silver	ND	0.0018	0.0050		mg/L	1	9/21/2022 3:20:35 PM	70299
Vanadium	ND	0.0035	0.050		mg/L	1	9/21/2022 11:52:09 AM	70299
Zinc	ND	0.0039	0.010		mg/L	1	9/21/2022 11:52:09 AM	70299
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/21/2022 11:13:56 AM	70299
Arsenic	ND	0.00013	0.0010		mg/L	1	9/21/2022 11:13:56 AM	70299
Lead	ND	0.000061	0.00050		mg/L	1	9/21/2022 11:13:56 AM	70299
Selenium	ND	0.00037	0.0010		mg/L	1	9/21/2022 11:13:56 AM	70299
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/21/2022 2:48:47 PM	70307

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209816**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-15-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/15/2022 8:15:00 AM
Lab ID: 2209816-001E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	ND	0.0011	0.0020		mg/L	1	9/27/2022 4:28:39 PM	C91347
Beryllium	ND	0.00088	0.0020		mg/L	1	9/27/2022 4:28:39 PM	C91347
Cadmium	ND	0.00098	0.0020		mg/L	1	9/27/2022 4:28:39 PM	C91347
Chromium	ND	0.0020	0.0060		mg/L	1	9/27/2022 4:28:39 PM	C91347
Cobalt	ND	0.0024	0.0060		mg/L	1	9/27/2022 4:28:39 PM	C91347
Nickel	ND	0.0033	0.010		mg/L	1	9/27/2022 4:28:39 PM	C91347
Silver	ND	0.0013	0.0050		mg/L	1	9/28/2022 1:46:23 PM	A91392
Vanadium	ND	0.0017	0.050		mg/L	1	9/27/2022 4:28:39 PM	C91347
Zinc	0.0066	0.0032	0.010	J	mg/L	1	9/27/2022 4:28:39 PM	C91347
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/19/2022 11:58:51 AM	A91132
Arsenic	ND	0.00012	0.0010		mg/L	1	9/19/2022 11:58:51 AM	A91132
Lead	ND	0.000057	0.00050		mg/L	1	9/19/2022 11:58:51 AM	A91132
Selenium	ND	0.00034	0.0010		mg/L	1	9/19/2022 11:58:51 AM	A91132
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/21/2022 2:50:54 PM	70307

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209816**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-16
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/15/2022 8:45:00 AM
Lab ID: 2209816-002A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.93	0.045	0.25		mg/L	5	9/19/2022 11:51:00 AM	C91131
Surr: BFB	110	0	70-130		%Rec	5	9/19/2022 11:51:00 AM	C91131
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	400	1.1	5.0		µg/L	5	9/19/2022 3:45:57 PM	R91137
Toluene	1.4	1.0	5.0	J	µg/L	5	9/19/2022 3:45:57 PM	R91137
Ethylbenzene	9.1	1.1	5.0		µg/L	5	9/19/2022 3:45:57 PM	R91137
Methyl tert-butyl ether (MTBE)	6.6	2.0	5.0		µg/L	5	9/19/2022 3:45:57 PM	R91137
1,2,4-Trimethylbenzene	12	0.61	5.0		µg/L	5	9/19/2022 3:45:57 PM	R91137
1,3,5-Trimethylbenzene	ND	0.91	5.0		µg/L	5	9/19/2022 3:45:57 PM	R91137
1,2-Dichloroethane (EDC)	ND	1.3	5.0		µg/L	5	9/19/2022 3:45:57 PM	R91137
Acetone	ND	13	50		µg/L	5	9/19/2022 3:45:57 PM	R91137
Bromomethane	ND	4.3	15		µg/L	5	9/19/2022 3:45:57 PM	R91137
2-Butanone	ND	10	50		µg/L	5	9/19/2022 3:45:57 PM	R91137
Carbon disulfide	ND	3.0	50		µg/L	5	9/19/2022 3:45:57 PM	R91137
Chlorobenzene	ND	0.78	5.0		µg/L	5	9/19/2022 3:45:57 PM	R91137
Chloroform	ND	0.67	5.0		µg/L	5	9/19/2022 3:45:57 PM	R91137
Chloromethane	ND	2.1	15		µg/L	5	9/19/2022 3:45:57 PM	R91137
cis-1,2-DCE	ND	1.9	5.0		µg/L	5	9/19/2022 3:45:57 PM	R91137
1,1-Dichloroethane	17	1.4	5.0		µg/L	5	9/19/2022 3:45:57 PM	R91137
1,1-Dichloroethene	ND	1.0	5.0		µg/L	5	9/19/2022 3:45:57 PM	R91137
Isopropylbenzene	1.7	0.91	5.0	J	µg/L	5	9/19/2022 3:45:57 PM	R91137
4-Isopropyltoluene	ND	1.0	5.0		µg/L	5	9/19/2022 3:45:57 PM	R91137
Methylene Chloride	ND	2.5	15		µg/L	5	9/19/2022 3:45:57 PM	R91137
n-Butylbenzene	ND	1.3	15		µg/L	5	9/19/2022 3:45:57 PM	R91137
n-Propylbenzene	1.4	0.91	5.0	J	µg/L	5	9/19/2022 3:45:57 PM	R91137
sec-Butylbenzene	ND	0.72	5.0		µg/L	5	9/19/2022 3:45:57 PM	R91137
Styrene	ND	0.68	5.0		µg/L	5	9/19/2022 3:45:57 PM	R91137
Tetrachloroethene (PCE)	ND	1.8	5.0		µg/L	5	9/19/2022 3:45:57 PM	R91137
1,1,1-Trichloroethane	ND	1.5	5.0		µg/L	5	9/19/2022 3:45:57 PM	R91137
Trichloroethene (TCE)	ND	1.0	5.0		µg/L	5	9/19/2022 3:45:57 PM	R91137
Vinyl chloride	2.0	1.6	5.0	J	µg/L	5	9/19/2022 3:45:57 PM	R91137
Xylenes, Total	5.6	1.9	7.5	J	µg/L	5	9/19/2022 3:45:57 PM	R91137
tert-Butyl alcohol	ND	78	120		µg/L	5	9/19/2022 3:45:57 PM	R91137
Surr: 1,2-Dichloroethane-d4	107	0	70-130		%Rec	5	9/19/2022 3:45:57 PM	R91137
Surr: 4-Bromofluorobenzene	96.6	0	70-130		%Rec	5	9/19/2022 3:45:57 PM	R91137
Surr: Dibromofluoromethane	110	0	70-130		%Rec	5	9/19/2022 3:45:57 PM	R91137
Surr: Toluene-d8	96.6	0	70-130		%Rec	5	9/19/2022 3:45:57 PM	R91137

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209816**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-16
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/15/2022 8:45:00 AM
Lab ID: 2209816-002B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0096		µg/L	1	9/22/2022 3:45:24 PM	70321

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209816**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-16
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/15/2022 8:45:00 AM
Lab ID: 2209816-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	9/28/2022 7:48:40 PM	70290
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/28/2022 7:48:40 PM	70290
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	9/28/2022 7:48:40 PM	70290
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/28/2022 7:48:40 PM	70290
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/28/2022 7:48:40 PM	70290
Diethyl phthalate	ND	6.0	10		µg/L	1	9/28/2022 7:48:40 PM	70290
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/28/2022 7:48:40 PM	70290
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	9/28/2022 7:48:40 PM	70290
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/28/2022 7:48:40 PM	70290
2-Methylphenol	ND	5.0	10		µg/L	1	9/28/2022 7:48:40 PM	70290
3+4-Methylphenol	ND	5.1	10		µg/L	1	9/28/2022 7:48:40 PM	70290
Phenol	ND	18	20		µg/L	1	9/28/2022 7:48:40 PM	70290
Pyridine	ND	14	40		µg/L	1	9/28/2022 7:48:40 PM	70290
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/28/2022 7:48:40 PM	70290
Surr: 2-Fluorophenol	45.9	0	15-84.5		%Rec	1	9/28/2022 7:48:40 PM	70290
Surr: Phenol-d5	34.9	0	15-67		%Rec	1	9/28/2022 7:48:40 PM	70290
Surr: 2,4,6-Tribromophenol	58.4	0	15-108		%Rec	1	9/28/2022 7:48:40 PM	70290
Surr: Nitrobenzene-d5	62.8	0	16.8-112		%Rec	1	9/28/2022 7:48:40 PM	70290
Surr: 2-Fluorobiphenyl	63.3	0	15-101		%Rec	1	9/28/2022 7:48:40 PM	70290
Surr: 4-Terphenyl-d14	71.9	0	34.4-134		%Rec	1	9/28/2022 7:48:40 PM	70290
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	1.4	0.11	1.0		µg/L	1	9/26/2022 11:52:00 PM	70290
Naphthalene	1.3	0.20	0.30		µg/L	1	9/26/2022 11:52:00 PM	70290
1-Methylnaphthalene	0.86	0.15	0.30		µg/L	1	9/26/2022 11:52:00 PM	70290
2-Methylnaphthalene	0.16	0.14	0.30	J	µg/L	1	9/26/2022 11:52:00 PM	70290
Acenaphthene	ND	0.14	0.30		µg/L	1	9/26/2022 11:52:00 PM	70290
Fluorene	ND	0.095	0.30		µg/L	1	9/26/2022 11:52:00 PM	70290
Phenanthrene	ND	0.16	0.30		µg/L	1	9/26/2022 11:52:00 PM	70290
Anthracene	ND	0.14	0.30		µg/L	1	9/26/2022 11:52:00 PM	70290
Fluoranthene	ND	0.14	0.30		µg/L	1	9/26/2022 11:52:00 PM	70290
Pyrene	ND	0.32	1.0		µg/L	1	9/26/2022 11:52:00 PM	70290
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/26/2022 11:52:00 PM	70290
Chrysene	ND	0.25	0.30		µg/L	1	9/26/2022 11:52:00 PM	70290
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/26/2022 11:52:00 PM	70290
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/26/2022 11:52:00 PM	70290
Surr: Nitrobenzene-d5	57.1	0	31.6-100		%Rec	1	9/26/2022 11:52:00 PM	70290
Surr: 2-Fluorobiphenyl	53.7	0	26.7-90.1		%Rec	1	9/26/2022 11:52:00 PM	70290
Surr: 4-Terphenyl-d14	53.5	0	72.3-147	S	%Rec	1	9/26/2022 11:52:00 PM	70290

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209816**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-16
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/15/2022 8:45:00 AM
Lab ID: 2209816-002D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	6.3	0.016	0.030	*	mg/L	10	9/23/2022 11:08:58 AM	70299
Beryllium	ND	0.00088	0.0020		mg/L	1	9/21/2022 12:00:19 PM	70299
Cadmium	ND	0.0018	0.0020		mg/L	1	9/21/2022 12:00:19 PM	70299
Chromium	0.062	0.0020	0.0060		mg/L	1	9/21/2022 12:00:19 PM	70299
Cobalt	0.012	0.0035	0.0060		mg/L	1	9/21/2022 12:00:19 PM	70299
Iron	49	1.9	5.0	*	mg/L	100	9/27/2022 12:05:16 PM	70299
Manganese	1.7	0.0029	0.010	*	mg/L	5	9/21/2022 12:01:34 PM	70299
Nickel	0.039	0.0053	0.010		mg/L	1	9/21/2022 12:00:19 PM	70299
Silver	ND	0.0018	0.0050		mg/L	1	9/21/2022 3:22:15 PM	70299
Vanadium	0.10	0.0035	0.050		mg/L	1	9/21/2022 12:00:19 PM	70299
Zinc	0.33	0.0039	0.010		mg/L	1	9/21/2022 12:00:19 PM	70299
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	0.00049	0.00044	0.0010	J	mg/L	1	9/21/2022 11:16:23 AM	70299
Arsenic	0.0093	0.00013	0.0010		mg/L	1	9/21/2022 11:16:23 AM	70299
Lead	0.052	0.00031	0.0025	*	mg/L	5	9/21/2022 12:30:14 PM	70299
Selenium	0.0092	0.00037	0.0010		mg/L	1	9/21/2022 11:16:23 AM	70299
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00092	0.000091	0.00020		mg/L	1	9/21/2022 2:53:00 PM	70307

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209816**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-16
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/15/2022 8:45:00 AM
Lab ID: 2209816-002E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.28	0.0011	0.0020		mg/L	1	9/27/2022 4:33:03 PM	C91347
Beryllium	ND	0.00088	0.0020		mg/L	1	9/27/2022 4:33:03 PM	C91347
Cadmium	ND	0.00098	0.0020		mg/L	1	9/27/2022 4:33:03 PM	C91347
Chromium	ND	0.0020	0.0060		mg/L	1	9/27/2022 4:33:03 PM	C91347
Cobalt	ND	0.0024	0.0060		mg/L	1	9/27/2022 4:33:03 PM	C91347
Iron	0.33	0.010	0.020	*	mg/L	1	9/27/2022 4:33:03 PM	C91347
Nickel	0.0075	0.0033	0.010	J	mg/L	1	9/27/2022 4:33:03 PM	C91347
Silver	ND	0.0013	0.0050		mg/L	1	9/28/2022 1:52:49 PM	A91392
Vanadium	0.0042	0.0017	0.050	J	mg/L	1	9/27/2022 4:33:03 PM	C91347
Zinc	0.017	0.0032	0.010		mg/L	1	9/27/2022 4:33:03 PM	C91347
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	0.00060	0.00044	0.0010	J	mg/L	1	9/19/2022 12:01:32 PM	A91132
Arsenic	0.0011	0.00012	0.0010		mg/L	1	9/19/2022 12:01:32 PM	A91132
Lead	0.00068	0.000057	0.00050		mg/L	1	9/19/2022 12:01:32 PM	A91132
Selenium	ND	0.00034	0.0010		mg/L	1	9/19/2022 12:01:32 PM	A91132
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/21/2022 2:55:05 PM	70307

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209816**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-16
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/15/2022 8:45:00 AM
Lab ID: 2209816-002G
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JTT**	
Chloride	80	1.2	2.5		mg/L	5	9/16/2022 3:36:15 PM	R91119
Nitrogen, Nitrite (As N)	ND	0.057	0.50		mg/L	5	9/16/2022 3:36:15 PM	R91119
Nitrogen, Nitrate (As N)	0.59	0.10	0.50		mg/L	5	9/16/2022 3:36:15 PM	R91119
Sulfate	28	1.2	2.5		mg/L	5	9/16/2022 3:36:15 PM	R91119

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209816**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-12A
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/15/2022 9:30:00 AM
Lab ID: 2209816-003A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	3.6	0.045	0.25		mg/L	5	9/16/2022 7:28:00 PM	B91113
Surr: BFB	158	0	70-130	S	%Rec	5	9/16/2022 7:28:00 PM	B91113
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	1100	11	50		µg/L	50	9/19/2022 4:13:02 PM	R91137
Toluene	2.6	0.20	1.0		µg/L	1	9/16/2022 4:21:18 PM	A91114
Ethylbenzene	99	0.21	1.0		µg/L	1	9/16/2022 4:21:18 PM	A91114
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/16/2022 4:21:18 PM	A91114
1,2,4-Trimethylbenzene	26	0.12	1.0		µg/L	1	9/16/2022 4:21:18 PM	A91114
1,3,5-Trimethylbenzene	0.44	0.18	1.0	J	µg/L	1	9/16/2022 4:21:18 PM	A91114
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/16/2022 4:21:18 PM	A91114
Acetone	ND	2.5	10		µg/L	1	9/16/2022 4:21:18 PM	A91114
Bromomethane	ND	0.85	3.0		µg/L	1	9/16/2022 4:21:18 PM	A91114
2-Butanone	ND	2.0	10		µg/L	1	9/16/2022 4:21:18 PM	A91114
Carbon disulfide	ND	0.59	10		µg/L	1	9/16/2022 4:21:18 PM	A91114
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/16/2022 4:21:18 PM	A91114
Chloroform	ND	0.13	1.0		µg/L	1	9/16/2022 4:21:18 PM	A91114
Chloromethane	ND	0.41	3.0		µg/L	1	9/16/2022 4:21:18 PM	A91114
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/16/2022 4:21:18 PM	A91114
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/16/2022 4:21:18 PM	A91114
1,1-Dichloroethene	0.34	0.20	1.0	J	µg/L	1	9/16/2022 4:21:18 PM	A91114
Isopropylbenzene	20	0.18	1.0		µg/L	1	9/16/2022 4:21:18 PM	A91114
4-Isopropyltoluene	2.8	0.20	1.0		µg/L	1	9/16/2022 4:21:18 PM	A91114
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/16/2022 4:21:18 PM	A91114
n-Butylbenzene	0.89	0.25	3.0	J	µg/L	1	9/16/2022 4:21:18 PM	A91114
n-Propylbenzene	7.9	0.18	1.0		µg/L	1	9/16/2022 4:21:18 PM	A91114
sec-Butylbenzene	1.8	0.14	1.0		µg/L	1	9/16/2022 4:21:18 PM	A91114
Styrene	ND	0.14	1.0		µg/L	1	9/16/2022 4:21:18 PM	A91114
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/16/2022 4:21:18 PM	A91114
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/16/2022 4:21:18 PM	A91114
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/16/2022 4:21:18 PM	A91114
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/16/2022 4:21:18 PM	A91114
Xylenes, Total	110	0.37	1.5		µg/L	1	9/16/2022 4:21:18 PM	A91114
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%Rec	1	9/16/2022 4:21:18 PM	A91114
Surr: 4-Bromofluorobenzene	108	0	70-130		%Rec	1	9/16/2022 4:21:18 PM	A91114
Surr: Dibromofluoromethane	100	0	70-130		%Rec	1	9/16/2022 4:21:18 PM	A91114
Surr: Toluene-d8	101	0	70-130		%Rec	1	9/16/2022 4:21:18 PM	A91114

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209816**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-12A
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/15/2022 9:30:00 AM
Lab ID: 2209816-003B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	9/22/2022 4:00:32 PM	70321

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209816**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-12A
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/15/2022 9:30:00 AM
Lab ID: 2209816-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	1.9	0.016	0.064		mg/L	1	9/26/2022 4:30:07 PM	70323
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	9/26/2022 4:30:07 PM	70323
Surr: DNOP	82.4	0	42.2-138		%Rec	1	9/26/2022 4:30:07 PM	70323
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	9/28/2022 8:31:01 PM	70290
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/28/2022 8:31:01 PM	70290
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	9/28/2022 8:31:01 PM	70290
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/28/2022 8:31:01 PM	70290
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/28/2022 8:31:01 PM	70290
Diethyl phthalate	ND	6.0	10		µg/L	1	9/28/2022 8:31:01 PM	70290
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/28/2022 8:31:01 PM	70290
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	9/28/2022 8:31:01 PM	70290
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/28/2022 8:31:01 PM	70290
2-Methylphenol	ND	5.0	10		µg/L	1	9/28/2022 8:31:01 PM	70290
3+4-Methylphenol	ND	5.1	10		µg/L	1	9/28/2022 8:31:01 PM	70290
Phenol	ND	18	20		µg/L	1	9/28/2022 8:31:01 PM	70290
Pyridine	ND	14	40		µg/L	1	9/28/2022 8:31:01 PM	70290
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/28/2022 8:31:01 PM	70290
Surr: 2-Fluorophenol	47.9	0	15-84.5		%Rec	1	9/28/2022 8:31:01 PM	70290
Surr: Phenol-d5	35.0	0	15-67		%Rec	1	9/28/2022 8:31:01 PM	70290
Surr: 2,4,6-Tribromophenol	67.5	0	15-108		%Rec	1	9/28/2022 8:31:01 PM	70290
Surr: Nitrobenzene-d5	65.3	0	16.8-112		%Rec	1	9/28/2022 8:31:01 PM	70290
Surr: 2-Fluorobiphenyl	65.7	0	15-101		%Rec	1	9/28/2022 8:31:01 PM	70290
Surr: 4-Terphenyl-d14	72.4	0	34.4-134		%Rec	1	9/28/2022 8:31:01 PM	70290
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	11	0.11	1.0		µg/L	1	9/27/2022 12:41:00 AM	70290
Naphthalene	3.4	0.20	0.30		µg/L	1	9/27/2022 12:41:00 AM	70290
1-Methylnaphthalene	0.78	0.15	0.30		µg/L	1	9/27/2022 12:41:00 AM	70290
2-Methylnaphthalene	0.16	0.14	0.30	J	µg/L	1	9/27/2022 12:41:00 AM	70290
Acenaphthene	ND	0.14	0.30		µg/L	1	9/27/2022 12:41:00 AM	70290
Fluorene	ND	0.095	0.30		µg/L	1	9/27/2022 12:41:00 AM	70290
Phenanthrene	ND	0.16	0.30		µg/L	1	9/27/2022 12:41:00 AM	70290
Anthracene	ND	0.14	0.30		µg/L	1	9/27/2022 12:41:00 AM	70290
Fluoranthene	ND	0.14	0.30		µg/L	1	9/27/2022 12:41:00 AM	70290
Pyrene	ND	0.32	1.0		µg/L	1	9/27/2022 12:41:00 AM	70290
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/27/2022 12:41:00 AM	70290
Chrysene	ND	0.25	0.30		µg/L	1	9/27/2022 12:41:00 AM	70290
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/27/2022 12:41:00 AM	70290
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/27/2022 12:41:00 AM	70290

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209816**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-12A
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/15/2022 9:30:00 AM
Lab ID: 2209816-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	57.4	0	31.6-100		%Rec	1	9/27/2022 12:41:00 AM	70290
Surr: 2-Fluorobiphenyl	49.4	0	26.7-90.1		%Rec	1	9/27/2022 12:41:00 AM	70290
Surr: 4-Terphenyl-d14	53.9	0	72.3-147	S	%Rec	1	9/27/2022 12:41:00 AM	70290

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209816**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-12A
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/15/2022 9:30:00 AM
Lab ID: 2209816-003D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	1.3	0.0079	0.015		mg/L	5	9/21/2022 12:04:15 PM	70299
Beryllium	ND	0.00088	0.0020		mg/L	1	9/21/2022 12:02:50 PM	70299
Cadmium	ND	0.0018	0.0020		mg/L	1	9/21/2022 12:02:50 PM	70299
Chromium	0.010	0.0020	0.0060		mg/L	1	9/21/2022 12:02:50 PM	70299
Cobalt	0.011	0.0035	0.0060		mg/L	1	9/21/2022 12:02:50 PM	70299
Nickel	0.012	0.0053	0.010		mg/L	1	9/21/2022 12:02:50 PM	70299
Silver	ND	0.0018	0.0050		mg/L	1	9/21/2022 3:23:35 PM	70299
Vanadium	0.027	0.0035	0.050	J	mg/L	1	9/21/2022 12:02:50 PM	70299
Zinc	0.0083	0.0039	0.010	J	mg/L	1	9/21/2022 12:02:50 PM	70299
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/21/2022 11:23:43 AM	70299
Arsenic	0.0097	0.00013	0.0010		mg/L	1	9/21/2022 11:23:43 AM	70299
Lead	0.012	0.000061	0.00050		mg/L	1	9/21/2022 11:23:43 AM	70299
Selenium	0.0018	0.00037	0.0010		mg/L	1	9/21/2022 11:23:43 AM	70299
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/21/2022 3:01:26 PM	70307

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209816**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-12A
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/15/2022 9:30:00 AM
Lab ID: 2209816-003E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.13	0.0011	0.0020		mg/L	1	9/27/2022 4:45:40 PM	C91347
Beryllium	ND	0.00088	0.0020		mg/L	1	9/27/2022 4:45:40 PM	C91347
Cadmium	ND	0.00098	0.0020		mg/L	1	9/27/2022 4:45:40 PM	C91347
Chromium	ND	0.0020	0.0060		mg/L	1	9/27/2022 4:45:40 PM	C91347
Cobalt	ND	0.0024	0.0060		mg/L	1	9/27/2022 4:45:40 PM	C91347
Nickel	0.0076	0.0033	0.010	J	mg/L	1	9/27/2022 4:45:40 PM	C91347
Silver	0.0020	0.0013	0.0050	J	mg/L	1	9/28/2022 1:54:59 PM	A91392
Vanadium	0.0044	0.0017	0.050	J	mg/L	1	9/27/2022 4:45:40 PM	C91347
Zinc	0.013	0.0032	0.010		mg/L	1	9/27/2022 4:45:40 PM	C91347
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/19/2022 12:04:13 PM	A91132
Arsenic	0.0064	0.00012	0.0010		mg/L	1	9/19/2022 12:04:13 PM	A91132
Lead	0.0010	0.000057	0.00050		mg/L	1	9/19/2022 12:04:13 PM	A91132
Selenium	ND	0.00034	0.0010		mg/L	1	9/19/2022 12:04:13 PM	A91132
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/21/2022 3:03:33 PM	70307

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209816**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-70
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/15/2022 9:55:00 AM
Lab ID: 2209816-004A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.39	0.0090	0.050		mg/L	1	9/16/2022 7:48:00 PM	B91113
Surr: BFB	517	0	70-130	S	%Rec	1	9/16/2022 7:48:00 PM	B91113
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	1.0	0.23	1.0		µg/L	1	9/19/2022 3:18:51 PM	R91137
Toluene	ND	0.20	1.0		µg/L	1	9/19/2022 3:18:51 PM	R91137
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/19/2022 3:18:51 PM	R91137
Methyl tert-butyl ether (MTBE)	60	0.39	1.0		µg/L	1	9/19/2022 3:18:51 PM	R91137
1,2,4-Trimethylbenzene	0.13	0.12	1.0	J	µg/L	1	9/19/2022 3:18:51 PM	R91137
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/19/2022 3:18:51 PM	R91137
1,2-Dichloroethane (EDC)	6.8	0.25	1.0		µg/L	1	9/19/2022 3:18:51 PM	R91137
Acetone	ND	2.5	10		µg/L	1	9/19/2022 3:18:51 PM	R91137
Bromomethane	ND	0.85	3.0		µg/L	1	9/19/2022 3:18:51 PM	R91137
2-Butanone	ND	2.0	10		µg/L	1	9/19/2022 3:18:51 PM	R91137
Carbon disulfide	ND	0.59	10		µg/L	1	9/19/2022 3:18:51 PM	R91137
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/19/2022 3:18:51 PM	R91137
Chloroform	ND	0.13	1.0		µg/L	1	9/19/2022 3:18:51 PM	R91137
Chloromethane	ND	0.41	3.0		µg/L	1	9/19/2022 3:18:51 PM	R91137
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/19/2022 3:18:51 PM	R91137
1,1-Dichloroethane	0.49	0.27	1.0	J	µg/L	1	9/19/2022 3:18:51 PM	R91137
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/19/2022 3:18:51 PM	R91137
Isopropylbenzene	30	0.18	1.0		µg/L	1	9/19/2022 3:18:51 PM	R91137
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/19/2022 3:18:51 PM	R91137
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/19/2022 3:18:51 PM	R91137
n-Butylbenzene	1.5	0.25	3.0	J	µg/L	1	9/19/2022 3:18:51 PM	R91137
n-Propylbenzene	1.1	0.18	1.0		µg/L	1	9/19/2022 3:18:51 PM	R91137
sec-Butylbenzene	6.5	0.14	1.0		µg/L	1	9/19/2022 3:18:51 PM	R91137
Styrene	ND	0.14	1.0		µg/L	1	9/19/2022 3:18:51 PM	R91137
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/19/2022 3:18:51 PM	R91137
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/19/2022 3:18:51 PM	R91137
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/19/2022 3:18:51 PM	R91137
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/19/2022 3:18:51 PM	R91137
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/19/2022 3:18:51 PM	R91137
Surr: 1,2-Dichloroethane-d4	117	0	70-130		%Rec	1	9/19/2022 3:18:51 PM	R91137
Surr: 4-Bromofluorobenzene	95.7	0	70-130		%Rec	1	9/19/2022 3:18:51 PM	R91137
Surr: Dibromofluoromethane	121	0	70-130		%Rec	1	9/19/2022 3:18:51 PM	R91137
Surr: Toluene-d8	99.9	0	70-130		%Rec	1	9/19/2022 3:18:51 PM	R91137

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209816**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-70
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/15/2022 9:55:00 AM
Lab ID: 2209816-004B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	9/22/2022 4:15:38 PM	70321

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209816**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-70
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/15/2022 9:55:00 AM
Lab ID: 2209816-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.94	0.016	0.064		mg/L	1	9/26/2022 4:53:51 PM	70323
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	9/26/2022 4:53:51 PM	70323
Surr: DNOP	94.2	0	42.2-138		%Rec	1	9/26/2022 4:53:51 PM	70323
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	9/28/2022 9:13:15 PM	70290
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/28/2022 9:13:15 PM	70290
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	9/28/2022 9:13:15 PM	70290
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/28/2022 9:13:15 PM	70290
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/28/2022 9:13:15 PM	70290
Diethyl phthalate	ND	6.0	10		µg/L	1	9/28/2022 9:13:15 PM	70290
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/28/2022 9:13:15 PM	70290
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	9/28/2022 9:13:15 PM	70290
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/28/2022 9:13:15 PM	70290
2-Methylphenol	ND	5.0	10		µg/L	1	9/28/2022 9:13:15 PM	70290
3+4-Methylphenol	ND	5.1	10		µg/L	1	9/28/2022 9:13:15 PM	70290
Phenol	29	18	20		µg/L	1	9/28/2022 9:13:15 PM	70290
Pyridine	ND	14	40		µg/L	1	9/28/2022 9:13:15 PM	70290
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/28/2022 9:13:15 PM	70290
Surr: 2-Fluorophenol	56.0	0	15-84.5		%Rec	1	9/28/2022 9:13:15 PM	70290
Surr: Phenol-d5	42.6	0	15-67		%Rec	1	9/28/2022 9:13:15 PM	70290
Surr: 2,4,6-Tribromophenol	69.1	0	15-108		%Rec	1	9/28/2022 9:13:15 PM	70290
Surr: Nitrobenzene-d5	67.1	0	16.8-112		%Rec	1	9/28/2022 9:13:15 PM	70290
Surr: 2-Fluorobiphenyl	67.0	0	15-101		%Rec	1	9/28/2022 9:13:15 PM	70290
Surr: 4-Terphenyl-d14	83.5	0	34.4-134		%Rec	1	9/28/2022 9:13:15 PM	70290
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	0.70	0.11	1.0	J	µg/L	1	9/27/2022 1:29:00 AM	70290
Naphthalene	1.3	0.20	0.30		µg/L	1	9/27/2022 1:29:00 AM	70290
1-Methylnaphthalene	1.0	0.15	0.30		µg/L	1	9/27/2022 1:29:00 AM	70290
2-Methylnaphthalene	0.74	0.14	0.30		µg/L	1	9/27/2022 1:29:00 AM	70290
Acenaphthene	0.18	0.14	0.30	J	µg/L	1	9/27/2022 1:29:00 AM	70290
Fluorene	ND	0.095	0.30		µg/L	1	9/27/2022 1:29:00 AM	70290
Phenanthrene	0.40	0.16	0.30		µg/L	1	9/27/2022 1:29:00 AM	70290
Anthracene	0.18	0.14	0.30	J	µg/L	1	9/27/2022 1:29:00 AM	70290
Fluoranthene	ND	0.14	0.30		µg/L	1	9/27/2022 1:29:00 AM	70290
Pyrene	ND	0.32	1.0		µg/L	1	9/27/2022 1:29:00 AM	70290
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/27/2022 1:29:00 AM	70290
Chrysene	ND	0.25	0.30		µg/L	1	9/27/2022 1:29:00 AM	70290
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/27/2022 1:29:00 AM	70290
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/27/2022 1:29:00 AM	70290

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209816**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-70
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/15/2022 9:55:00 AM
Lab ID: 2209816-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	63.3	0	31.6-100		%Rec	1	9/27/2022 1:29:00 AM	70290
Surr: 2-Fluorobiphenyl	53.5	0	26.7-90.1		%Rec	1	9/27/2022 1:29:00 AM	70290
Surr: 4-Terphenyl-d14	54.7	0	72.3-147	S	%Rec	1	9/27/2022 1:29:00 AM	70290

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209816**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-70
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/15/2022 9:55:00 AM
Lab ID: 2209816-004D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.79	0.0016	0.0030		mg/L	1	9/21/2022 12:05:44 PM	70299
Beryllium	ND	0.00088	0.0020		mg/L	1	9/21/2022 12:05:44 PM	70299
Cadmium	ND	0.0018	0.0020		mg/L	1	9/21/2022 12:05:44 PM	70299
Chromium	0.0070	0.0020	0.0060		mg/L	1	9/21/2022 12:05:44 PM	70299
Cobalt	0.0094	0.0035	0.0060		mg/L	1	9/21/2022 12:05:44 PM	70299
Nickel	0.046	0.0053	0.010		mg/L	1	9/21/2022 12:05:44 PM	70299
Silver	ND	0.0018	0.0050		mg/L	1	9/21/2022 3:25:00 PM	70299
Vanadium	0.014	0.0035	0.050	J	mg/L	1	9/21/2022 12:05:44 PM	70299
Zinc	0.0047	0.0039	0.010	J	mg/L	1	9/21/2022 12:05:44 PM	70299
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/21/2022 11:28:36 AM	70299
Arsenic	0.0028	0.00013	0.0010		mg/L	1	9/21/2022 11:28:36 AM	70299
Lead	0.0023	0.000061	0.00050		mg/L	1	9/21/2022 11:28:36 AM	70299
Selenium	0.00069	0.00037	0.0010	J	mg/L	1	9/21/2022 11:28:36 AM	70299
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/21/2022 3:05:40 PM	70307

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209816**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-70
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/15/2022 9:55:00 AM
Lab ID: 2209816-004E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.53	0.0011	0.0020		mg/L	1	9/27/2022 4:49:47 PM	C91347
Beryllium	ND	0.00088	0.0020		mg/L	1	9/27/2022 4:49:47 PM	C91347
Cadmium	0.0010	0.00098	0.0020	J	mg/L	1	9/27/2022 4:49:47 PM	C91347
Chromium	ND	0.0020	0.0060		mg/L	1	9/27/2022 4:49:47 PM	C91347
Cobalt	0.0042	0.0024	0.0060	J	mg/L	1	9/27/2022 4:49:47 PM	C91347
Nickel	0.044	0.0033	0.010		mg/L	1	9/27/2022 4:49:47 PM	C91347
Silver	ND	0.0013	0.0050		mg/L	1	9/28/2022 1:57:00 PM	A91392
Vanadium	0.0031	0.0017	0.050	J	mg/L	1	9/27/2022 4:49:47 PM	C91347
Zinc	0.011	0.0032	0.010		mg/L	1	9/27/2022 4:49:47 PM	C91347
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/19/2022 12:12:19 PM	A91132
Arsenic	0.0012	0.00012	0.0010		mg/L	1	9/19/2022 12:12:19 PM	A91132
Lead	0.00012	0.000057	0.00050	J	mg/L	1	9/19/2022 12:12:19 PM	A91132
Selenium	ND	0.00034	0.0010		mg/L	1	9/19/2022 12:12:19 PM	A91132
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/21/2022 3:07:48 PM	70307

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209816**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-57
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/15/2022 10:25:00 AM
Lab ID: 2209816-005A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	30	0.45	2.5		mg/L	50	9/16/2022 8:07:00 PM	B91113
Surr: BFB	109	0	70-130		%Rec	50	9/16/2022 8:07:00 PM	B91113
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	14000	110	500		µg/L	500	9/19/2022 4:40:05 PM	R91137
Toluene	27	10	50	J	µg/L	50	9/16/2022 5:15:28 PM	A91114
Ethylbenzene	580	11	50		µg/L	50	9/16/2022 5:15:28 PM	A91114
Methyl tert-butyl ether (MTBE)	41	20	50	J	µg/L	50	9/16/2022 5:15:28 PM	A91114
1,2,4-Trimethylbenzene	ND	6.1	50		µg/L	50	9/16/2022 5:15:28 PM	A91114
1,3,5-Trimethylbenzene	ND	9.1	50		µg/L	50	9/16/2022 5:15:28 PM	A91114
1,2-Dichloroethane (EDC)	ND	13	50		µg/L	50	9/16/2022 5:15:28 PM	A91114
Acetone	ND	130	500		µg/L	50	9/16/2022 5:15:28 PM	A91114
Bromomethane	ND	43	150		µg/L	50	9/16/2022 5:15:28 PM	A91114
2-Butanone	ND	100	500		µg/L	50	9/16/2022 5:15:28 PM	A91114
Carbon disulfide	ND	30	500		µg/L	50	9/16/2022 5:15:28 PM	A91114
Chlorobenzene	ND	7.8	50		µg/L	50	9/16/2022 5:15:28 PM	A91114
Chloroform	ND	6.7	50		µg/L	50	9/16/2022 5:15:28 PM	A91114
Chloromethane	ND	21	150		µg/L	50	9/16/2022 5:15:28 PM	A91114
cis-1,2-DCE	ND	19	50		µg/L	50	9/16/2022 5:15:28 PM	A91114
1,1-Dichloroethane	ND	14	50		µg/L	50	9/16/2022 5:15:28 PM	A91114
1,1-Dichloroethene	ND	10	50		µg/L	50	9/16/2022 5:15:28 PM	A91114
Isopropylbenzene	16	9.1	50	J	µg/L	50	9/16/2022 5:15:28 PM	A91114
4-Isopropyltoluene	ND	10	50		µg/L	50	9/16/2022 5:15:28 PM	A91114
Methylene Chloride	ND	25	150		µg/L	50	9/16/2022 5:15:28 PM	A91114
n-Butylbenzene	ND	13	150		µg/L	50	9/16/2022 5:15:28 PM	A91114
n-Propylbenzene	42	9.1	50	J	µg/L	50	9/16/2022 5:15:28 PM	A91114
sec-Butylbenzene	ND	7.2	50		µg/L	50	9/16/2022 5:15:28 PM	A91114
Styrene	ND	6.8	50		µg/L	50	9/16/2022 5:15:28 PM	A91114
Tetrachloroethene (PCE)	ND	18	50		µg/L	50	9/16/2022 5:15:28 PM	A91114
1,1,1-Trichloroethane	ND	15	50		µg/L	50	9/16/2022 5:15:28 PM	A91114
Trichloroethene (TCE)	ND	10	50		µg/L	50	9/16/2022 5:15:28 PM	A91114
Vinyl chloride	ND	16	50		µg/L	50	9/16/2022 5:15:28 PM	A91114
Xylenes, Total	100	19	75		µg/L	50	9/16/2022 5:15:28 PM	A91114
Surr: 1,2-Dichloroethane-d4	112	0	70-130		%Rec	50	9/16/2022 5:15:28 PM	A91114
Surr: 4-Bromofluorobenzene	97.2	0	70-130		%Rec	50	9/16/2022 5:15:28 PM	A91114
Surr: Dibromofluoromethane	111	0	70-130		%Rec	50	9/16/2022 5:15:28 PM	A91114
Surr: Toluene-d8	98.0	0	70-130		%Rec	50	9/16/2022 5:15:28 PM	A91114

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209816**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-57
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/15/2022 10:25:00 AM
Lab ID: 2209816-005B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	9/22/2022 4:30:42 PM	70321

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209816**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-57
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/15/2022 10:25:00 AM
Lab ID: 2209816-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	6.2	0.032	0.13		mg/L	2	9/27/2022 11:35:48 AM	70323
Motor Oil Range Organics (MRO)	ND	0.10	0.16	D	mg/L	2	9/27/2022 11:35:48 AM	70323
Surr: DNOP	100	0	42.2-138		%Rec	2	9/27/2022 11:35:48 AM	70323
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	9/28/2022 9:55:38 PM	70290
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/28/2022 9:55:38 PM	70290
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	9/28/2022 9:55:38 PM	70290
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/28/2022 9:55:38 PM	70290
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/28/2022 9:55:38 PM	70290
Diethyl phthalate	ND	6.0	10		µg/L	1	9/28/2022 9:55:38 PM	70290
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/28/2022 9:55:38 PM	70290
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	9/28/2022 9:55:38 PM	70290
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/28/2022 9:55:38 PM	70290
1-Methylnaphthalene	77	4.3	5.0		µg/L	1	9/28/2022 9:55:38 PM	70290
2-Methylnaphthalene	55	4.2	5.0		µg/L	1	9/28/2022 9:55:38 PM	70290
2-Methylphenol	ND	5.0	10		µg/L	1	9/28/2022 9:55:38 PM	70290
3+4-Methylphenol	ND	5.1	10		µg/L	1	9/28/2022 9:55:38 PM	70290
Naphthalene	100	3.2	5.0		µg/L	1	9/28/2022 9:55:38 PM	70290
Phenol	70	18	20		µg/L	1	9/28/2022 9:55:38 PM	70290
Pyridine	ND	14	40		µg/L	1	9/28/2022 9:55:38 PM	70290
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/28/2022 9:55:38 PM	70290
Surr: 2-Fluorophenol	46.9	0	15-84.5		%Rec	1	9/28/2022 9:55:38 PM	70290
Surr: Phenol-d5	37.1	0	15-67		%Rec	1	9/28/2022 9:55:38 PM	70290
Surr: 2,4,6-Tribromophenol	64.8	0	15-108		%Rec	1	9/28/2022 9:55:38 PM	70290
Surr: Nitrobenzene-d5	63.7	0	16.8-112		%Rec	1	9/28/2022 9:55:38 PM	70290
Surr: 2-Fluorobiphenyl	58.4	0	15-101		%Rec	1	9/28/2022 9:55:38 PM	70290
Surr: 4-Terphenyl-d14	73.7	0	34.4-134		%Rec	1	9/28/2022 9:55:38 PM	70290
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	0.80	0.11	1.0	J	µg/L	1	9/27/2022 2:18:00 AM	70290
Acenaphthene	2.4	0.14	0.30		µg/L	1	9/27/2022 2:18:00 AM	70290
Fluorene	3.9	0.095	0.30		µg/L	1	9/27/2022 2:18:00 AM	70290
Phenanthrene	5.1	0.16	0.30		µg/L	1	9/27/2022 2:18:00 AM	70290
Anthracene	0.20	0.14	0.30	J	µg/L	1	9/27/2022 2:18:00 AM	70290
Fluoranthene	ND	0.14	0.30		µg/L	1	9/27/2022 2:18:00 AM	70290
Pyrene	ND	0.32	1.0		µg/L	1	9/27/2022 2:18:00 AM	70290
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/27/2022 2:18:00 AM	70290
Chrysene	ND	0.25	0.30		µg/L	1	9/27/2022 2:18:00 AM	70290
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/27/2022 2:18:00 AM	70290
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/27/2022 2:18:00 AM	70290

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209816**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-57
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/15/2022 10:25:00 AM
Lab ID: 2209816-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	59.4	0	31.6-100		%Rec	1	9/27/2022 2:18:00 AM	70290
Surr: 2-Fluorobiphenyl	43.1	0	26.7-90.1		%Rec	1	9/27/2022 2:18:00 AM	70290
Surr: 4-Terphenyl-d14	51.1	0	72.3-147	S	%Rec	1	9/27/2022 2:18:00 AM	70290

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209816**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-57
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/15/2022 10:25:00 AM
Lab ID: 2209816-005D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	24	0.079	0.15	*	mg/L	50	9/27/2022 12:06:54 PM	70359
Beryllium	0.027	0.0044	0.010	*	mg/L	5	9/23/2022 12:55:14 PM	70359
Cadmium	ND	0.0088	0.010		mg/L	5	9/23/2022 12:55:14 PM	70359
Chromium	0.21	0.0098	0.030	*	mg/L	5	9/23/2022 12:55:14 PM	70359
Cobalt	0.12	0.018	0.030		mg/L	5	9/23/2022 12:55:14 PM	70359
Nickel	0.26	0.027	0.050	*	mg/L	5	9/23/2022 12:55:14 PM	70359
Silver	ND	0.0092	0.025		mg/L	5	9/23/2022 12:55:14 PM	70359
Vanadium	0.42	0.018	0.25		mg/L	5	9/23/2022 12:55:14 PM	70359
Zinc	0.33	0.019	0.050		mg/L	5	9/23/2022 12:55:14 PM	70359
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/26/2022 11:47:28 AM	70359
Arsenic	0.036	0.00013	0.0010	*	mg/L	1	9/26/2022 11:47:28 AM	70359
Lead	0.28	0.0012	0.010	*	mg/L	20	9/26/2022 12:51:01 PM	70359
Selenium	0.062	0.0074	0.020	*	mg/L	20	9/26/2022 12:51:01 PM	70359
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00029	0.000091	0.00020		mg/L	1	9/26/2022 1:46:23 PM	70391

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209816**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-57
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/15/2022 10:25:00 AM
Lab ID: 2209816-005E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	3.1	0.0056	0.010	*	mg/L	5	9/27/2022 4:56:05 PM	C91347
Beryllium	ND	0.00088	0.0020		mg/L	1	9/27/2022 4:54:06 PM	C91347
Cadmium	ND	0.00098	0.0020		mg/L	1	9/27/2022 4:54:06 PM	C91347
Chromium	ND	0.0020	0.0060		mg/L	1	9/27/2022 4:54:06 PM	C91347
Cobalt	ND	0.0024	0.0060		mg/L	1	9/27/2022 4:54:06 PM	C91347
Nickel	0.056	0.0033	0.010		mg/L	1	9/27/2022 4:54:06 PM	C91347
Silver	0.0019	0.0013	0.0050	J	mg/L	1	9/28/2022 1:59:06 PM	A91392
Vanadium	0.0039	0.0017	0.050	J	mg/L	1	9/27/2022 4:54:06 PM	C91347
Zinc	0.0098	0.0032	0.010	J	mg/L	1	9/27/2022 4:54:06 PM	C91347
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/19/2022 12:15:00 PM	A91132
Arsenic	0.0025	0.00012	0.0010		mg/L	1	9/19/2022 12:15:00 PM	A91132
Lead	ND	0.000057	0.00050		mg/L	1	9/19/2022 12:15:00 PM	A91132
Selenium	ND	0.00034	0.0010		mg/L	1	9/19/2022 12:15:00 PM	A91132
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/21/2022 3:09:57 PM	70307

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209816**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB 9-15-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/15/2022 10:25:00 AM
Lab ID: 2209816-006A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	9/19/2022 2:51:45 PM	R91137
Toluene	ND	0.20	1.0		µg/L	1	9/19/2022 2:51:45 PM	R91137
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/19/2022 2:51:45 PM	R91137
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/19/2022 2:51:45 PM	R91137
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/19/2022 2:51:45 PM	R91137
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/19/2022 2:51:45 PM	R91137
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/19/2022 2:51:45 PM	R91137
Acetone	11	2.5	10		µg/L	1	9/19/2022 2:51:45 PM	R91137
Bromomethane	ND	0.85	3.0		µg/L	1	9/19/2022 2:51:45 PM	R91137
2-Butanone	17	2.0	10		µg/L	1	9/19/2022 2:51:45 PM	R91137
Carbon disulfide	ND	0.59	10		µg/L	1	9/19/2022 2:51:45 PM	R91137
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/19/2022 2:51:45 PM	R91137
Chloroform	ND	0.13	1.0		µg/L	1	9/19/2022 2:51:45 PM	R91137
Chloromethane	ND	0.41	3.0		µg/L	1	9/19/2022 2:51:45 PM	R91137
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/19/2022 2:51:45 PM	R91137
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/19/2022 2:51:45 PM	R91137
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/19/2022 2:51:45 PM	R91137
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/19/2022 2:51:45 PM	R91137
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/19/2022 2:51:45 PM	R91137
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/19/2022 2:51:45 PM	R91137
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/19/2022 2:51:45 PM	R91137
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/19/2022 2:51:45 PM	R91137
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/19/2022 2:51:45 PM	R91137
Styrene	ND	0.14	1.0		µg/L	1	9/19/2022 2:51:45 PM	R91137
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/19/2022 2:51:45 PM	R91137
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/19/2022 2:51:45 PM	R91137
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/19/2022 2:51:45 PM	R91137
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/19/2022 2:51:45 PM	R91137
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/19/2022 2:51:45 PM	R91137
tert-Butyl alcohol	ND	16	25		µg/L	1	9/19/2022 2:51:45 PM	R91137
Surr: 1,2-Dichloroethane-d4	118	0	70-130		%Rec	1	9/19/2022 2:51:45 PM	R91137
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	9/19/2022 2:51:45 PM	R91137
Surr: Dibromofluoromethane	115	0	70-130		%Rec	1	9/19/2022 2:51:45 PM	R91137
Surr: Toluene-d8	100	0	70-130		%Rec	1	9/19/2022 2:51:45 PM	R91137

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209816**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 9-15-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/15/2022
Lab ID: 2209816-007A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.35	0.0090	0.050		mg/L	1	9/16/2022 8:27:00 PM	B91113
Surr: BFB	493	0	70-130	S	%Rec	1	9/16/2022 8:27:00 PM	B91113
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	0.99	0.23	1.0	J	µg/L	1	9/16/2022 6:09:36 PM	A91114
Toluene	ND	0.20	1.0		µg/L	1	9/16/2022 6:09:36 PM	A91114
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/16/2022 6:09:36 PM	A91114
Methyl tert-butyl ether (MTBE)	55	0.39	1.0		µg/L	1	9/16/2022 6:09:36 PM	A91114
1,2,4-Trimethylbenzene	0.15	0.12	1.0	J	µg/L	1	9/16/2022 6:09:36 PM	A91114
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/16/2022 6:09:36 PM	A91114
1,2-Dichloroethane (EDC)	5.9	0.25	1.0		µg/L	1	9/16/2022 6:09:36 PM	A91114
Acetone	ND	2.5	10		µg/L	1	9/16/2022 6:09:36 PM	A91114
Bromomethane	ND	0.85	3.0		µg/L	1	9/16/2022 6:09:36 PM	A91114
2-Butanone	ND	2.0	10		µg/L	1	9/16/2022 6:09:36 PM	A91114
Carbon disulfide	ND	0.59	10		µg/L	1	9/16/2022 6:09:36 PM	A91114
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/16/2022 6:09:36 PM	A91114
Chloroform	ND	0.13	1.0		µg/L	1	9/16/2022 6:09:36 PM	A91114
Chloromethane	ND	0.41	3.0		µg/L	1	9/16/2022 6:09:36 PM	A91114
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/16/2022 6:09:36 PM	A91114
1,1-Dichloroethane	0.47	0.27	1.0	J	µg/L	1	9/16/2022 6:09:36 PM	A91114
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/16/2022 6:09:36 PM	A91114
Isopropylbenzene	28	0.18	1.0		µg/L	1	9/16/2022 6:09:36 PM	A91114
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/16/2022 6:09:36 PM	A91114
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/16/2022 6:09:36 PM	A91114
n-Butylbenzene	1.4	0.25	3.0	J	µg/L	1	9/16/2022 6:09:36 PM	A91114
n-Propylbenzene	1.0	0.18	1.0		µg/L	1	9/16/2022 6:09:36 PM	A91114
sec-Butylbenzene	6.4	0.14	1.0		µg/L	1	9/16/2022 6:09:36 PM	A91114
Styrene	ND	0.14	1.0		µg/L	1	9/16/2022 6:09:36 PM	A91114
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/16/2022 6:09:36 PM	A91114
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/16/2022 6:09:36 PM	A91114
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/16/2022 6:09:36 PM	A91114
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/16/2022 6:09:36 PM	A91114
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/16/2022 6:09:36 PM	A91114
Surr: 1,2-Dichloroethane-d4	107	0	70-130		%Rec	1	9/16/2022 6:09:36 PM	A91114
Surr: 4-Bromofluorobenzene	94.1	0	70-130		%Rec	1	9/16/2022 6:09:36 PM	A91114
Surr: Dibromofluoromethane	112	0	70-130		%Rec	1	9/16/2022 6:09:36 PM	A91114
Surr: Toluene-d8	97.9	0	70-130		%Rec	1	9/16/2022 6:09:36 PM	A91114

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209816**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 9-15-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/15/2022
Lab ID: 2209816-007B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	9/22/2022 4:45:43 PM	70321

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209816**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 9-15-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/15/2022
Lab ID: 2209816-007C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.96	0.016	0.064		mg/L	1	9/26/2022 6:05:04 PM	70323
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	9/26/2022 6:05:04 PM	70323
Surr: DNOP	92.2	0	42.2-138		%Rec	1	9/26/2022 6:05:04 PM	70323
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	18	20		µg/L	1	9/28/2022 10:37:55 PM	70290
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	9/28/2022 10:37:55 PM	70290
Di-n-butyl phthalate	20	7.7	10		µg/L	1	9/28/2022 10:37:55 PM	70290
Di-n-octyl phthalate	ND	12	20		µg/L	1	9/28/2022 10:37:55 PM	70290
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	9/28/2022 10:37:55 PM	70290
Diethyl phthalate	ND	6.0	10		µg/L	1	9/28/2022 10:37:55 PM	70290
Dimethyl phthalate	ND	6.0	10		µg/L	1	9/28/2022 10:37:55 PM	70290
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	9/28/2022 10:37:55 PM	70290
2,4-Dinitrophenol	ND	16	20		µg/L	1	9/28/2022 10:37:55 PM	70290
2-Methylphenol	ND	5.0	10		µg/L	1	9/28/2022 10:37:55 PM	70290
3+4-Methylphenol	ND	5.1	10		µg/L	1	9/28/2022 10:37:55 PM	70290
Phenol	ND	18	20		µg/L	1	9/28/2022 10:37:55 PM	70290
Pyridine	ND	14	40		µg/L	1	9/28/2022 10:37:55 PM	70290
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	9/28/2022 10:37:55 PM	70290
Surr: 2-Fluorophenol	50.2	0	15-84.5		%Rec	1	9/28/2022 10:37:55 PM	70290
Surr: Phenol-d5	38.8	0	15-67		%Rec	1	9/28/2022 10:37:55 PM	70290
Surr: 2,4,6-Tribromophenol	63.8	0	15-108		%Rec	1	9/28/2022 10:37:55 PM	70290
Surr: Nitrobenzene-d5	64.5	0	16.8-112		%Rec	1	9/28/2022 10:37:55 PM	70290
Surr: 2-Fluorobiphenyl	64.1	0	15-101		%Rec	1	9/28/2022 10:37:55 PM	70290
Surr: 4-Terphenyl-d14	68.9	0	34.4-134		%Rec	1	9/28/2022 10:37:55 PM	70290
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	0.66	0.11	1.0	J	µg/L	1	9/27/2022 3:06:00 AM	70290
Naphthalene	ND	0.20	0.30		µg/L	1	9/27/2022 3:06:00 AM	70290
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	9/27/2022 3:06:00 AM	70290
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	9/27/2022 3:06:00 AM	70290
Acenaphthene	0.14	0.14	0.30	J	µg/L	1	9/27/2022 3:06:00 AM	70290
Fluorene	ND	0.095	0.30		µg/L	1	9/27/2022 3:06:00 AM	70290
Phenanthrene	0.34	0.16	0.30		µg/L	1	9/27/2022 3:06:00 AM	70290
Anthracene	0.20	0.14	0.30	J	µg/L	1	9/27/2022 3:06:00 AM	70290
Fluoranthene	0.20	0.14	0.30	J	µg/L	1	9/27/2022 3:06:00 AM	70290
Pyrene	0.44	0.32	1.0	J	µg/L	1	9/27/2022 3:06:00 AM	70290
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	9/27/2022 3:06:00 AM	70290
Chrysene	ND	0.25	0.30		µg/L	1	9/27/2022 3:06:00 AM	70290
Benzo(b)fluoranthene	ND	0.14	0.30		µg/L	1	9/27/2022 3:06:00 AM	70290
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	9/27/2022 3:06:00 AM	70290

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209816**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 9-15-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/15/2022
Lab ID: 2209816-007C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **TOM**	
Surr: Nitrobenzene-d5	60.7	0	31.6-100		%Rec	1	9/27/2022 3:06:00 AM	70290
Surr: 2-Fluorobiphenyl	53.2	0	26.7-90.1		%Rec	1	9/27/2022 3:06:00 AM	70290
Surr: 4-Terphenyl-d14	48.5	0	72.3-147	S	%Rec	1	9/27/2022 3:06:00 AM	70290

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209816**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 9-15-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/15/2022
Lab ID: 2209816-007D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.70	0.0016	0.0030		mg/L	1	9/21/2022 12:08:54 PM	70299
Beryllium	ND	0.00088	0.0020		mg/L	1	9/21/2022 12:08:54 PM	70299
Cadmium	ND	0.0018	0.0020		mg/L	1	9/21/2022 12:08:54 PM	70299
Chromium	0.0031	0.0020	0.0060	J	mg/L	1	9/21/2022 12:08:54 PM	70299
Cobalt	0.012	0.0035	0.0060		mg/L	1	9/21/2022 12:08:54 PM	70299
Nickel	0.044	0.0053	0.010		mg/L	1	9/21/2022 12:08:54 PM	70299
Silver	ND	0.0018	0.0050		mg/L	1	9/21/2022 3:33:53 PM	70299
Vanadium	0.0083	0.0035	0.050	J	mg/L	1	9/21/2022 12:08:54 PM	70299
Zinc	ND	0.0039	0.010		mg/L	1	9/21/2022 12:08:54 PM	70299
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/21/2022 11:35:57 AM	70299
Arsenic	0.0025	0.00013	0.0010		mg/L	1	9/21/2022 11:35:57 AM	70299
Lead	0.0016	0.000061	0.00050		mg/L	1	9/21/2022 11:35:57 AM	70299
Selenium	ND	0.00037	0.0010		mg/L	1	9/21/2022 11:35:57 AM	70299
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/21/2022 3:12:07 PM	70307

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209816**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 9-15-22
Project: 2022 GW Sampling 3rd Quarter
Collection Date: 9/15/2022
Lab ID: 2209816-007E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.55	0.0011	0.0020		mg/L	1	9/27/2022 4:58:14 PM	C91347
Beryllium	ND	0.00088	0.0020		mg/L	1	9/27/2022 4:58:14 PM	C91347
Cadmium	ND	0.00098	0.0020		mg/L	1	9/27/2022 4:58:14 PM	C91347
Chromium	ND	0.0020	0.0060		mg/L	1	9/27/2022 4:58:14 PM	C91347
Cobalt	0.0046	0.0024	0.0060	J	mg/L	1	9/27/2022 4:58:14 PM	C91347
Nickel	0.043	0.0033	0.010		mg/L	1	9/27/2022 4:58:14 PM	C91347
Silver	ND	0.0013	0.0050		mg/L	1	9/28/2022 2:07:40 PM	A91392
Vanadium	0.0025	0.0017	0.050	J	mg/L	1	9/27/2022 4:58:14 PM	C91347
Zinc	0.013	0.0032	0.010		mg/L	1	9/27/2022 4:58:14 PM	C91347
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/19/2022 12:17:42 PM	A91132
Arsenic	0.0012	0.00012	0.0010		mg/L	1	9/19/2022 12:17:42 PM	A91132
Lead	0.00013	0.000057	0.00050	J	mg/L	1	9/19/2022 12:17:42 PM	A91132
Selenium	ND	0.00034	0.0010		mg/L	1	9/19/2022 12:17:42 PM	A91132
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	9/21/2022 3:14:17 PM	70307

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209816**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 3rd Quarter
Collection Date:
Lab ID: 2209816-008A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	9/16/2022 6:36:39 PM	A91114
Toluene	ND	0.20	1.0		µg/L	1	9/16/2022 6:36:39 PM	A91114
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/16/2022 6:36:39 PM	A91114
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/16/2022 6:36:39 PM	A91114
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/16/2022 6:36:39 PM	A91114
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/16/2022 6:36:39 PM	A91114
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/16/2022 6:36:39 PM	A91114
Acetone	2.7	2.5	10	J	µg/L	1	9/16/2022 6:36:39 PM	A91114
Bromomethane	ND	0.85	3.0		µg/L	1	9/16/2022 6:36:39 PM	A91114
2-Butanone	ND	2.0	10		µg/L	1	9/16/2022 6:36:39 PM	A91114
Carbon disulfide	ND	0.59	10		µg/L	1	9/16/2022 6:36:39 PM	A91114
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/16/2022 6:36:39 PM	A91114
Chloroform	ND	0.13	1.0		µg/L	1	9/16/2022 6:36:39 PM	A91114
Chloromethane	ND	0.41	3.0		µg/L	1	9/16/2022 6:36:39 PM	A91114
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/16/2022 6:36:39 PM	A91114
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/16/2022 6:36:39 PM	A91114
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/16/2022 6:36:39 PM	A91114
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/16/2022 6:36:39 PM	A91114
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/16/2022 6:36:39 PM	A91114
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/16/2022 6:36:39 PM	A91114
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/16/2022 6:36:39 PM	A91114
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/16/2022 6:36:39 PM	A91114
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/16/2022 6:36:39 PM	A91114
Styrene	ND	0.14	1.0		µg/L	1	9/16/2022 6:36:39 PM	A91114
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/16/2022 6:36:39 PM	A91114
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/16/2022 6:36:39 PM	A91114
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/16/2022 6:36:39 PM	A91114
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/16/2022 6:36:39 PM	A91114
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/16/2022 6:36:39 PM	A91114
tert-Butyl alcohol	ND	16	25		µg/L	1	9/16/2022 6:36:39 PM	A91114
Surr: 1,2-Dichloroethane-d4	111	0	70-130		%Rec	1	9/16/2022 6:36:39 PM	A91114
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	9/16/2022 6:36:39 PM	A91114
Surr: Dibromofluoromethane	109	0	70-130		%Rec	1	9/16/2022 6:36:39 PM	A91114
Surr: Toluene-d8	95.7	0	70-130		%Rec	1	9/16/2022 6:36:39 PM	A91114

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2209816**
Date Reported: **10/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 3rd Quarter
Collection Date:
Lab ID: 2209816-008B
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	9/22/2022 5:00:44 PM	70321

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

ANALYTICAL REPORT

September 28, 2022

Revised Report

Hall Environmental Analysis Laboratory

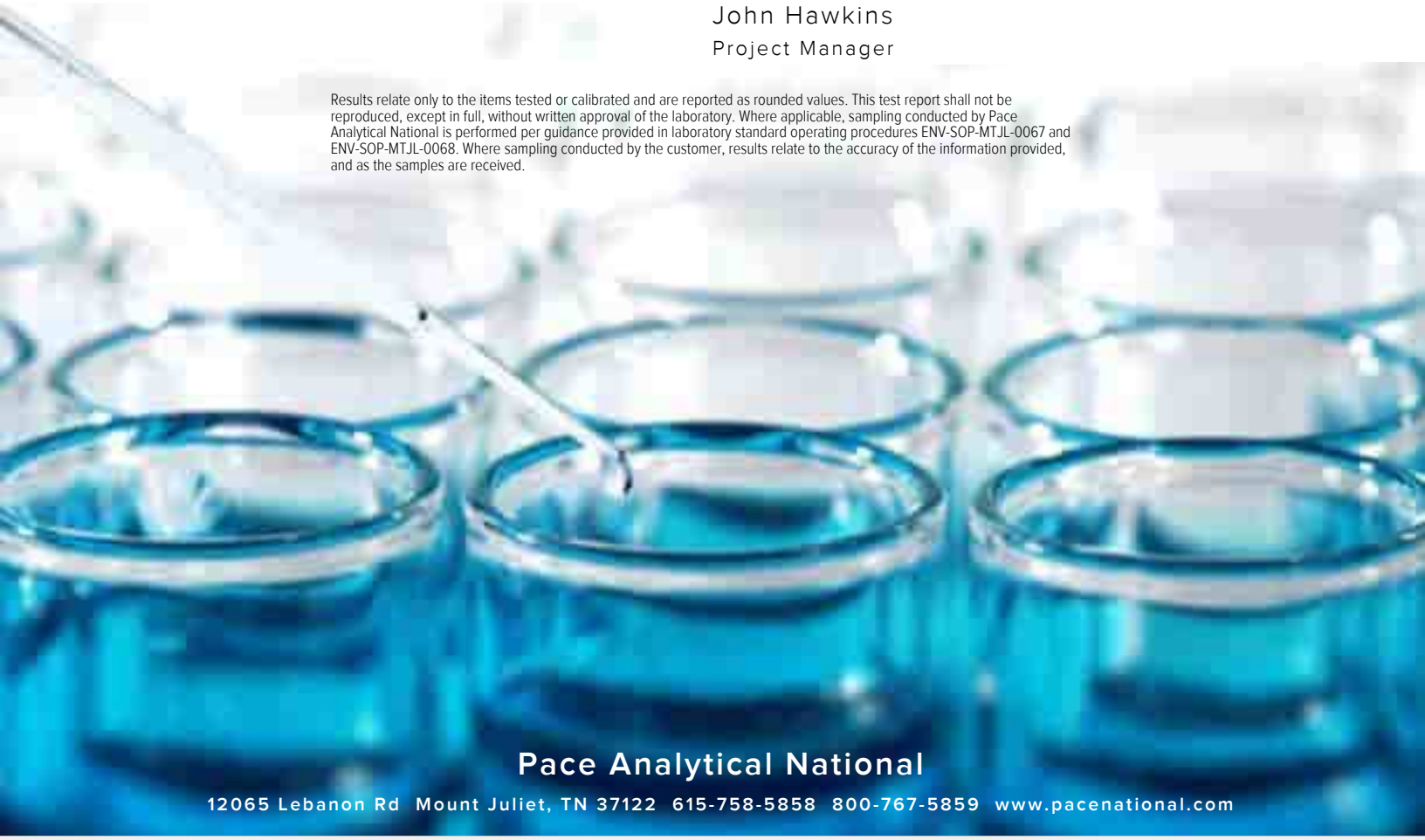
Sample Delivery Group:	L1537669
Samples Received:	09/20/2022
Project Number:	
Description:	

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By:

John Hawkins
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 4

Sr: Sample Results 5

2209816-001F EB-09-15-22 L1537669-01 5

2209816-002F MKTF-16 L1537669-02 6

2209816-003F OW-12A L1537669-03 7

2209816-004F OW-70 L1537669-04 8

2209816-005F OW-57 L1537669-05 9

2209816-007F DUP 9-15-22 L1537669-06 10

Qc: Quality Control Summary 11

Wet Chemistry by Method 4500CN E-2016 11

Gl: Glossary of Terms 12

Al: Accreditations & Locations 13

Sc: Sample Chain of Custody 14

SAMPLE SUMMARY

2209816-001F EB-09-15-22 L1537669-01 WW

Collected by	Collected date/time	Received date/time
	09/15/22 08:15	09/20/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1929558	1	09/23/22 11:57	09/23/22 21:07	LDT	Mt. Juliet, TN

2209816-002F MKTF-16 L1537669-02 WW

Collected by	Collected date/time	Received date/time
	09/15/22 08:45	09/20/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1929558	1	09/23/22 11:57	09/23/22 21:11	LDT	Mt. Juliet, TN

2209816-003F OW-12A L1537669-03 WW

Collected by	Collected date/time	Received date/time
	09/15/22 09:30	09/20/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1929558	1	09/23/22 11:57	09/23/22 21:12	LDT	Mt. Juliet, TN

2209816-004F OW-70 L1537669-04 WW

Collected by	Collected date/time	Received date/time
	09/15/22 09:55	09/20/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1929558	1	09/23/22 11:57	09/23/22 21:13	LDT	Mt. Juliet, TN

2209816-005F OW-57 L1537669-05 WW

Collected by	Collected date/time	Received date/time
	09/15/22 10:25	09/20/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1929558	1	09/23/22 11:57	09/23/22 21:14	LDT	Mt. Juliet, TN

2209816-007F DUP 9-15-22 L1537669-06 WW

Collected by	Collected date/time	Received date/time
	09/15/22 00:00	09/20/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1929558	1	09/23/22 11:57	09/23/22 21:15	LDT	Mt. Juliet, TN

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Report Revision History

Level II Report - Version 1: 09/26/22 15:48

Project Narrative

Reprint to correct sample ID

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	09/23/2022 21:07	WG1929558

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	09/23/2022 21:11	WG1929558

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	09/23/2022 21:12	WG1929558

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	09/23/2022 21:13	WG1929558

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	09/23/2022 21:14	WG1929558

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	09/23/2022 21:15	WG1929558

Method Blank (MB)

(MB) R3840867-1 09/23/22 20:46

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1537669-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1537669-01 09/23/22 21:07 • (DUP) R3840867-5 09/23/22 21:08

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

L1537686-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1537686-01 09/23/22 21:16 • (DUP) R3840867-6 09/23/22 21:17

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3840867-2 09/23/22 20:47

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.0923	92.3	87.1-120	

L1537432-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1537432-01 09/23/22 20:51 • (MS) R3840867-3 09/23/22 20:52 • (MSD) R3840867-4 09/23/22 20:53

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0917	0.0900	91.7	90.0	1	90.0-110			1.87	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
	The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Received by OCD: 4/21/2023 9:21:57 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

J190

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

SUB CONTRATOR:	Pace TN	COMPANY: PACE TN	PHONE: (800) 767-5859	FAX: (615) 758-5859	
ADDRESS:	12065 Lebanon Rd		ACCOUNT #:	EMAIL:	
CITY, STATE, ZIP:	Mt. Juliet, TN 37122				

L1537669

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS	
1	2209816-001F	EB-09-15-22	500AMBHDP F-NAOH	Groundwater	9/15/2022 8:15:00 AM	1	Total Cyanide J and MDL	-01
2	2209816-002F	MKTF-16	500AMBHDP F-NAOH	Groundwater	9/15/2022 8:45:00 AM	1	Total Cyanide J and MDL	-02
3	2209816-003F	OW-12A	500AMBHDP F-NAOH	Groundwater	9/15/2022 9:30:00 AM	1	Total Cyanide J and MDL	-03
4	2209816-004F	OW-70	500AMBHDP F-NAOH	Groundwater	9/15/2022 9:55:00 AM	1	Total Cyanide J and MDL	-04
5	2209816-005F	OW-57	500AMBHDP F-NAOH	Groundwater	9/15/2022 10:25:00 AM	1	Total Cyanide J and MDL	-05
6	2209816-007F	DUP 9-15-22	500AMBHDP F-NAOH	Groundwater	9/15/2022	1	Total Cyanide J and MDL	-06

Sample Receipt Checklist

COC Seal Present/Intact: __Y__X__N
COC Signed/Accurate: __Y__X__N
Bottles arrive intact: __X__Y__N
Correct bottles used: __X__Y__N
Sufficient volume sent: __X__Y__N
RAD Screen <0.5 mR/hr: __X__Y__N

If Applicable
VOA Zero Headspace: __Y__N
Pres.Correct/Check: __Y__N

temp: 5.7+0=5.7 trk#: 5755 8089 3973

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By:	Date: 9/16/2022	Time: 8:38 AM	Received By:	Date: 09/20	Time: 0915
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☑ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY
Temp of samples ____ °C Attempt to Cool ? ____
Comments: ____

Released to Imaging: 4/21/2023 9:40:26 AM

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209816**
04-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70299**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **70299**	RunNo: **91216**
Prep Date: **9/20/2022**	Analysis Date: **9/21/2022**	SeqNo: **3263482** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.050								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LCSLL-70299**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **70299**	RunNo: **91216**
Prep Date: **9/20/2022**	Analysis Date: **9/21/2022**	SeqNo: **3263483** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0026	0.0030	0.002000	0	129	50	150			J
Beryllium	0.0020	0.0020	0.002000	0	100	50	150			
Cadmium	0.0024	0.0020	0.002000	0	121	50	150			
Chromium	0.0074	0.0060	0.006000	0	124	50	150			
Cobalt	0.0084	0.0060	0.006000	0	141	50	150			
Iron	0.023	0.050	0.02000	0	116	50	150			J
Manganese	0.0021	0.0020	0.002000	0	104	50	150			
Nickel	0.0059	0.010	0.005000	0	117	50	150			J
Silver	0.0050	0.0050	0.005000	0	101	50	150			
Vanadium	0.011	0.050	0.01000	0	107	50	150			J
Zinc	0.011	0.010	0.01000	0	109	50	150			

Sample ID: **LCS-70299**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **70299**	RunNo: **91216**
Prep Date: **9/20/2022**	Analysis Date: **9/21/2022**	SeqNo: **3263484** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0030	0.5000	0	103	85	115			
Beryllium	0.52	0.0020	0.5000	0	105	85	115			
Cadmium	0.51	0.0020	0.5000	0	101	85	115			
Chromium	0.50	0.0060	0.5000	0	101	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.4	85	115			
Iron	0.50	0.050	0.5000	0	100	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209816**
04-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **LCS-70299**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **70299**	RunNo: **91216**
Prep Date: **9/20/2022**	Analysis Date: **9/21/2022**	SeqNo: **3263484** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	0.51	0.0020	0.5000	0	102	85	115			
Nickel	0.49	0.010	0.5000	0	97.2	85	115			
Silver	0.098	0.0050	0.1000	0	98.2	85	115			
Vanadium	0.52	0.050	0.5000	0	104	85	115			
Zinc	0.51	0.010	0.5000	0	101	85	115			

Sample ID: **MB-70299**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **70299**	RunNo: **91216**
Prep Date: **9/20/2022**	Analysis Date: **9/21/2022**	SeqNo: **3263608** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	ND	0.0050								

Sample ID: **LCSLL-70299**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **70299**	RunNo: **91216**
Prep Date: **9/20/2022**	Analysis Date: **9/21/2022**	SeqNo: **3263610** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.0055	0.0050	0.005000	0	110	50	150			

Sample ID: **LCS-70299**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **70299**	RunNo: **91216**
Prep Date: **9/20/2022**	Analysis Date: **9/21/2022**	SeqNo: **3263612** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.10	0.0050	0.1000	0	101	85	115			

Sample ID: **MB-70359**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **70359**	RunNo: **91277**
Prep Date: **9/22/2022**	Analysis Date: **9/23/2022**	SeqNo: **3266355** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209816**

04-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **LCSLL-70359**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **70359**	RunNo: **91277**
Prep Date: **9/22/2022**	Analysis Date: **9/23/2022**	SeqNo: **3266356** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0021	0.0030	0.002000	0	106	50	150			J
Beryllium	0.0019	0.0020	0.002000	0	93.0	50	150			J
Cadmium	0.0019	0.0020	0.002000	0	95.5	50	150			J
Chromium	0.0055	0.0060	0.006000	0	91.6	50	150			J
Cobalt	0.0063	0.0060	0.006000	0	105	50	150			
Silver	0.0050	0.0050	0.005000	0	99.8	50	150			J
Vanadium	0.0093	0.050	0.01000	0	92.6	50	150			J
Zinc	0.0097	0.010	0.01000	0	97.0	50	150			J

Sample ID: **LCS-70359**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **70359**	RunNo: **91277**
Prep Date: **9/22/2022**	Analysis Date: **9/23/2022**	SeqNo: **3266357** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0030	0.5000	0	96.3	85	115			
Beryllium	0.49	0.0020	0.5000	0	98.5	85	115			
Cadmium	0.48	0.0020	0.5000	0	95.4	85	115			
Chromium	0.48	0.0060	0.5000	0	97.0	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.2	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			
Vanadium	0.49	0.050	0.5000	0	97.4	85	115			
Zinc	0.47	0.010	0.5000	0	93.4	85	115			

Sample ID: **MB-70359**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **70359**	RunNo: **91312**
Prep Date: **9/22/2022**	Analysis Date: **9/26/2022**	SeqNo: **3268088** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nickel	ND	0.010								

Sample ID: **LCSLL-70359**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **70359**	RunNo: **91312**
Prep Date: **9/22/2022**	Analysis Date: **9/26/2022**	SeqNo: **3268089** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nickel	0.0044	0.010	0.005000	0	87.9	50	150			J

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209816**
04-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **LCS-70359**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **70359**	RunNo: **91312**
Prep Date: **9/22/2022**	Analysis Date: **9/26/2022**	SeqNo: **3268090** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nickel	0.48	0.010	0.5000	0	95.7	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209816**
04-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-C** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW** Batch ID: **C91347** RunNo: **91347**
Prep Date: Analysis Date: **9/27/2022** SeqNo: **3269825** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Nickel	ND	0.010								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS-C** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **C91347** RunNo: **91347**
Prep Date: Analysis Date: **9/27/2022** SeqNo: **3269826** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0014	0.0020	0.002000	0	70.7	50	150			J
Beryllium	0.0018	0.0020	0.002000	0	90.4	50	150			J
Cadmium	0.0025	0.0020	0.002000	0	124	50	150			
Chromium	0.0060	0.0060	0.006000	0	100	50	150			
Cobalt	0.0053	0.0060	0.006000	0	88.2	50	150			J
Iron	0.021	0.020	0.02000	0	104	50	150			
Nickel	0.0057	0.010	0.005000	0	114	50	150			J
Vanadium	0.010	0.050	0.01000	0	103	50	150			J
Zinc	0.010	0.010	0.01000	0	102	50	150			

Sample ID: **LCS-C** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **C91347** RunNo: **91347**
Prep Date: Analysis Date: **9/27/2022** SeqNo: **3269827** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	98.4	85	115			
Beryllium	0.50	0.0020	0.5000	0	100	85	115			
Cadmium	0.50	0.0020	0.5000	0	100	85	115			
Chromium	0.50	0.0060	0.5000	0	99.8	85	115			
Cobalt	0.48	0.0060	0.5000	0	96.8	85	115			
Iron	0.49	0.020	0.5000	0	97.8	85	115			
Nickel	0.49	0.010	0.5000	0	97.8	85	115			
Vanadium	0.50	0.050	0.5000	0	101	85	115			
Zinc	0.50	0.010	0.5000	0	99.4	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209816**
04-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-A**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A91392**	RunNo: **91392**
Prep Date:	Analysis Date: **9/28/2022**	SeqNo: **3271799** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	ND	0.0050								

Sample ID: **LLLCS-A**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A91392**	RunNo: **91392**
Prep Date:	Analysis Date: **9/28/2022**	SeqNo: **3271800** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.0048	0.0050	0.005000	0	96.1	50	150			J

Sample ID: **LCS-A**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A91392**	RunNo: **91392**
Prep Date:	Analysis Date: **9/28/2022**	SeqNo: **3271801** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.10	0.0050	0.1000	0	99.8	85	115			

Sample ID: **2209816-001EMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB-09-15-22**	Batch ID: **A91392**	RunNo: **91392**
Prep Date:	Analysis Date: **9/28/2022**	SeqNo: **3271827** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.094	0.0050	0.1000	0	94.5	70	130			

Sample ID: **2209816-001EMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB-09-15-22**	Batch ID: **A91392**	RunNo: **91392**
Prep Date:	Analysis Date: **9/28/2022**	SeqNo: **3271828** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.093	0.0050	0.1000	0	92.6	70	130	2.03	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209816**

04-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **A91132**	RunNo: **91132**
Prep Date:	Analysis Date: **9/19/2022**	SeqNo: **3260243** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **A91132**	RunNo: **91132**
Prep Date:	Analysis Date: **9/19/2022**	SeqNo: **3260244** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0010	0.0010	0.001000	0	101	50	150			
Arsenic	0.0011	0.0010	0.001000	0	105	50	150			
Lead	0.00046	0.00050	0.0005000	0	92.3	50	150			J
Selenium	0.00086	0.0010	0.001000	0	85.7	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **A91132**	RunNo: **91132**
Prep Date:	Analysis Date: **9/19/2022**	SeqNo: **3260245** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.023	0.0010	0.02500	0	90.5	85	115			
Arsenic	0.023	0.0010	0.02500	0	92.1	85	115			
Lead	0.011	0.00050	0.01250	0	89.9	85	115			
Selenium	0.022	0.0010	0.02500	0	87.9	85	115			

Sample ID: **MB-70299**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **70299**	RunNo: **91194**
Prep Date: **9/20/2022**	Analysis Date: **9/21/2022**	SeqNo: **3262810** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **MSLCSLL-70299**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **70299**	RunNo: **91194**
Prep Date: **9/20/2022**	Analysis Date: **9/21/2022**	SeqNo: **3262811** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209816**
04-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MSLCSLL-70299**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **70299**	RunNo: **91194**
Prep Date: **9/20/2022**	Analysis Date: **9/21/2022**	SeqNo: **3262811** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0011	0.0010	0.001000	0	113	50	150			
Arsenic	0.0010	0.0010	0.001000	0	103	50	150			
Lead	0.00053	0.00050	0.0005000	0	107	50	150			
Selenium	0.0010	0.0010	0.001000	0	101	50	150			

Sample ID: **MSLCS-70299**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **70299**	RunNo: **91194**
Prep Date: **9/20/2022**	Analysis Date: **9/21/2022**	SeqNo: **3262812** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	103	85	115			
Arsenic	0.025	0.0010	0.02500	0	99.7	85	115			
Lead	0.013	0.00050	0.01250	0	105	85	115			
Selenium	0.026	0.0010	0.02500	0	102	85	115			

Sample ID: **2209816-002DMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Metals**
Client ID: **MKTF-16**	Batch ID: **70299**	RunNo: **91194**
Prep Date: **9/20/2022**	Analysis Date: **9/21/2022**	SeqNo: **3262834** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.032	0.0010	0.02500	0.009342	92.0	70	130			
Selenium	0.032	0.0010	0.02500	0.009173	91.9	70	130			

Sample ID: **2209816-002DMSDL**	SampType: **MSD**	TestCode: **EPA 200.8: Metals**
Client ID: **MKTF-16**	Batch ID: **70299**	RunNo: **91194**
Prep Date: **9/20/2022**	Analysis Date: **9/21/2022**	SeqNo: **3262835** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.033	0.0010	0.02500	0.009342	94.8	70	130	2.13	20	
Selenium	0.031	0.0010	0.02500	0.009173	85.9	70	130	4.82	20	

Sample ID: **2209816-003DMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Metals**
Client ID: **OW-12A**	Batch ID: **70299**	RunNo: **91194**
Prep Date: **9/20/2022**	Analysis Date: **9/21/2022**	SeqNo: **3262837** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.021	0.0010	0.02500	0	82.5	70	130			
Arsenic	0.035	0.0010	0.02500	0.009711	101	70	130			
Lead	0.023	0.00050	0.01250	0.01171	93.2	70	130			
Selenium	0.030	0.0010	0.02500	0.001795	111	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209816**

04-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **2209816-002DMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Metals**
Client ID: **MKTF-16**	Batch ID: **70299**	RunNo: **91194**
Prep Date: **9/20/2022**	Analysis Date: **9/21/2022**	SeqNo: **3262849** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.064	0.0025	0.01250	0.05204	96.6	70	130			

Sample ID: **2209816-002DMSDL**	SampType: **MSD**	TestCode: **EPA 200.8: Metals**
Client ID: **MKTF-16**	Batch ID: **70299**	RunNo: **91194**
Prep Date: **9/20/2022**	Analysis Date: **9/21/2022**	SeqNo: **3262850** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.062	0.0025	0.01250	0.05204	77.9	70	130	3.72	20	

Sample ID: **MB-70359**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **70359**	RunNo: **91299**
Prep Date: **9/22/2022**	Analysis Date: **9/26/2022**	SeqNo: **3267421** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **MSLCSLL-70359**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **70359**	RunNo: **91299**
Prep Date: **9/22/2022**	Analysis Date: **9/26/2022**	SeqNo: **3267422** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0012	0.0010	0.001000	0	118	50	150			
Arsenic	0.00093	0.0010	0.001000	0	92.8	50	150			J
Lead	0.00055	0.00050	0.0005000	0	109	50	150			
Selenium	0.00098	0.0010	0.001000	0	97.6	50	150			J

Sample ID: **MSLCS-70359**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **70359**	RunNo: **91299**
Prep Date: **9/22/2022**	Analysis Date: **9/26/2022**	SeqNo: **3267423** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	101	85	115			
Arsenic	0.024	0.0010	0.02500	0	97.7	85	115			
Lead	0.013	0.00050	0.01250	0	104	85	115			
Selenium	0.026	0.0010	0.02500	0	103	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209816**

04-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A91132**	RunNo: **91132**
Prep Date:	Analysis Date: **9/19/2022**	SeqNo: **3260247** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A91132**	RunNo: **91132**
Prep Date:	Analysis Date: **9/19/2022**	SeqNo: **3260248** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0010	0.0010	0.001000	0	101	50	150			
Arsenic	0.0011	0.0010	0.001000	0	105	50	150			
Lead	0.00046	0.00050	0.0005000	0	92.3	50	150			J
Selenium	0.00086	0.0010	0.001000	0	85.7	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A91132**	RunNo: **91132**
Prep Date:	Analysis Date: **9/19/2022**	SeqNo: **3260249** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.023	0.0010	0.02500	0	90.5	85	115			
Arsenic	0.023	0.0010	0.02500	0	92.1	85	115			
Lead	0.011	0.00050	0.01250	0	89.9	85	115			
Selenium	0.022	0.0010	0.02500	0	87.9	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209816**
04-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70307**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **PBW**	Batch ID: **70307**	RunNo: **91203**							
Prep Date: **9/21/2022**	Analysis Date: **9/21/2022**	SeqNo: **3262985**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-70307**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **BatchQC**	Batch ID: **70307**	RunNo: **91203**							
Prep Date: **9/21/2022**	Analysis Date: **9/21/2022**	SeqNo: **3262986**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00014	0.00020	0.0001500	0	94.4	50	150			J

Sample ID: **LCS-70307**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **LCSW**	Batch ID: **70307**	RunNo: **91203**							
Prep Date: **9/21/2022**	Analysis Date: **9/21/2022**	SeqNo: **3263004**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0053	0.00020	0.005000	0	106	85	115			

Sample ID: **MB-70391**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **PBW**	Batch ID: **70391**	RunNo: **91309**							
Prep Date: **9/26/2022**	Analysis Date: **9/26/2022**	SeqNo: **3267755**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-70391**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **BatchQC**	Batch ID: **70391**	RunNo: **91309**							
Prep Date: **9/26/2022**	Analysis Date: **9/26/2022**	SeqNo: **3267756**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00013	0.00020	0.0001500	0	83.7	50	150			J

Sample ID: **LCS-70391**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **LCSW**	Batch ID: **70391**	RunNo: **91309**							
Prep Date: **9/26/2022**	Analysis Date: **9/26/2022**	SeqNo: **3267757**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0052	0.00020	0.005000	0	103	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209816**
04-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R91119**	RunNo: **91119**
Prep Date:	Analysis Date: **9/16/2022**	SeqNo: **3259698** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Sulfate	ND	0.50								

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R91119**	RunNo: **91119**
Prep Date:	Analysis Date: **9/16/2022**	SeqNo: **3259706** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.8	0.50	5.000	0	95.6	90	110			
Nitrogen, Nitrite (As N)	0.99	0.10	1.000	0	99.3	90	110			
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0	103	90	110			
Sulfate	9.9	0.50	10.00	0	99.1	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209816**

04-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **mb-70321**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **70321**	RunNo: **91221**
Prep Date: **9/22/2022**	Analysis Date: **9/22/2022**	SeqNo: **3265488** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **mb-70321**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **70321**	RunNo: **91221**
Prep Date: **9/22/2022**	Analysis Date: **9/22/2022**	SeqNo: **3265489** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **lcs-70321**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW**	Batch ID: **70321**	RunNo: **91221**
Prep Date: **9/22/2022**	Analysis Date: **9/22/2022**	SeqNo: **3265491** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.097	0.010	0.1000	0	96.8	70	130			

Sample ID: **lcsd-70321**	SampType: **LCSD**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSS02**	Batch ID: **70321**	RunNo: **91221**
Prep Date: **9/22/2022**	Analysis Date: **9/22/2022**	SeqNo: **3265492** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.094	0.010	0.1000	0	94.2	70	130	2.71	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209816**
04-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70323**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **PBW**	Batch ID: **70323**	RunNo: **91330**
Prep Date: **9/21/2022**	Analysis Date: **9/26/2022**	SeqNo: **3269062** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.021	0.064								J
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.042		0.03750		112	42.2	138			

Sample ID: **LCS-70323**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSW**	Batch ID: **70323**	RunNo: **91330**
Prep Date: **9/21/2022**	Analysis Date: **9/26/2022**	SeqNo: **3269063** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.12	0.064	0.1875	0	64.3	31.7	75.4			
Surr: DNOP	0.020		0.01875		105	42.2	138			

Sample ID: **LCSD-70323**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02**	Batch ID: **70323**	RunNo: **91330**
Prep Date: **9/21/2022**	Analysis Date: **9/26/2022**	SeqNo: **3269064** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.11	0.064	0.1875	0	57.3	31.7	75.4	11.4	20	
Surr: DNOP	0.018		0.01875		93.7	42.2	138	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209816**

04-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **mb2**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **PBW**	Batch ID: **B91113**	RunNo: **91113**							
Prep Date:	Analysis Date: **9/16/2022**	SeqNo: **3259475**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	20		20.00		100	70	130			

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **LCSW**	Batch ID: **C91131**	RunNo: **91131**							
Prep Date:	Analysis Date: **9/19/2022**	SeqNo: **3260221**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.48	0.050	0.5000	0	97.0	80	120			
Surr: BFB	44		20.00		221	70	130			S

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **PBW**	Batch ID: **C91131**	RunNo: **91131**							
Prep Date:	Analysis Date: **9/19/2022**	SeqNo: **3260222**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	21		20.00		103	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209816**
04-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **A91114**	RunNo: **91114**
Prep Date:	Analysis Date: **9/16/2022**	SeqNo: **3259529** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	103	70	130			
Toluene	21	1.0	20.00	0	103	70	130			
Chlorobenzene	20	1.0	20.00	0	102	70	130			
1,1-Dichloroethene	21	1.0	20.00	0	104	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	100	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		105	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.2	70	130			
Surr: Dibromofluoromethane	10		10.00		103	70	130			
Surr: Toluene-d8	9.5		10.00		94.7	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **A91114**	RunNo: **91114**
Prep Date:	Analysis Date: **9/16/2022**	SeqNo: **3259538** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209816**

04-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **A91114**	RunNo: **91114**
Prep Date:	Analysis Date: **9/16/2022**	SeqNo: **3259538** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		104	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.6	70	130			
Surr: Dibromofluoromethane	10		10.00		103	70	130			
Surr: Toluene-d8	9.6		10.00		95.8	70	130			

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R91137**	RunNo: **91137**
Prep Date:	Analysis Date: **9/19/2022**	SeqNo: **3260411** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	110	70	130			
Toluene	20	1.0	20.00	0	97.6	70	130			
Chlorobenzene	19	1.0	20.00	0	96.4	70	130			
1,1-Dichloroethene	20	1.0	20.00	0	102	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	102	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		109	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	11		10.00		109	70	130			
Surr: Toluene-d8	9.2		10.00		92.4	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R91137**	RunNo: **91137**
Prep Date:	Analysis Date: **9/19/2022**	SeqNo: **3260431** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209816**
04-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R91137**	RunNo: **91137**
Prep Date:	Analysis Date: **9/19/2022**	SeqNo: **3260431** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		99.7	70	130			
Surr: Dibromofluoromethane	11		10.00		107	70	130			
Surr: Toluene-d8	9.9		10.00		99.4	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2209816**
04-Oct-22

Client: Marathon
Project: 2022 GW Sampling 3rd Quarter

Sample ID: **MB-70290**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **70290**	RunNo: **91381**
Prep Date: **9/20/2022**	Analysis Date: **9/28/2022**	SeqNo: **3271742** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Anthracene	ND	10								
Benz(a)anthracene	ND	5.0								
Benzo(b)fluoranthene	ND	10								
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	10								
2,4-Dinitrophenol	ND	20								
Fluoranthene	ND	10								
Fluorene	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
1-Methylnaphthalene	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
Naphthalene	ND	5.0								
Phenanthrene	ND	10								
Phenol	ND	20								
Pyrene	ND	10								
Pyridine	ND	40								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	130		200.0		64.1	15	84.5			
Surr: Phenol-d5	99		200.0		49.6	15	67			
Surr: 2,4,6-Tribromophenol	140		200.0		70.4	15	108			
Surr: Nitrobenzene-d5	76		100.0		76.4	16.8	112			
Surr: 2-Fluorobiphenyl	71		100.0		71.4	15	101			
Surr: 4-Terphenyl-d14	88		100.0		88.0	34.4	134			

Sample ID: **LCS-70290**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **70290**	RunNo: **91381**
Prep Date: **9/20/2022**	Analysis Date: **9/28/2022**	SeqNo: **3271743** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209816**

04-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **LCS-70290**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **70290**	RunNo: **91381**
Prep Date: **9/20/2022**	Analysis Date: **9/28/2022**	SeqNo: **3271743** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	72	10	100.0	0	72.4	21.3	104			
1,4-Dichlorobenzene	64	5.0	100.0	0	64.4	15	89.8			
Phenol	98	20	200.0	0	49.1	17	61.1			
Pyrene	81	10	100.0	0	81.1	61	123			
Surr: 2-Fluorophenol	110		200.0		54.2	15	84.5			
Surr: Phenol-d5	87		200.0		43.3	15	67			
Surr: 2,4,6-Tribromophenol	130		200.0		67.2	15	108			
Surr: Nitrobenzene-d5	71		100.0		70.6	16.8	112			
Surr: 2-Fluorobiphenyl	70		100.0		69.7	15	101			
Surr: 4-Terphenyl-d14	89		100.0		88.6	34.4	134			

Sample ID: **LCSD-70290**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **70290**	RunNo: **91381**
Prep Date: **9/20/2022**	Analysis Date: **9/28/2022**	SeqNo: **3271744** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	62	10	100.0	0	61.5	21.3	104	16.3	45.3	
1,4-Dichlorobenzene	58	5.0	100.0	0	58.3	15	89.8	9.89	39.6	
Phenol	77	20	200.0	0	38.3	17	61.1	24.6	42.5	
Pyrene	81	10	100.0	0	80.7	61	123	0.468	11.8	
Surr: 2-Fluorophenol	50		200.0		24.8	15	84.5	0	0	
Surr: Phenol-d5	71		200.0		35.6	15	67	0	0	
Surr: 2,4,6-Tribromophenol	63		200.0		31.5	15	108	0	0	
Surr: Nitrobenzene-d5	67		100.0		66.9	16.8	112	0	0	
Surr: 2-Fluorobiphenyl	61		100.0		60.7	15	101	0	0	
Surr: 4-Terphenyl-d14	89		100.0		88.6	34.4	134	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209816**

04-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **mb-70290**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **70290**	RunNo: **91314**
Prep Date: **9/20/2022**	Analysis Date: **9/26/2022**	SeqNo: **3268188** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.30								
1-Methylnaphthalene	ND	0.30								
2-Methylnaphthalene	ND	0.30								
Acenaphthene	ND	0.30								
Fluorene	ND	0.30								
Phenanthrene	ND	0.30								
Anthracene	ND	0.30								
Fluoranthene	ND	0.30								
Pyrene	ND	1.0								
Benz(a)anthracene	ND	0.30								
Chrysene	ND	0.30								
Benzo(b)fluoranthene	ND	0.30								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	67		100.0		66.7	31.6	100			
Surr: 2,4,6-Tribromophenol	80		200.0		40.0	22	101			
Surr: 2-Fluorobiphenyl	62		100.0		61.7	26.7	90.1			
Surr: 4-Terphenyl-d14	68		100.0		67.6	72.3	147			S

Sample ID: **lcs-70290 lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **70290**	RunNo: **91314**
Prep Date: **9/20/2022**	Analysis Date: **9/26/2022**	SeqNo: **3268189** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.62	0.10	2.000	0	31.0	15	60.5			
Naphthalene	1.0	0.30	2.000	0	50.0	15	78.3			
1-Methylnaphthalene	0.98	0.30	2.000	0	49.0	15	79.6			
2-Methylnaphthalene	0.98	0.30	2.000	0	49.0	15	78.6			
Acenaphthene	1.1	0.30	2.000	0	53.0	15	92			
Fluorene	1.1	0.30	2.000	0	54.0	15	96			
Phenanthrene	1.1	0.30	2.000	0	55.0	21	103			
Anthracene	1.2	0.30	2.000	0	58.0	21.1	106			
Fluoranthene	1.2	0.30	2.000	0	60.0	32.8	119			
Pyrene	1.2	1.0	2.000	0	59.0	34.1	110			
Benz(a)anthracene	1.3	0.30	2.000	0	67.0	32	132			
Chrysene	1.2	0.30	2.000	0	62.0	31.3	112			
Benzo(b)fluoranthene	1.4	0.30	2.000	0	69.0	34.1	119			
Indeno(1,2,3-cd)pyrene	1.7	0.30	2.000	0	85.0	24.7	152			
Surr: Nitrobenzene-d5	62		100.0		62.4	31.6	100			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2209816**

04-Oct-22

Client: Marathon

Project: 2022 GW Sampling 3rd Quarter

Sample ID: **lcs-70290 lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **70290**	RunNo: **91314**
Prep Date: **9/20/2022**	Analysis Date: **9/26/2022**	SeqNo: **3268189** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	77		200.0		38.6	22	101			
Surr: 2-Fluorobiphenyl	59		100.0		58.8	26.7	90.1			
Surr: 4-Terphenyl-d14	64		100.0		64.2	72.3	147			S

Sample ID: **lcsd-70290 lf**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02**	Batch ID: **70290**	RunNo: **91314**
Prep Date: **9/20/2022**	Analysis Date: **9/26/2022**	SeqNo: **3268190** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.68	0.10	2.000	0	34.0	15	60.5	9.23	29.7	
Naphthalene	1.1	0.30	2.000	0	53.0	15	78.3	5.83	31.7	
1-Methylnaphthalene	1.0	0.30	2.000	0	52.0	15	79.6	5.94	31.4	
2-Methylnaphthalene	1.0	0.30	2.000	0	52.0	15	78.6	5.94	30.5	
Acenaphthene	1.1	0.30	2.000	0	55.0	15	92	3.70	30.5	
Fluorene	1.1	0.30	2.000	0	57.0	15	96	5.41	25.1	
Phenanthrene	1.1	0.30	2.000	0	57.0	21	103	3.57	26.4	
Anthracene	1.2	0.30	2.000	0	59.0	21.1	106	1.71	14.4	
Fluoranthene	1.2	0.30	2.000	0	60.0	32.8	119	0	14.8	
Pyrene	1.2	1.0	2.000	0	59.0	34.1	110	0	19.2	
Benz(a)anthracene	1.3	0.30	2.000	0	64.0	32	132	4.58	29.3	
Chrysene	1.2	0.30	2.000	0	60.0	31.3	112	3.28	19	
Benzo(b)fluoranthene	1.3	0.30	2.000	0	65.0	34.1	119	5.97	31.6	
Indeno(1,2,3-cd)pyrene	1.6	0.30	2.000	0	81.0	24.7	152	4.82	21.3	
Surr: Nitrobenzene-d5	66		100.0		65.8	31.6	100	0	0	
Surr: 2,4,6-Tribromophenol	79		200.0		39.3	22	101	0	0	
Surr: 2-Fluorobiphenyl	61		100.0		61.4	26.7	90.1	0	0	
Surr: 4-Terphenyl-d14	60		100.0		60.1	72.3	147	0	0	S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Marathon | Work Order Number: 2209816 | RcptNo: 1

Received By: Joseph Alderette 9/16/2022 7:45:00 AM

Completed By: Cheyenne Cason 9/16/2022 8:14:18 AM

Reviewed By: JA 9.16.22

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	yn 9/16/22
8. Was preservative added to bottles?	Yes ☑	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☑	No ☐	NA ☐
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: 13 5 (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted? yes
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by: yn 9/16/22

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: ____ Date: ____

By Whom: ____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: ____

Client Instructions: ____

16. Additional remarks: 0.5ml of HNO3 was added to sample 003D for pH<2. 1.0ml of HNO3 was added to sample 005D for pH<2. JN 9/16/22

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.4	Good	Yes			
2	1.3	Good	Yes			
3	0.4	Good	Yes			

MKTF-16 – No bottle for DRO JC 9/16/22

Released to Imaging: 4/21/2023 9:30:36 AM
Received by OCD: 4/21/2023 9:21:57 AM

Chain-of-Custody Record

Marathon Gallup Refinery

Address: 92 Giant Crossing Road
Jamestown, NM,87347
#: 808-640-1823
Fax#:
ackage:
ard ☐ Level 4 (Full Validation)
ation: ☐ Az Compliance
AC ☐ Other
D (Type)

Turn-Around Time:
X Standard Rush

Project Name:
2022 GW Sampling 3rd Quarter

Project #: 697-080-001

Project Manager:
Lesli Alexander/Mackensie Swift

Sampler:
On Ice: ☑ Yes ☐ No
# of Coolers: 3
Cooler Temp(including CF): See remarks

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2209816	See Analyte List	8260B: VOC	8270C: SVOC	8270C SIM: PAH, 1,4 Dioxane	8015: TPH GRO/DRO/MRO	E200.7: Metals	E200.7: Dissolved Metals	E245.1 Mercury	E504.1: EDB	E335.4: Cyanide Subbed	MNA SAMPLES	537.1: PFAS	SM 5201B: BOD	410.4: COD	SM9223B E Coli
9/15	8:15		EB-9-15-22	13		001	X	X	X	X	X	X	X	✓	X	X					
9/15	8:45		MKTF-16	18		002	X	X	X	X	X	X	X	X	X	X	X				
9/15	9:30		OW-12A	13		003	X	X	X	X	X	X	X	X	X	X					
9/15	9:55		OW-70	13		004	X	X	X	X	X	X	X	✓	X	X					
9/15	10:25		OW-57	13		005	X	X	X	X	X	X	X	X	X	X					
9/15	10:25		FB-9-15-22	3		006	X	X	X												
9/15	—		DUP-9-15-22	13		007	X	X	X	X	X	X	X	X	X	X					
9/15	—		Trip Blank	4		008	X	X	X												

Time:	Relinquished by:	Received by:	Via:	Date	Time
9/15 11:30	Hilario Trejo		Courier	9.16.22	7:45
Time:	Relinquished by:	Received by:	Via:	Date	Time

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted date will be clearly notated on the analytical report.

MKTF-02R	**VOCs:**		
MKTF-04R	TBA	19	8260B
MKTF-09			
MKTF-10	**General Chemistry:**		
MKTF-13	Chloride	19	300.0
MKTF-16	Nitrate	19	300.0
MKTF-17R	Nitrite	19	300.0
MKTF-19	Sulfate	19	300.0
MKTF-20	Sulfide	19	SM4500S2 D
MKTF-21			
MKTF-22	**Metals:**		
MKTF-24	Ferrous Iron (dissolved)	19	200.7
MKTF-25	Ferric Iron (total)	19	200.7
DUP-1	Total Manganese	19	200.7
DUP-2			
EB-1			
EB-2			
FB-1			
FB-2			
MKTF-02R	**VOCs:**		
MKTF-10	Ethene	4	RSK175
MKTF-24	Ethane	4	RSK175
MKTF-25	Methane	4	RSK175

Appendix C-4. 4th Quarter Analytical Reports

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

January 12, 2023

Emily Conkling

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX: (505) 632-3911

RE: 2022 GW Sampling 4th Quarter OrderNo.: 2212A11

Dear Emily Conkling:

Hall Environmental Analysis Laboratory received 7 sample(s) on 12/16/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **2212A11**
Date: **1/12/2023**

CLIENT: Marathon
Project: 2022 GW Sampling 4th Quarter

Analytical Notes Regarding EPA Method 8015D DRO/MRO:
The method blank had a low level detection for DRO. Samples with detections are flagged with a "B".

"S" flagged surrogates/spikes denote that the analyte recovery was outstide of the standard limits.

Analytical Report
Lab Order: **2212A11**
Date Reported: **1/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-15-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/15/2022 9:30:00 AM
Lab ID: 2212A11-001A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	12/27/2022 1:17:45 PM	B93549
Surr: BFB	94.1	0	70-130		%Rec	1	12/27/2022 1:17:45 PM	B93549
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	12/28/2022 6:11:27 PM	R93599
Toluene	ND	0.20	1.0		µg/L	1	12/28/2022 6:11:27 PM	R93599
Ethylbenzene	ND	0.21	1.0		µg/L	1	12/28/2022 6:11:27 PM	R93599
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	12/28/2022 6:11:27 PM	R93599
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	12/28/2022 6:11:27 PM	R93599
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	12/28/2022 6:11:27 PM	R93599
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	12/28/2022 6:11:27 PM	R93599
Acetone	ND	2.5	10		µg/L	1	12/28/2022 6:11:27 PM	R93599
Bromomethane	ND	0.85	3.0		µg/L	1	12/28/2022 6:11:27 PM	R93599
2-Butanone	ND	2.0	10		µg/L	1	12/28/2022 6:11:27 PM	R93599
Carbon disulfide	ND	0.59	10		µg/L	1	12/28/2022 6:11:27 PM	R93599
Chlorobenzene	ND	0.16	1.0		µg/L	1	12/28/2022 6:11:27 PM	R93599
Chloroform	ND	0.13	1.0		µg/L	1	12/28/2022 6:11:27 PM	R93599
Chloromethane	ND	0.41	3.0		µg/L	1	12/28/2022 6:11:27 PM	R93599
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	12/28/2022 6:11:27 PM	R93599
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	12/28/2022 6:11:27 PM	R93599
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	12/28/2022 6:11:27 PM	R93599
Isopropylbenzene	ND	0.18	1.0		µg/L	1	12/28/2022 6:11:27 PM	R93599
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	12/28/2022 6:11:27 PM	R93599
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/28/2022 6:11:27 PM	R93599
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/28/2022 6:11:27 PM	R93599
n-Propylbenzene	ND	0.18	1.0		µg/L	1	12/28/2022 6:11:27 PM	R93599
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	12/28/2022 6:11:27 PM	R93599
Styrene	ND	0.14	1.0		µg/L	1	12/28/2022 6:11:27 PM	R93599
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/28/2022 6:11:27 PM	R93599
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	12/28/2022 6:11:27 PM	R93599
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	12/28/2022 6:11:27 PM	R93599
Vinyl chloride	ND	0.32	1.0		µg/L	1	12/28/2022 6:11:27 PM	R93599
Xylenes, Total	ND	0.37	1.5		µg/L	1	12/28/2022 6:11:27 PM	R93599
Surr: 1,2-Dichloroethane-d4	97.7	0	70-130		%Rec	1	12/28/2022 6:11:27 PM	R93599
Surr: 4-Bromofluorobenzene	111	0	70-130		%Rec	1	12/28/2022 6:11:27 PM	R93599
Surr: Dibromofluoromethane	97.3	0	70-130		%Rec	1	12/28/2022 6:11:27 PM	R93599
Surr: Toluene-d8	109	0	70-130		%Rec	1	12/28/2022 6:11:27 PM	R93599

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212A11**
Date Reported: **1/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Project: 2022 GW Sampling 4th Quarter
Lab ID: 2212A11-001B

Client Sample ID: EB-12-15-22
Collection Date: 12/15/2022 9:30:00 AM
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0093		µg/L	1	12/27/2022 4:27:35 PM	72313

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212A11**
Date Reported: **1/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-15-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/15/2022 9:30:00 AM
Lab ID: 2212A11-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.030	0.016	0.064	JB	mg/L	1	12/22/2022 9:21:47 PM	72199
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/22/2022 9:21:47 PM	72199
Surr: DNOP	105	0	15.9-177		%Rec	1	12/22/2022 9:21:47 PM	72199
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	12/21/2022 6:31:58 PM	72138
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	12/21/2022 6:31:58 PM	72138
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	12/21/2022 6:31:58 PM	72138
Di-n-octyl phthalate	ND	12	20		µg/L	1	12/21/2022 6:31:58 PM	72138
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	12/21/2022 6:31:58 PM	72138
Diethyl phthalate	ND	6.0	10		µg/L	1	12/21/2022 6:31:58 PM	72138
Dimethyl phthalate	ND	6.0	10		µg/L	1	12/21/2022 6:31:58 PM	72138
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	12/21/2022 6:31:58 PM	72138
2,4-Dinitrophenol	ND	16	20		µg/L	1	12/21/2022 6:31:58 PM	72138
2-Methylphenol	ND	5.0	10		µg/L	1	12/21/2022 6:31:58 PM	72138
3+4-Methylphenol	ND	5.1	10		µg/L	1	12/21/2022 6:31:58 PM	72138
Phenol	ND	18	20		µg/L	1	12/21/2022 6:31:58 PM	72138
Pyridine	ND	14	40		µg/L	1	12/21/2022 6:31:58 PM	72138
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	12/21/2022 6:31:58 PM	72138
Surr: 2-Fluorophenol	40.1	0	15-84.5		%Rec	1	12/21/2022 6:31:58 PM	72138
Surr: Phenol-d5	31.6	0	15-67		%Rec	1	12/21/2022 6:31:58 PM	72138
Surr: 2,4,6-Tribromophenol	62.0	0	15-108		%Rec	1	12/21/2022 6:31:58 PM	72138
Surr: Nitrobenzene-d5	54.0	0	16.8-112		%Rec	1	12/21/2022 6:31:58 PM	72138
Surr: 2-Fluorobiphenyl	48.9	0	15-101		%Rec	1	12/21/2022 6:31:58 PM	72138
Surr: 4-Terphenyl-d14	86.3	0	34.4-134		%Rec	1	12/21/2022 6:31:58 PM	72138
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	12/21/2022 3:23:00 AM	72138
Naphthalene	ND	0.20	0.30		µg/L	1	12/21/2022 3:23:00 AM	72138
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	12/21/2022 3:23:00 AM	72138
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	12/21/2022 3:23:00 AM	72138
Acenaphthene	ND	0.14	0.30		µg/L	1	12/21/2022 3:23:00 AM	72138
Fluorene	ND	0.095	0.30		µg/L	1	12/21/2022 3:23:00 AM	72138
Phenanthrene	ND	0.16	0.30		µg/L	1	12/21/2022 3:23:00 AM	72138
Anthracene	ND	0.14	0.30		µg/L	1	12/21/2022 3:23:00 AM	72138
Fluoranthene	ND	0.14	0.30		µg/L	1	12/21/2022 3:23:00 AM	72138
Pyrene	ND	0.32	1.0		µg/L	1	12/21/2022 3:23:00 AM	72138
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	12/21/2022 3:23:00 AM	72138
Chrysene	ND	0.25	0.30		µg/L	1	12/21/2022 3:23:00 AM	72138
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	12/21/2022 3:23:00 AM	72138
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	12/21/2022 3:23:00 AM	72138

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212A11**
Date Reported: **1/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-15-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/15/2022 9:30:00 AM
Lab ID: 2212A11-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	57.8	0	15-108		%Rec	1	12/21/2022 3:23:00 AM	72138
Surr: 2-Fluorobiphenyl	52.2	0	15-107		%Rec	1	12/21/2022 3:23:00 AM	72138
Surr: 4-Terphenyl-d14	104	0	15-166		%Rec	1	12/21/2022 3:23:00 AM	72138

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212A11**
Date Reported: **1/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-15-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/15/2022 9:30:00 AM
Lab ID: 2212A11-001D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	ND	0.0016	0.0030		mg/L	1	12/21/2022 8:37:09 PM	72221
Beryllium	ND	0.00060	0.0020		mg/L	1	12/21/2022 8:37:09 PM	72221
Cadmium	ND	0.0018	0.0020		mg/L	1	12/21/2022 8:37:09 PM	72221
Chromium	ND	0.0020	0.0060		mg/L	1	12/21/2022 8:37:09 PM	72221
Cobalt	ND	0.0035	0.0060		mg/L	1	12/21/2022 8:37:09 PM	72221
Nickel	ND	0.0053	0.010		mg/L	1	12/21/2022 8:37:09 PM	72221
Silver	ND	0.0018	0.0050		mg/L	1	12/21/2022 8:37:09 PM	72221
Vanadium	ND	0.0035	0.050		mg/L	1	12/21/2022 8:37:09 PM	72221
Zinc	ND	0.0039	0.010		mg/L	1	12/21/2022 8:37:09 PM	72221
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	12/21/2022 4:39:01 PM	72221
Arsenic	ND	0.00022	0.0010		mg/L	1	12/21/2022 4:39:01 PM	72221
Lead	ND	0.00019	0.00050		mg/L	1	12/21/2022 4:39:01 PM	72221
Selenium	ND	0.00089	0.0010		mg/L	1	12/21/2022 4:39:01 PM	72221
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.000099	0.000091	0.00020	J	mg/L	1	12/23/2022 1:35:37 PM	72295

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212A11**
Date Reported: **1/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-15-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/15/2022 9:30:00 AM
Lab ID: 2212A11-001E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	ND	0.0011	0.0020		mg/L	1	12/23/2022 2:39:44 PM	C93558
Beryllium	ND	0.00059	0.0020		mg/L	1	12/23/2022 2:39:44 PM	C93558
Cadmium	ND	0.00098	0.0020		mg/L	1	12/23/2022 2:39:44 PM	C93558
Chromium	ND	0.0020	0.0060		mg/L	1	12/23/2022 2:39:44 PM	C93558
Cobalt	ND	0.0024	0.0060		mg/L	1	12/23/2022 2:39:44 PM	C93558
Nickel	ND	0.0033	0.010		mg/L	1	12/23/2022 2:39:44 PM	C93558
Silver	ND	0.0013	0.0050		mg/L	1	12/23/2022 2:39:44 PM	C93558
Vanadium	ND	0.0017	0.050		mg/L	1	12/23/2022 2:39:44 PM	C93558
Zinc	ND	0.0032	0.010		mg/L	1	12/23/2022 2:39:44 PM	C93558
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	12/27/2022 1:12:41 PM	A93556
Arsenic	ND	0.00012	0.0010		mg/L	1	12/20/2022 2:50:15 PM	A93438
Lead	ND	0.000057	0.00050		mg/L	1	12/20/2022 2:50:15 PM	A93438
Selenium	ND	0.00034	0.0010		mg/L	1	12/20/2022 2:50:15 PM	A93438
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.000097	0.000091	0.00020	J	mg/L	1	12/23/2022 1:37:46 PM	72295

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212A11**
Date Reported: **1/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-30
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/15/2022 10:00:00 AM
Lab ID: 2212A11-002A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	0.020	0.0090	0.050	J	mg/L	1	12/27/2022 1:41:09 PM	B93549
Surr: BFB	91.5	0	70-130		%Rec	1	12/27/2022 1:41:09 PM	B93549
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	12/28/2022 6:40:01 PM	R93599
Toluene	ND	0.20	1.0		µg/L	1	12/28/2022 6:40:01 PM	R93599
Ethylbenzene	ND	0.21	1.0		µg/L	1	12/28/2022 6:40:01 PM	R93599
Methyl tert-butyl ether (MTBE)	4.2	0.39	1.0		µg/L	1	12/28/2022 6:40:01 PM	R93599
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	12/28/2022 6:40:01 PM	R93599
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	12/28/2022 6:40:01 PM	R93599
1,2-Dichloroethane (EDC)	1.2	0.25	1.0		µg/L	1	12/28/2022 6:40:01 PM	R93599
Acetone	ND	2.5	10		µg/L	1	12/28/2022 6:40:01 PM	R93599
Bromomethane	ND	0.85	3.0		µg/L	1	12/28/2022 6:40:01 PM	R93599
2-Butanone	ND	2.0	10		µg/L	1	12/28/2022 6:40:01 PM	R93599
Carbon disulfide	ND	0.59	10		µg/L	1	12/28/2022 6:40:01 PM	R93599
Chlorobenzene	ND	0.16	1.0		µg/L	1	12/28/2022 6:40:01 PM	R93599
Chloroform	ND	0.13	1.0		µg/L	1	12/28/2022 6:40:01 PM	R93599
Chloromethane	ND	0.41	3.0		µg/L	1	12/28/2022 6:40:01 PM	R93599
cis-1,2-DCE	1.6	0.39	1.0		µg/L	1	12/28/2022 6:40:01 PM	R93599
1,1-Dichloroethane	24	0.27	1.0		µg/L	1	12/28/2022 6:40:01 PM	R93599
1,1-Dichloroethene	1.4	0.20	1.0		µg/L	1	12/28/2022 6:40:01 PM	R93599
Isopropylbenzene	ND	0.18	1.0		µg/L	1	12/28/2022 6:40:01 PM	R93599
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	12/28/2022 6:40:01 PM	R93599
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/28/2022 6:40:01 PM	R93599
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/28/2022 6:40:01 PM	R93599
n-Propylbenzene	ND	0.18	1.0		µg/L	1	12/28/2022 6:40:01 PM	R93599
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	12/28/2022 6:40:01 PM	R93599
Styrene	ND	0.14	1.0		µg/L	1	12/28/2022 6:40:01 PM	R93599
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/28/2022 6:40:01 PM	R93599
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	12/28/2022 6:40:01 PM	R93599
Trichloroethene (TCE)	0.95	0.20	1.0	J	µg/L	1	12/28/2022 6:40:01 PM	R93599
Vinyl chloride	ND	0.32	1.0		µg/L	1	12/28/2022 6:40:01 PM	R93599
Xylenes, Total	ND	0.37	1.5		µg/L	1	12/28/2022 6:40:01 PM	R93599
Surr: 1,2-Dichloroethane-d4	105	0	70-130		%Rec	1	12/28/2022 6:40:01 PM	R93599
Surr: 4-Bromofluorobenzene	109	0	70-130		%Rec	1	12/28/2022 6:40:01 PM	R93599
Surr: Dibromofluoromethane	98.9	0	70-130		%Rec	1	12/28/2022 6:40:01 PM	R93599
Surr: Toluene-d8	108	0	70-130		%Rec	1	12/28/2022 6:40:01 PM	R93599

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212A11**
Date Reported: **1/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Project: 2022 GW Sampling 4th Quarter
Lab ID: 2212A11-002B

Client Sample ID: MKTF-30
Collection Date: 12/15/2022 10:00:00 AM
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	12/27/2022 4:57:41 PM	72313

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212A11**
Date Reported: **1/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-30
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/15/2022 10:00:00 AM
Lab ID: 2212A11-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.33	0.016	0.064	B	mg/L	1	12/22/2022 9:45:40 PM	72199
Motor Oil Range Organics (MRO)	0.098	0.052	0.080		mg/L	1	12/22/2022 9:45:40 PM	72199
Surr: DNOP	112	0	15.9-177		%Rec	1	12/22/2022 9:45:40 PM	72199
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	12/21/2022 7:12:45 PM	72138
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	12/21/2022 7:12:45 PM	72138
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	12/21/2022 7:12:45 PM	72138
Di-n-octyl phthalate	ND	12	20		µg/L	1	12/21/2022 7:12:45 PM	72138
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	12/21/2022 7:12:45 PM	72138
Diethyl phthalate	ND	6.0	10		µg/L	1	12/21/2022 7:12:45 PM	72138
Dimethyl phthalate	ND	6.0	10		µg/L	1	12/21/2022 7:12:45 PM	72138
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	12/21/2022 7:12:45 PM	72138
2,4-Dinitrophenol	ND	16	20		µg/L	1	12/21/2022 7:12:45 PM	72138
2-Methylphenol	ND	5.0	10		µg/L	1	12/21/2022 7:12:45 PM	72138
3+4-Methylphenol	ND	5.1	10		µg/L	1	12/21/2022 7:12:45 PM	72138
Phenol	ND	18	20		µg/L	1	12/21/2022 7:12:45 PM	72138
Pyridine	ND	14	40		µg/L	1	12/21/2022 7:12:45 PM	72138
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	12/21/2022 7:12:45 PM	72138
Surr: 2-Fluorophenol	32.6	0	15-84.5		%Rec	1	12/21/2022 7:12:45 PM	72138
Surr: Phenol-d5	18.1	0	15-67		%Rec	1	12/21/2022 7:12:45 PM	72138
Surr: 2,4,6-Tribromophenol	69.7	0	15-108		%Rec	1	12/21/2022 7:12:45 PM	72138
Surr: Nitrobenzene-d5	60.8	0	16.8-112		%Rec	1	12/21/2022 7:12:45 PM	72138
Surr: 2-Fluorobiphenyl	51.8	0	15-101		%Rec	1	12/21/2022 7:12:45 PM	72138
Surr: 4-Terphenyl-d14	81.9	0	34.4-134		%Rec	1	12/21/2022 7:12:45 PM	72138
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	14	0.11	1.0		µg/L	1	12/21/2022 4:07:00 AM	72138
Naphthalene	ND	0.20	0.30		µg/L	1	12/21/2022 4:07:00 AM	72138
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	12/21/2022 4:07:00 AM	72138
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	12/21/2022 4:07:00 AM	72138
Acenaphthene	ND	0.14	0.30		µg/L	1	12/21/2022 4:07:00 AM	72138
Fluorene	ND	0.095	0.30		µg/L	1	12/21/2022 4:07:00 AM	72138
Phenanthrene	ND	0.16	0.30		µg/L	1	12/21/2022 4:07:00 AM	72138
Anthracene	ND	0.14	0.30		µg/L	1	12/21/2022 4:07:00 AM	72138
Fluoranthene	ND	0.14	0.30		µg/L	1	12/21/2022 4:07:00 AM	72138
Pyrene	ND	0.32	1.0		µg/L	1	12/21/2022 4:07:00 AM	72138
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	12/21/2022 4:07:00 AM	72138
Chrysene	ND	0.25	0.30		µg/L	1	12/21/2022 4:07:00 AM	72138
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	12/21/2022 4:07:00 AM	72138
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	12/21/2022 4:07:00 AM	72138

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212A11**
Date Reported: **1/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-30
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/15/2022 10:00:00 AM
Lab ID: 2212A11-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	54.4	0	15-108		%Rec	1	12/21/2022 4:07:00 AM	72138
Surr: 2-Fluorobiphenyl	47.0	0	15-107		%Rec	1	12/21/2022 4:07:00 AM	72138
Surr: 4-Terphenyl-d14	76.1	0	15-166		%Rec	1	12/21/2022 4:07:00 AM	72138

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212A11**
Date Reported: **1/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-30
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/15/2022 10:00:00 AM
Lab ID: 2212A11-002D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.15	0.0016	0.0030		mg/L	1	12/21/2022 8:47:37 PM	72221
Beryllium	0.00081	0.00060	0.0020	J	mg/L	1	12/21/2022 8:47:37 PM	72221
Cadmium	ND	0.0018	0.0020		mg/L	1	12/21/2022 8:47:37 PM	72221
Chromium	0.0054	0.0020	0.0060	J	mg/L	1	12/21/2022 8:47:37 PM	72221
Cobalt	ND	0.0035	0.0060		mg/L	1	12/21/2022 8:47:37 PM	72221
Nickel	0.024	0.0053	0.010		mg/L	1	12/21/2022 8:47:37 PM	72221
Silver	0.0021	0.0018	0.0050	J	mg/L	1	12/21/2022 8:47:37 PM	72221
Vanadium	0.015	0.0035	0.050	J	mg/L	1	12/21/2022 8:47:37 PM	72221
Zinc	0.0096	0.0039	0.010	J	mg/L	1	12/21/2022 8:47:37 PM	72221
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	12/21/2022 5:54:57 PM	72221
Arsenic	ND	0.0011	0.0050		mg/L	5	12/21/2022 5:54:57 PM	72221
Lead	0.0039	0.00019	0.00050		mg/L	1	12/21/2022 4:41:28 PM	72221
Selenium	ND	0.0044	0.0050		mg/L	5	12/21/2022 5:54:57 PM	72221
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/23/2022 1:39:57 PM	72295

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212A11**
Date Reported: **1/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-30
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/15/2022 10:00:00 AM
Lab ID: 2212A11-002E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.029	0.0011	0.0020		mg/L	1	12/23/2022 2:47:11 PM	C93558
Beryllium	ND	0.00059	0.0020		mg/L	1	12/23/2022 2:47:11 PM	C93558
Cadmium	ND	0.00098	0.0020		mg/L	1	12/23/2022 2:47:11 PM	C93558
Chromium	ND	0.0020	0.0060		mg/L	1	12/23/2022 2:47:11 PM	C93558
Cobalt	ND	0.0024	0.0060		mg/L	1	12/23/2022 2:47:11 PM	C93558
Nickel	0.013	0.0033	0.010		mg/L	1	12/23/2022 2:47:11 PM	C93558
Silver	0.0020	0.0013	0.0050	J	mg/L	1	12/23/2022 2:47:11 PM	C93558
Vanadium	0.0031	0.0017	0.050	J	mg/L	1	12/23/2022 2:47:11 PM	C93558
Zinc	ND	0.0032	0.010		mg/L	1	12/23/2022 2:47:11 PM	C93558
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	12/27/2022 1:22:56 PM	A93556
Arsenic	ND	0.00061	0.0050		mg/L	5	12/20/2022 5:33:50 PM	A93438
Lead	ND	0.00028	0.0025		mg/L	5	12/20/2022 5:33:50 PM	A93438
Selenium	ND	0.0017	0.0050		mg/L	5	12/20/2022 5:33:50 PM	A93438
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/23/2022 1:46:19 PM	72295

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212A11**
Date Reported: **1/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1-NW
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/15/2022 10:30:00 AM
Lab ID: 2212A11-003A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	12/27/2022 2:04:35 PM	B93549
Surr: BFB	91.4	0	70-130		%Rec	1	12/27/2022 2:04:35 PM	B93549
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	12/28/2022 8:06:07 PM	R93599
Toluene	ND	0.20	1.0		µg/L	1	12/28/2022 8:06:07 PM	R93599
Ethylbenzene	ND	0.21	1.0		µg/L	1	12/28/2022 8:06:07 PM	R93599
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	12/28/2022 8:06:07 PM	R93599
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	12/28/2022 8:06:07 PM	R93599
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	12/28/2022 8:06:07 PM	R93599
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	12/28/2022 8:06:07 PM	R93599
Acetone	ND	2.5	10		µg/L	1	12/28/2022 8:06:07 PM	R93599
Bromomethane	ND	0.85	3.0		µg/L	1	12/28/2022 8:06:07 PM	R93599
2-Butanone	ND	2.0	10		µg/L	1	12/28/2022 8:06:07 PM	R93599
Carbon disulfide	ND	0.59	10		µg/L	1	12/28/2022 8:06:07 PM	R93599
Chlorobenzene	ND	0.16	1.0		µg/L	1	12/28/2022 8:06:07 PM	R93599
Chloroform	ND	0.13	1.0		µg/L	1	12/28/2022 8:06:07 PM	R93599
Chloromethane	ND	0.41	3.0		µg/L	1	12/28/2022 8:06:07 PM	R93599
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	12/28/2022 8:06:07 PM	R93599
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	12/28/2022 8:06:07 PM	R93599
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	12/28/2022 8:06:07 PM	R93599
Isopropylbenzene	ND	0.18	1.0		µg/L	1	12/28/2022 8:06:07 PM	R93599
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	12/28/2022 8:06:07 PM	R93599
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/28/2022 8:06:07 PM	R93599
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/28/2022 8:06:07 PM	R93599
n-Propylbenzene	ND	0.18	1.0		µg/L	1	12/28/2022 8:06:07 PM	R93599
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	12/28/2022 8:06:07 PM	R93599
Styrene	ND	0.14	1.0		µg/L	1	12/28/2022 8:06:07 PM	R93599
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/28/2022 8:06:07 PM	R93599
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	12/28/2022 8:06:07 PM	R93599
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	12/28/2022 8:06:07 PM	R93599
Vinyl chloride	ND	0.32	1.0		µg/L	1	12/28/2022 8:06:07 PM	R93599
Xylenes, Total	ND	0.37	1.5		µg/L	1	12/28/2022 8:06:07 PM	R93599
Surr: 1,2-Dichloroethane-d4	102	0	70-130		%Rec	1	12/28/2022 8:06:07 PM	R93599
Surr: 4-Bromofluorobenzene	111	0	70-130		%Rec	1	12/28/2022 8:06:07 PM	R93599
Surr: Dibromofluoromethane	98.0	0	70-130		%Rec	1	12/28/2022 8:06:07 PM	R93599
Surr: Toluene-d8	108	0	70-130		%Rec	1	12/28/2022 8:06:07 PM	R93599

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212A11**
Date Reported: **1/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Project: 2022 GW Sampling 4th Quarter
Lab ID: 2212A11-003B

Client Sample ID: STP-1-NW
Collection Date: 12/15/2022 10:30:00 AM
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	12/27/2022 5:12:45 PM	72313

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212A11**
Date Reported: **1/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1-NW
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/15/2022 10:30:00 AM
Lab ID: 2212A11-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.20	0.016	0.064	B	mg/L	1	12/22/2022 10:09:31 P	72199
Motor Oil Range Organics (MRO)	0.074	0.052	0.080	J	mg/L	1	12/22/2022 10:09:31 P	72199
Surr: DNOP	115	0	15.9-177		%Rec	1	12/22/2022 10:09:31 P	72199
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	12/21/2022 7:54:18 PM	72138
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	12/21/2022 7:54:18 PM	72138
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	12/21/2022 7:54:18 PM	72138
Di-n-octyl phthalate	ND	12	20		µg/L	1	12/21/2022 7:54:18 PM	72138
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	12/21/2022 7:54:18 PM	72138
Diethyl phthalate	ND	6.0	10		µg/L	1	12/21/2022 7:54:18 PM	72138
Dimethyl phthalate	ND	6.0	10		µg/L	1	12/21/2022 7:54:18 PM	72138
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	12/21/2022 7:54:18 PM	72138
2,4-Dinitrophenol	ND	16	20		µg/L	1	12/21/2022 7:54:18 PM	72138
2-Methylphenol	ND	5.0	10		µg/L	1	12/21/2022 7:54:18 PM	72138
3+4-Methylphenol	ND	5.1	10		µg/L	1	12/21/2022 7:54:18 PM	72138
Phenol	ND	18	20		µg/L	1	12/21/2022 7:54:18 PM	72138
Pyridine	ND	14	40		µg/L	1	12/21/2022 7:54:18 PM	72138
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	12/21/2022 7:54:18 PM	72138
Surr: 2-Fluorophenol	41.2	0	15-84.5		%Rec	1	12/21/2022 7:54:18 PM	72138
Surr: Phenol-d5	33.2	0	15-67		%Rec	1	12/21/2022 7:54:18 PM	72138
Surr: 2,4,6-Tribromophenol	66.1	0	15-108		%Rec	1	12/21/2022 7:54:18 PM	72138
Surr: Nitrobenzene-d5	52.6	0	16.8-112		%Rec	1	12/21/2022 7:54:18 PM	72138
Surr: 2-Fluorobiphenyl	43.0	0	15-101		%Rec	1	12/21/2022 7:54:18 PM	72138
Surr: 4-Terphenyl-d14	84.2	0	34.4-134		%Rec	1	12/21/2022 7:54:18 PM	72138
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	0.12	0.11	1.0	J	µg/L	1	12/21/2022 4:51:00 AM	72138
Naphthalene	ND	0.20	0.30		µg/L	1	12/21/2022 4:51:00 AM	72138
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	12/21/2022 4:51:00 AM	72138
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	12/21/2022 4:51:00 AM	72138
Acenaphthene	ND	0.14	0.30		µg/L	1	12/21/2022 4:51:00 AM	72138
Fluorene	ND	0.095	0.30		µg/L	1	12/21/2022 4:51:00 AM	72138
Phenanthrene	ND	0.16	0.30		µg/L	1	12/21/2022 4:51:00 AM	72138
Anthracene	ND	0.14	0.30		µg/L	1	12/21/2022 4:51:00 AM	72138
Fluoranthene	ND	0.14	0.30		µg/L	1	12/21/2022 4:51:00 AM	72138
Pyrene	ND	0.32	1.0		µg/L	1	12/21/2022 4:51:00 AM	72138
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	12/21/2022 4:51:00 AM	72138
Chrysene	ND	0.25	0.30		µg/L	1	12/21/2022 4:51:00 AM	72138
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	12/21/2022 4:51:00 AM	72138
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	12/21/2022 4:51:00 AM	72138

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212A11**
Date Reported: **1/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1-NW
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/15/2022 10:30:00 AM
Lab ID: 2212A11-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	50.5	0	15-108		%Rec	1	12/21/2022 4:51:00 AM	72138
Surr: 2-Fluorobiphenyl	43.4	0	15-107		%Rec	1	12/21/2022 4:51:00 AM	72138
Surr: 4-Terphenyl-d14	89.5	0	15-166		%Rec	1	12/21/2022 4:51:00 AM	72138

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212A11**
Date Reported: **1/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1-NW
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/15/2022 10:30:00 AM
Lab ID: 2212A11-003D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.098	0.0016	0.0030		mg/L	1	12/21/2022 8:51:55 PM	72221
Beryllium	ND	0.00060	0.0020		mg/L	1	12/21/2022 8:51:55 PM	72221
Cadmium	ND	0.0018	0.0020		mg/L	1	12/21/2022 8:51:55 PM	72221
Chromium	0.0023	0.0020	0.0060	J	mg/L	1	12/21/2022 8:51:55 PM	72221
Cobalt	ND	0.0035	0.0060		mg/L	1	12/21/2022 8:51:55 PM	72221
Nickel	ND	0.0053	0.010		mg/L	1	12/21/2022 8:51:55 PM	72221
Silver	0.0022	0.0018	0.0050	J	mg/L	1	12/21/2022 8:51:55 PM	72221
Vanadium	0.028	0.0035	0.050	J	mg/L	1	12/21/2022 8:51:55 PM	72221
Zinc	ND	0.0039	0.010		mg/L	1	12/21/2022 8:51:55 PM	72221
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	12/21/2022 5:57:23 PM	72221
Arsenic	0.0018	0.0011	0.0050	J	mg/L	5	12/21/2022 5:57:23 PM	72221
Lead	ND	0.00097	0.0025		mg/L	5	12/21/2022 5:57:23 PM	72221
Selenium	0.0093	0.0044	0.0050		mg/L	5	12/21/2022 5:57:23 PM	72221
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/23/2022 1:48:27 PM	72295

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212A11**
Date Reported: **1/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1-NW
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/15/2022 10:30:00 AM
Lab ID: 2212A11-003E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.063	0.0011	0.0020		mg/L	1	12/23/2022 2:57:43 PM	C93558
Beryllium	ND	0.00059	0.0020		mg/L	1	12/23/2022 2:57:43 PM	C93558
Cadmium	ND	0.00098	0.0020		mg/L	1	12/23/2022 2:57:43 PM	C93558
Chromium	ND	0.0020	0.0060		mg/L	1	12/23/2022 2:57:43 PM	C93558
Cobalt	ND	0.0024	0.0060		mg/L	1	12/23/2022 2:57:43 PM	C93558
Nickel	ND	0.0033	0.010		mg/L	1	12/23/2022 2:57:43 PM	C93558
Silver	0.0016	0.0013	0.0050	J	mg/L	1	12/23/2022 2:57:43 PM	C93558
Vanadium	0.039	0.0017	0.050	J	mg/L	1	12/23/2022 2:57:43 PM	C93558
Zinc	ND	0.0032	0.010		mg/L	1	12/23/2022 2:57:43 PM	C93558
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	12/27/2022 2:09:01 PM	A93556
Arsenic	0.0022	0.00061	0.0050	J	mg/L	5	12/20/2022 5:44:02 PM	A93438
Lead	ND	0.00028	0.0025		mg/L	5	12/20/2022 5:44:02 PM	A93438
Selenium	0.0073	0.0017	0.0050		mg/L	5	12/20/2022 5:44:02 PM	A93438
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/23/2022 1:50:35 PM	72295

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212A11**
Date Reported: **1/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OPIS-1
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/15/2022 11:10:00 AM
Lab ID: 2212A11-004A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	0.44	0.0090	0.050		mg/L	1	12/27/2022 2:28:11 PM	B93549
Surr: BFB	164	0	70-130	S	%Rec	1	12/27/2022 2:28:11 PM	B93549
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	37	1.1	5.0		µg/L	5	12/28/2022 8:34:50 PM	R93599
Toluene	ND	1.0	5.0		µg/L	5	12/28/2022 8:34:50 PM	R93599
Ethylbenzene	4.6	1.1	5.0	J	µg/L	5	12/28/2022 8:34:50 PM	R93599
Methyl tert-butyl ether (MTBE)	330	2.0	5.0		µg/L	5	12/28/2022 8:34:50 PM	R93599
1,2,4-Trimethylbenzene	ND	0.61	5.0		µg/L	5	12/28/2022 8:34:50 PM	R93599
1,3,5-Trimethylbenzene	ND	0.91	5.0		µg/L	5	12/28/2022 8:34:50 PM	R93599
1,2-Dichloroethane (EDC)	ND	1.3	5.0		µg/L	5	12/28/2022 8:34:50 PM	R93599
Acetone	ND	13	50		µg/L	5	12/28/2022 8:34:50 PM	R93599
Bromomethane	ND	4.3	15		µg/L	5	12/28/2022 8:34:50 PM	R93599
2-Butanone	ND	10	50		µg/L	5	12/28/2022 8:34:50 PM	R93599
Carbon disulfide	ND	3.0	50		µg/L	5	12/28/2022 8:34:50 PM	R93599
Chlorobenzene	ND	0.78	5.0		µg/L	5	12/28/2022 8:34:50 PM	R93599
Chloroform	ND	0.67	5.0		µg/L	5	12/28/2022 8:34:50 PM	R93599
Chloromethane	ND	2.1	15		µg/L	5	12/28/2022 8:34:50 PM	R93599
cis-1,2-DCE	ND	1.9	5.0		µg/L	5	12/28/2022 8:34:50 PM	R93599
1,1-Dichloroethane	ND	1.4	5.0		µg/L	5	12/28/2022 8:34:50 PM	R93599
1,1-Dichloroethene	ND	1.0	5.0		µg/L	5	12/28/2022 8:34:50 PM	R93599
Isopropylbenzene	ND	0.91	5.0		µg/L	5	12/28/2022 8:34:50 PM	R93599
4-Isopropyltoluene	ND	1.0	5.0		µg/L	5	12/28/2022 8:34:50 PM	R93599
Methylene Chloride	ND	2.5	15		µg/L	5	12/28/2022 8:34:50 PM	R93599
n-Butylbenzene	ND	1.3	15		µg/L	5	12/28/2022 8:34:50 PM	R93599
n-Propylbenzene	ND	0.91	5.0		µg/L	5	12/28/2022 8:34:50 PM	R93599
sec-Butylbenzene	ND	0.72	5.0		µg/L	5	12/28/2022 8:34:50 PM	R93599
Styrene	ND	0.68	5.0		µg/L	5	12/28/2022 8:34:50 PM	R93599
Tetrachloroethene (PCE)	ND	1.8	5.0		µg/L	5	12/28/2022 8:34:50 PM	R93599
1,1,1-Trichloroethane	ND	1.5	5.0		µg/L	5	12/28/2022 8:34:50 PM	R93599
Trichloroethene (TCE)	ND	1.0	5.0		µg/L	5	12/28/2022 8:34:50 PM	R93599
Vinyl chloride	ND	1.6	5.0		µg/L	5	12/28/2022 8:34:50 PM	R93599
Xylenes, Total	ND	1.9	7.5		µg/L	5	12/28/2022 8:34:50 PM	R93599
Surr: 1,2-Dichloroethane-d4	105	0	70-130		%Rec	5	12/28/2022 8:34:50 PM	R93599
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	5	12/28/2022 8:34:50 PM	R93599
Surr: Dibromofluoromethane	96.3	0	70-130		%Rec	5	12/28/2022 8:34:50 PM	R93599
Surr: Toluene-d8	107	0	70-130		%Rec	5	12/28/2022 8:34:50 PM	R93599

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212A11**
Date Reported: **1/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Project: 2022 GW Sampling 4th Quarter
Lab ID: 2212A11-004B

Client Sample ID: OPIS-1
Collection Date: 12/15/2022 11:10:00 AM
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	12/27/2022 5:27:47 PM	72313

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212A11**
Date Reported: **1/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OPIS-1
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/15/2022 11:10:00 AM
Lab ID: 2212A11-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	8.3	0.080	0.32	B	mg/L	5	12/22/2022 10:33:23 P	72199
Motor Oil Range Organics (MRO)	1.0	0.26	0.40		mg/L	5	12/22/2022 10:33:23 P	72199
Surr: DNOP	111	0	15.9-177		%Rec	5	12/22/2022 10:33:23 P	72199
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	180	200	D	µg/L	10	12/21/2022 8:35:06 PM	72138
Bis(2-ethylhexyl)phthalate	ND	84	100	D	µg/L	10	12/21/2022 8:35:06 PM	72138
Di-n-butyl phthalate	ND	77	100	D	µg/L	10	12/21/2022 8:35:06 PM	72138
Di-n-octyl phthalate	ND	120	200	D	µg/L	10	12/21/2022 8:35:06 PM	72138
1,4-Dichlorobenzene	ND	24	50	D	µg/L	10	12/21/2022 8:35:06 PM	72138
Diethyl phthalate	ND	60	100	D	µg/L	10	12/21/2022 8:35:06 PM	72138
Dimethyl phthalate	ND	60	100	D	µg/L	10	12/21/2022 8:35:06 PM	72138
2,4-Dimethylphenol	ND	58	100	D	µg/L	10	12/21/2022 8:35:06 PM	72138
2,4-Dinitrophenol	ND	160	200	D	µg/L	10	12/21/2022 8:35:06 PM	72138
2-Methylphenol	ND	50	100	D	µg/L	10	12/21/2022 8:35:06 PM	72138
3+4-Methylphenol	ND	51	100	D	µg/L	10	12/21/2022 8:35:06 PM	72138
Phenol	ND	180	200	D	µg/L	10	12/21/2022 8:35:06 PM	72138
Pyridine	ND	140	400	D	µg/L	10	12/21/2022 8:35:06 PM	72138
2,4,6-Trichlorophenol	ND	59	100	D	µg/L	10	12/21/2022 8:35:06 PM	72138
Surr: 2-Fluorophenol	0	0	15-84.5	SD	%Rec	10	12/21/2022 8:35:06 PM	72138
Surr: Phenol-d5	0	0	15-67	SD	%Rec	10	12/21/2022 8:35:06 PM	72138
Surr: 2,4,6-Tribromophenol	0	0	15-108	SD	%Rec	10	12/21/2022 8:35:06 PM	72138
Surr: Nitrobenzene-d5	0	0	16.8-112	SD	%Rec	10	12/21/2022 8:35:06 PM	72138
Surr: 2-Fluorobiphenyl	0	0	15-101	SD	%Rec	10	12/21/2022 8:35:06 PM	72138
Surr: 4-Terphenyl-d14	0	0	34.4-134	SD	%Rec	10	12/21/2022 8:35:06 PM	72138
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	1.1	10	D	µg/L	10	12/21/2022 5:35:00 AM	72138
Naphthalene	ND	2.0	3.0	D	µg/L	10	12/21/2022 5:35:00 AM	72138
1-Methylnaphthalene	3.0	1.5	3.0	D	µg/L	10	12/21/2022 5:35:00 AM	72138
2-Methylnaphthalene	ND	1.4	3.0	D	µg/L	10	12/21/2022 5:35:00 AM	72138
Acenaphthene	ND	1.4	3.0	D	µg/L	10	12/21/2022 5:35:00 AM	72138
Fluorene	ND	0.95	3.0	D	µg/L	10	12/21/2022 5:35:00 AM	72138
Phenanthrene	ND	1.6	3.0	D	µg/L	10	12/21/2022 5:35:00 AM	72138
Anthracene	ND	1.4	3.0	D	µg/L	10	12/21/2022 5:35:00 AM	72138
Fluoranthene	ND	1.4	3.0	D	µg/L	10	12/21/2022 5:35:00 AM	72138
Pyrene	ND	3.2	10	D	µg/L	10	12/21/2022 5:35:00 AM	72138
Benz(a)anthracene	ND	1.5	3.0	D	µg/L	10	12/21/2022 5:35:00 AM	72138
Chrysene	ND	2.5	3.0	D	µg/L	10	12/21/2022 5:35:00 AM	72138
Benzo(b)fluoranthene	ND	1.4	4.0	D	µg/L	10	12/21/2022 5:35:00 AM	72138
Indeno(1,2,3-cd)pyrene	ND	2.3	3.0	D	µg/L	10	12/21/2022 5:35:00 AM	72138

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212A11**
Date Reported: **1/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OPIS-1
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/15/2022 11:10:00 AM
Lab ID: 2212A11-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	54.1	0	15-108	D	%Rec	10	12/21/2022 5:35:00 AM	72138
Surr: 2-Fluorobiphenyl	49.8	0	15-107	D	%Rec	10	12/21/2022 5:35:00 AM	72138
Surr: 4-Terphenyl-d14	71.6	0	15-166	D	%Rec	10	12/21/2022 5:35:00 AM	72138

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212A11**
Date Reported: **1/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OPIS-1
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/15/2022 11:10:00 AM
Lab ID: 2212A11-004D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.86	0.0016	0.0030		mg/L	1	12/21/2022 8:56:09 PM	72221
Beryllium	ND	0.00060	0.0020		mg/L	1	12/21/2022 8:56:09 PM	72221
Cadmium	ND	0.0018	0.0020		mg/L	1	12/21/2022 8:56:09 PM	72221
Chromium	ND	0.0020	0.0060		mg/L	1	12/21/2022 8:56:09 PM	72221
Cobalt	0.0048	0.0035	0.0060	J	mg/L	1	12/21/2022 8:56:09 PM	72221
Nickel	0.18	0.0053	0.010	*	mg/L	1	12/21/2022 8:56:09 PM	72221
Silver	0.0019	0.0018	0.0050	J	mg/L	1	12/21/2022 8:56:09 PM	72221
Vanadium	0.018	0.0035	0.050	J	mg/L	1	12/21/2022 8:56:09 PM	72221
Zinc	0.0079	0.0039	0.010	J	mg/L	1	12/21/2022 8:56:09 PM	72221
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	12/21/2022 5:59:50 PM	72221
Arsenic	0.0044	0.0011	0.0050	J	mg/L	5	12/21/2022 5:59:50 PM	72221
Lead	0.0046	0.00097	0.0025		mg/L	5	12/21/2022 5:59:50 PM	72221
Selenium	0.0045	0.0044	0.0050	J	mg/L	5	12/21/2022 5:59:50 PM	72221
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/23/2022 1:52:43 PM	72295

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212A11**
Date Reported: **1/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OPIS-1
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/15/2022 11:10:00 AM
Lab ID: 2212A11-004E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.71	0.0011	0.0020		mg/L	1	12/23/2022 4:49:46 PM	C93558
Beryllium	ND	0.00059	0.0020		mg/L	1	12/23/2022 4:49:46 PM	C93558
Cadmium	ND	0.00098	0.0020		mg/L	1	12/23/2022 4:49:46 PM	C93558
Chromium	ND	0.0020	0.0060		mg/L	1	12/23/2022 4:49:46 PM	C93558
Cobalt	0.0041	0.0024	0.0060	J	mg/L	1	12/23/2022 4:49:46 PM	C93558
Nickel	0.15	0.0033	0.010	*	mg/L	1	12/23/2022 4:49:46 PM	C93558
Silver	0.0019	0.0013	0.0050	J	mg/L	1	12/23/2022 4:49:46 PM	C93558
Vanadium	0.010	0.0017	0.050	J	mg/L	1	12/23/2022 4:49:46 PM	C93558
Zinc	0.0097	0.0032	0.010	J	mg/L	1	12/23/2022 4:49:46 PM	C93558
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	0.0032	0.0022	0.0050	J	mg/L	5	12/27/2022 2:19:15 PM	A93556
Arsenic	0.0043	0.00061	0.0050	J	mg/L	5	12/20/2022 5:49:07 PM	A93438
Lead	0.0030	0.00028	0.0025		mg/L	5	12/20/2022 5:49:07 PM	A93438
Selenium	0.0022	0.0017	0.0050	J	mg/L	5	12/20/2022 5:49:07 PM	A93438
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/23/2022 1:54:50 PM	72295

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212A11**
Date Reported: **1/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB-12-15-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/15/2022 11:10:00 AM
Lab ID: 2212A11-005A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	12/29/2022 12:23:53 A	R93599
Toluene	ND	0.20	1.0		µg/L	1	12/29/2022 12:23:53 A	R93599
Ethylbenzene	ND	0.21	1.0		µg/L	1	12/29/2022 12:23:53 A	R93599
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	12/29/2022 12:23:53 A	R93599
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	12/29/2022 12:23:53 A	R93599
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	12/29/2022 12:23:53 A	R93599
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	12/29/2022 12:23:53 A	R93599
Acetone	ND	2.5	10		µg/L	1	12/29/2022 12:23:53 A	R93599
Bromomethane	ND	0.85	3.0		µg/L	1	12/29/2022 12:23:53 A	R93599
2-Butanone	ND	2.0	10		µg/L	1	12/29/2022 12:23:53 A	R93599
Carbon disulfide	ND	0.59	10		µg/L	1	12/29/2022 12:23:53 A	R93599
Chlorobenzene	ND	0.16	1.0		µg/L	1	12/29/2022 12:23:53 A	R93599
Chloroform	ND	0.13	1.0		µg/L	1	12/29/2022 12:23:53 A	R93599
Chloromethane	ND	0.41	3.0		µg/L	1	12/29/2022 12:23:53 A	R93599
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	12/29/2022 12:23:53 A	R93599
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	12/29/2022 12:23:53 A	R93599
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	12/29/2022 12:23:53 A	R93599
Isopropylbenzene	ND	0.18	1.0		µg/L	1	12/29/2022 12:23:53 A	R93599
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	12/29/2022 12:23:53 A	R93599
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/29/2022 12:23:53 A	R93599
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/29/2022 12:23:53 A	R93599
n-Propylbenzene	ND	0.18	1.0		µg/L	1	12/29/2022 12:23:53 A	R93599
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	12/29/2022 12:23:53 A	R93599
Styrene	ND	0.14	1.0		µg/L	1	12/29/2022 12:23:53 A	R93599
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/29/2022 12:23:53 A	R93599
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	12/29/2022 12:23:53 A	R93599
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	12/29/2022 12:23:53 A	R93599
Vinyl chloride	ND	0.32	1.0		µg/L	1	12/29/2022 12:23:53 A	R93599
Xylenes, Total	ND	0.37	1.5		µg/L	1	12/29/2022 12:23:53 A	R93599
Surr: 1,2-Dichloroethane-d4	98.7	0	70-130		%Rec	1	12/29/2022 12:23:53 A	R93599
Surr: 4-Bromofluorobenzene	113	0	70-130		%Rec	1	12/29/2022 12:23:53 A	R93599
Surr: Dibromofluoromethane	95.0	0	70-130		%Rec	1	12/29/2022 12:23:53 A	R93599
Surr: Toluene-d8	108	0	70-130		%Rec	1	12/29/2022 12:23:53 A	R93599

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212A11**
Date Reported: **1/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Dup-12-15-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/15/2022
Lab ID: 2212A11-006A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	12/27/2022 3:15:20 PM	B93549
Surr: BFB	91.8	0	70-130		%Rec	1	12/27/2022 3:15:20 PM	B93549
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	12/28/2022 5:42:43 PM	R93599
Toluene	ND	0.20	1.0		µg/L	1	12/28/2022 5:42:43 PM	R93599
Ethylbenzene	ND	0.21	1.0		µg/L	1	12/28/2022 5:42:43 PM	R93599
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	12/28/2022 5:42:43 PM	R93599
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	12/28/2022 5:42:43 PM	R93599
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	12/28/2022 5:42:43 PM	R93599
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	12/28/2022 5:42:43 PM	R93599
Acetone	ND	2.5	10		µg/L	1	12/28/2022 5:42:43 PM	R93599
Bromomethane	ND	0.85	3.0		µg/L	1	12/28/2022 5:42:43 PM	R93599
2-Butanone	ND	2.0	10		µg/L	1	12/28/2022 5:42:43 PM	R93599
Carbon disulfide	ND	0.59	10		µg/L	1	12/28/2022 5:42:43 PM	R93599
Chlorobenzene	ND	0.16	1.0		µg/L	1	12/28/2022 5:42:43 PM	R93599
Chloroform	ND	0.13	1.0		µg/L	1	12/28/2022 5:42:43 PM	R93599
Chloromethane	ND	0.41	3.0		µg/L	1	12/28/2022 5:42:43 PM	R93599
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	12/28/2022 5:42:43 PM	R93599
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	12/28/2022 5:42:43 PM	R93599
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	12/28/2022 5:42:43 PM	R93599
Isopropylbenzene	ND	0.18	1.0		µg/L	1	12/28/2022 5:42:43 PM	R93599
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	12/28/2022 5:42:43 PM	R93599
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/28/2022 5:42:43 PM	R93599
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/28/2022 5:42:43 PM	R93599
n-Propylbenzene	ND	0.18	1.0		µg/L	1	12/28/2022 5:42:43 PM	R93599
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	12/28/2022 5:42:43 PM	R93599
Styrene	ND	0.14	1.0		µg/L	1	12/28/2022 5:42:43 PM	R93599
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/28/2022 5:42:43 PM	R93599
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	12/28/2022 5:42:43 PM	R93599
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	12/28/2022 5:42:43 PM	R93599
Vinyl chloride	ND	0.32	1.0		µg/L	1	12/28/2022 5:42:43 PM	R93599
Xylenes, Total	ND	0.37	1.5		µg/L	1	12/28/2022 5:42:43 PM	R93599
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%Rec	1	12/28/2022 5:42:43 PM	R93599
Surr: 4-Bromofluorobenzene	108	0	70-130		%Rec	1	12/28/2022 5:42:43 PM	R93599
Surr: Dibromofluoromethane	99.9	0	70-130		%Rec	1	12/28/2022 5:42:43 PM	R93599
Surr: Toluene-d8	108	0	70-130		%Rec	1	12/28/2022 5:42:43 PM	R93599

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212A11**
Date Reported: **1/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Dup-12-15-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/15/2022
Lab ID: 2212A11-006B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	12/27/2022 5:42:48 PM	72313

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212A11**
Date Reported: **1/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Dup-12-15-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/15/2022
Lab ID: 2212A11-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.20	0.016	0.064	B	mg/L	1	12/22/2022 10:57:06 P	72199
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/22/2022 10:57:06 P	72199
Surr: DNOP	108	0	15.9-177		%Rec	1	12/22/2022 10:57:06 P	72199
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	1/6/2023 4:14:22 PM	72239
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	1/6/2023 4:14:22 PM	72239
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	1/6/2023 4:14:22 PM	72239
Di-n-octyl phthalate	ND	12	20		µg/L	1	1/6/2023 4:14:22 PM	72239
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	1/6/2023 4:14:22 PM	72239
Diethyl phthalate	ND	6.0	10		µg/L	1	1/6/2023 4:14:22 PM	72239
Dimethyl phthalate	ND	6.0	10		µg/L	1	1/6/2023 4:14:22 PM	72239
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	1/6/2023 4:14:22 PM	72239
2,4-Dinitrophenol	ND	16	20		µg/L	1	1/6/2023 4:14:22 PM	72239
2-Methylphenol	ND	5.0	10		µg/L	1	1/6/2023 4:14:22 PM	72239
3+4-Methylphenol	ND	5.1	10		µg/L	1	1/6/2023 4:14:22 PM	72239
Phenol	ND	18	20		µg/L	1	1/6/2023 4:14:22 PM	72239
Pyridine	ND	14	40		µg/L	1	1/6/2023 4:14:22 PM	72239
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	1/6/2023 4:14:22 PM	72239
Surr: 2-Fluorophenol	34.4	0	15-84.5		%Rec	1	1/6/2023 4:14:22 PM	72239
Surr: Phenol-d5	27.7	0	15-67		%Rec	1	1/6/2023 4:14:22 PM	72239
Surr: 2,4,6-Tribromophenol	55.9	0	15-108		%Rec	1	1/6/2023 4:14:22 PM	72239
Surr: Nitrobenzene-d5	48.7	0	16.8-112		%Rec	1	1/6/2023 4:14:22 PM	72239
Surr: 2-Fluorobiphenyl	43.0	0	15-101		%Rec	1	1/6/2023 4:14:22 PM	72239
Surr: 4-Terphenyl-d14	71.0	0	34.4-134		%Rec	1	1/6/2023 4:14:22 PM	72239
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	0.12	0.11	1.0	J	µg/L	1	1/4/2023 3:26:00 PM	72239
Naphthalene	ND	0.20	0.30		µg/L	1	1/4/2023 3:26:00 PM	72239
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	1/4/2023 3:26:00 PM	72239
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	1/4/2023 3:26:00 PM	72239
Acenaphthene	ND	0.14	0.30		µg/L	1	1/4/2023 3:26:00 PM	72239
Fluorene	ND	0.095	0.30		µg/L	1	1/4/2023 3:26:00 PM	72239
Phenanthrene	ND	0.16	0.30		µg/L	1	1/4/2023 3:26:00 PM	72239
Anthracene	ND	0.14	0.30		µg/L	1	1/4/2023 3:26:00 PM	72239
Fluoranthene	ND	0.14	0.30		µg/L	1	1/4/2023 3:26:00 PM	72239
Pyrene	ND	0.32	1.0		µg/L	1	1/4/2023 3:26:00 PM	72239
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	1/4/2023 3:26:00 PM	72239
Chrysene	ND	0.25	0.30		µg/L	1	1/4/2023 3:26:00 PM	72239
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	1/4/2023 3:26:00 PM	72239
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	1/4/2023 3:26:00 PM	72239

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212A11**
Date Reported: **1/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Dup-12-15-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/15/2022
Lab ID: 2212A11-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	49.8	0	15-108		%Rec	1	1/4/2023 3:26:00 PM	72239
Surr: 2-Fluorobiphenyl	42.3	0	15-107		%Rec	1	1/4/2023 3:26:00 PM	72239
Surr: 4-Terphenyl-d14	71.8	0	15-166		%Rec	1	1/4/2023 3:26:00 PM	72239

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212A11**
Date Reported: **1/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Dup-12-15-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/15/2022
Lab ID: 2212A11-006D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.10	0.0016	0.0030		mg/L	1	12/21/2022 9:00:13 PM	72221
Beryllium	ND	0.00060	0.0020		mg/L	1	12/21/2022 9:00:13 PM	72221
Cadmium	ND	0.0018	0.0020		mg/L	1	12/21/2022 9:00:13 PM	72221
Chromium	0.0022	0.0020	0.0060	J	mg/L	1	12/21/2022 9:00:13 PM	72221
Cobalt	ND	0.0035	0.0060		mg/L	1	12/21/2022 9:00:13 PM	72221
Nickel	ND	0.0053	0.010		mg/L	1	12/21/2022 9:00:13 PM	72221
Silver	0.0019	0.0018	0.0050	J	mg/L	1	12/21/2022 9:00:13 PM	72221
Vanadium	0.028	0.0035	0.050	J	mg/L	1	12/21/2022 9:00:13 PM	72221
Zinc	ND	0.0039	0.010		mg/L	1	12/21/2022 9:00:13 PM	72221
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	12/21/2022 6:02:16 PM	72221
Arsenic	0.0019	0.0011	0.0050	J	mg/L	5	12/21/2022 6:02:16 PM	72221
Lead	ND	0.00097	0.0025		mg/L	5	12/21/2022 6:02:16 PM	72221
Selenium	0.0058	0.0044	0.0050		mg/L	5	12/21/2022 6:02:16 PM	72221
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/23/2022 1:56:58 PM	72295

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212A11**
Date Reported: **1/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Dup-12-15-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/15/2022
Lab ID: 2212A11-006E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.056	0.0011	0.0020		mg/L	1	12/23/2022 3:23:38 PM	C93558
Beryllium	ND	0.00059	0.0020		mg/L	1	12/23/2022 3:23:38 PM	C93558
Cadmium	ND	0.00098	0.0020		mg/L	1	12/23/2022 3:23:38 PM	C93558
Chromium	ND	0.0020	0.0060		mg/L	1	12/23/2022 3:23:38 PM	C93558
Cobalt	ND	0.0024	0.0060		mg/L	1	12/23/2022 3:23:38 PM	C93558
Nickel	ND	0.0033	0.010		mg/L	1	12/23/2022 3:23:38 PM	C93558
Silver	0.0013	0.0013	0.0050	J	mg/L	1	12/23/2022 3:23:38 PM	C93558
Vanadium	0.029	0.0017	0.050	J	mg/L	1	12/23/2022 3:23:38 PM	C93558
Zinc	ND	0.0032	0.010		mg/L	1	12/23/2022 3:23:38 PM	C93558
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	12/27/2022 2:24:22 PM	A93556
Arsenic	0.0023	0.00061	0.0050	J	mg/L	5	12/20/2022 5:54:13 PM	A93438
Lead	ND	0.00028	0.0025		mg/L	5	12/20/2022 5:54:13 PM	A93438
Selenium	0.0070	0.0017	0.0050		mg/L	5	12/20/2022 5:54:13 PM	A93438
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/23/2022 1:59:06 PM	72295

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212A11**
Date Reported: **1/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 4th Quarter
Collection Date:
Lab ID: 2212A11-007A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599
Toluene	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599
Ethylbenzene	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599
Methyl tert-butyl ether (MTBE)	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599
1,2,4-Trimethylbenzene	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599
1,3,5-Trimethylbenzene	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599
1,2-Dichloroethane (EDC)	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599
1,2-Dibromoethane (EDB)	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599
Naphthalene	ND	2.0	2.0		µg/L	1	12/29/2022 12:52:27 A	R93599
1-Methylnaphthalene	ND	4.0	4.0		µg/L	1	12/29/2022 12:52:27 A	R93599
2-Methylnaphthalene	ND	4.0	4.0		µg/L	1	12/29/2022 12:52:27 A	R93599
Acetone	ND	10	10		µg/L	1	12/29/2022 12:52:27 A	R93599
Bromobenzene	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599
Bromodichloromethane	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599
Bromoform	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599
Bromomethane	ND	3.0	3.0		µg/L	1	12/29/2022 12:52:27 A	R93599
2-Butanone	ND	10	10		µg/L	1	12/29/2022 12:52:27 A	R93599
Carbon disulfide	ND	10	10		µg/L	1	12/29/2022 12:52:27 A	R93599
Carbon Tetrachloride	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599
Chlorobenzene	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599
Chloroethane	ND	2.0	2.0		µg/L	1	12/29/2022 12:52:27 A	R93599
Chloroform	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599
Chloromethane	ND	3.0	3.0		µg/L	1	12/29/2022 12:52:27 A	R93599
2-Chlorotoluene	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599
4-Chlorotoluene	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599
cis-1,2-DCE	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599
cis-1,3-Dichloropropene	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599
1,2-Dibromo-3-chloropropane	ND	2.0	2.0		µg/L	1	12/29/2022 12:52:27 A	R93599
Dibromochloromethane	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599
Dibromomethane	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599
1,2-Dichlorobenzene	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599
1,3-Dichlorobenzene	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599
1,4-Dichlorobenzene	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599
Dichlorodifluoromethane	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599
1,1-Dichloroethane	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599
1,1-Dichloroethene	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599
1,2-Dichloropropane	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599
1,3-Dichloropropane	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599
2,2-Dichloropropane	ND	2.0	2.0		µg/L	1	12/29/2022 12:52:27 A	R93599
1,1-Dichloropropene	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212A11**
Date Reported: **1/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 4th Quarter
Collection Date:
Lab ID: 2212A11-007A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Hexachlorobutadiene	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599
2-Hexanone	ND	10	10		µg/L	1	12/29/2022 12:52:27 A	R93599
Isopropylbenzene	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599
4-Isopropyltoluene	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599
4-Methyl-2-pentanone	ND	10	10		µg/L	1	12/29/2022 12:52:27 A	R93599
Methylene Chloride	ND	3.0	3.0		µg/L	1	12/29/2022 12:52:27 A	R93599
n-Butylbenzene	ND	3.0	3.0		µg/L	1	12/29/2022 12:52:27 A	R93599
n-Propylbenzene	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599
sec-Butylbenzene	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599
Styrene	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599
tert-Butylbenzene	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599
1,1,1,2-Tetrachloroethane	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599
1,1,2,2-Tetrachloroethane	ND	2.0	2.0		µg/L	1	12/29/2022 12:52:27 A	R93599
Tetrachloroethene (PCE)	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599
trans-1,2-DCE	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599
trans-1,3-Dichloropropene	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599
1,2,3-Trichlorobenzene	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599
1,2,4-Trichlorobenzene	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599
1,1,1-Trichloroethane	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599
1,1,2-Trichloroethane	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599
Trichloroethene (TCE)	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599
Trichlorofluoromethane	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599
1,2,3-Trichloropropane	ND	2.0	2.0		µg/L	1	12/29/2022 12:52:27 A	R93599
Vinyl chloride	ND	1.0	1.0		µg/L	1	12/29/2022 12:52:27 A	R93599
Xylenes, Total	ND	1.5	1.5		µg/L	1	12/29/2022 12:52:27 A	R93599
Surr: 1,2-Dichloroethane-d4	95.9	0	70-130		%Rec	1	12/29/2022 12:52:27 A	R93599
Surr: 4-Bromofluorobenzene	111	0	70-130		%Rec	1	12/29/2022 12:52:27 A	R93599
Surr: Dibromofluoromethane	90.6	0	70-130		%Rec	1	12/29/2022 12:52:27 A	R93599
Surr: Toluene-d8	108	0	70-130		%Rec	1	12/29/2022 12:52:27 A	R93599

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212A11**
Date Reported: **1/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 4th Quarter
Collection Date:
Lab ID: 2212A11-007B
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0096		µg/L	1	12/27/2022 5:57:52 PM	72313

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

ANALYTICAL REPORT

December 27, 2022

Hall Environmental Analysis Laboratory

Sample Delivery Group: L1569546

Samples Received: 12/20/2022

Project Number:

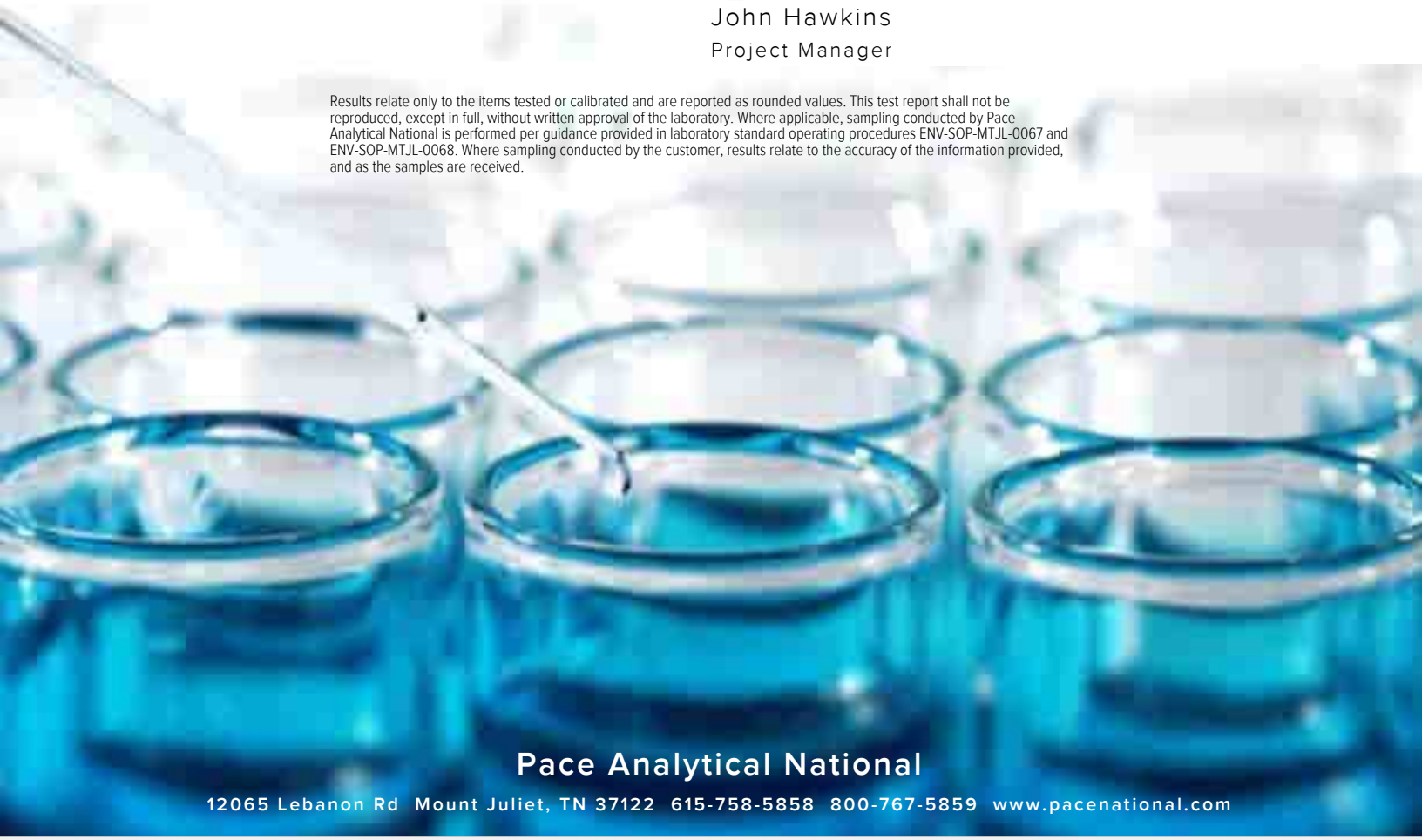
Description:

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By:

John Hawkins
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 4

Sr: Sample Results 5

2212A11-001F EB-12-15-22 L1569546-01 5

2212A11-002F MKTF-30 L1569546-02 6

2212A11-003F STP-1-NM L1569546-03 7

2212A11-004F OPIS-1 L1569546-04 8

2212A11-005F DUP-12-15-22 L1569546-05 9

Qc: Quality Control Summary 10

Wet Chemistry by Method 4500CN E-2016 10

Gl: Glossary of Terms 11

Al: Accreditations & Locations 12

Sc: Sample Chain of Custody 13

SAMPLE SUMMARY

2212A11-001F EB-12-15-22 L1569546-01 GW

Collected by	Collected date/time	Received date/time
	12/15/22 09:30	12/20/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1977924	1	12/26/22 17:25	12/26/22 21:53	CAT	Mt. Juliet, TN

2212A11-002F MKTF-30 L1569546-02 GW

Collected by	Collected date/time	Received date/time
	12/15/22 10:00	12/20/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1977924	1	12/26/22 17:25	12/26/22 21:54	CAT	Mt. Juliet, TN

2212A11-003F STP-1-NM L1569546-03 GW

Collected by	Collected date/time	Received date/time
	12/15/22 10:30	12/20/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1977924	1	12/26/22 17:25	12/26/22 21:55	CAT	Mt. Juliet, TN

2212A11-004F OPIS-1 L1569546-04 GW

Collected by	Collected date/time	Received date/time
	12/15/22 11:10	12/20/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1977924	1	12/26/22 17:25	12/26/22 21:58	CAT	Mt. Juliet, TN

2212A11-005F DUP-12-15-22 L1569546-05 GW

Collected by	Collected date/time	Received date/time
	12/15/22 00:00	12/20/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1977924	1	12/26/22 17:25	12/26/22 21:59	CAT	Mt. Juliet, TN

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Wet Chemistry by Method 4500CN E-2016

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Cyanide	ND		0.00500	1	12/26/2022 21:53	WG1977924

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	12/26/2022 21:54	WG1977924

Wet Chemistry by Method 4500CN E-2016

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Cyanide	0.0538		0.00500	1	12/26/2022 21:55	WG1977924

Received by OCD: 4/21/2023 9:21:57 AM

22121AM-0041-01113-1
Collected date/time: 12/15/22 11:10
L1569546

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.0751		0.00500	1	12/26/2022 21:58	WG1977924

Released to Imaging: 4/21/2023 9:40:26 AM

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.0583		0.00500	1	12/26/2022 21:59	WG1977924

Method Blank (MB)

(MB) R3875503-1 12/26/22 21:33

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1567376-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1567376-02 12/26/22 21:37 • (DUP) R3875503-3 12/26/22 21:38

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

L1569421-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1569421-02 12/26/22 21:46 • (DUP) R3875503-6 12/26/22 21:47

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	36.9	P1	20

Laboratory Control Sample (LCS)

(LCS) R3875503-2 12/26/22 21:34

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.105	105	87.1-120	

L1567392-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1567392-02 12/26/22 21:39 • (MS) R3875503-4 12/26/22 21:40 • (MSD) R3875503-5 12/26/22 21:41

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0984	0.0999	98.4	99.9	1	90.0-110			1.51	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Received by OCD: 4/21/2023 9:21:57 AM

ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

J146

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

SUB CONTRATOR: Pace TN	COMPANY: PACE TN		PHONE: (800) 767-5859	FAX: (615) 758-5859	
ADDRESS: 12065 Lebanon Rd			ACCOUNT #:	EMAIL:	
CITY, STATE, ZIP: Mt. Juliet, TN 37122					

L1569546

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS	
1	2212A11-001F	EB-12-15-22	500AMBHDPE-NAOH	Groundwater	12/15/2022 9:30:00 AM	1	Total Cyanide J and MDL	-01
2	2212A11-002F	MKTF-30	500AMBHDPE-NAOH	Groundwater	12/15/2022 10:00:00 AM	1	Total Cyanide J and MDL	-02
3	2212A11-003F	STP-1-NM	500AMBHDPE-NAOH	Groundwater	12/15/2022 10:30:00 AM	1	Total Cyanide J and MDL	-03
4	2212A11-004F	OPIS-1	500AMBHDPE-NAOH	Groundwater	12/15/2022 11:10:00 AM	1	Total Cyanide J and MDL	-04
5	2212A11-006F	Dup-12-15-22	500AMBHDPE-NAOH	Groundwater	12/15/2022	1	Total Cyanide J and MDL	-05

Sample Receipt Checklist

COC Seal Present/Intact:	Y N	If Applicable	
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	Y N	Pres.Correct/Check:	Y N
Correct bottles used:	Y N		
Sufficient volume sent:	Y N		
RAD Screen <0.5 mR/hr:	Y N		

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By:	Date: 12/16/2022	Time: 8:14 AM	Received By:	Date: 12/20/22	Time: 0930
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☐ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:

☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY

Temp of samples 4.0+0=4.0 °C Attempt to Cool ?

Comments:

Released to Imaging: 4/21/2023 9:40:26 AM

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212A11**

12-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-72221** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**

Client ID: **PBW** Batch ID: **72221** RunNo: **93476**

Prep Date: **12/20/2022** Analysis Date: **12/21/2022** SeqNo: **3371298** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	0.00082	0.0020								J
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LCSLL-72221** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**

Client ID: **BatchQC** Batch ID: **72221** RunNo: **93476**

Prep Date: **12/20/2022** Analysis Date: **12/21/2022** SeqNo: **3371299** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0021	0.0030	0.002000	0	106	50	150			J
Beryllium	0.0026	0.0020	0.002000	0	129	50	150			
Cadmium	0.0022	0.0020	0.002000	0	112	50	150			
Chromium	0.0060	0.0060	0.006000	0	99.5	50	150			J
Cobalt	0.0066	0.0060	0.006000	0	110	50	150			
Nickel	0.0074	0.010	0.005000	0	148	50	150			J
Silver	0.0048	0.0050	0.005000	0	96.9	50	150			J
Vanadium	0.011	0.050	0.01000	0	112	50	150			J
Zinc	0.011	0.010	0.01000	0	111	50	150			

Sample ID: **LCS-72221** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**

Client ID: **LCSW** Batch ID: **72221** RunNo: **93476**

Prep Date: **12/20/2022** Analysis Date: **12/21/2022** SeqNo: **3371300** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0030	0.5000	0	96.5	85	115			
Beryllium	0.51	0.0020	0.5000	0	102	85	115			
Cadmium	0.52	0.0020	0.5000	0	104	85	115			
Chromium	0.49	0.0060	0.5000	0	97.4	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.4	85	115			
Nickel	0.48	0.010	0.5000	0	96.5	85	115			
Silver	0.096	0.0050	0.1000	0	95.7	85	115			
Vanadium	0.50	0.050	0.5000	0	99.7	85	115			
Zinc	0.49	0.010	0.5000	0	98.8	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212A11**

12-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-C**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **C93558**	RunNo: **93558**
Prep Date:	Analysis Date: **12/23/2022**	SeqNo: **3375409** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LCSLL-C**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **C93558**	RunNo: **93558**
Prep Date:	Analysis Date: **12/23/2022**	SeqNo: **3375410** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0018	0.0020	0.002000	0	89.6	50	150			J
Beryllium	0.0020	0.0020	0.002000	0	98.9	50	150			J
Cadmium	0.0020	0.0020	0.002000	0	98.6	50	150			J
Cobalt	0.0075	0.0060	0.006000	0	125	50	150			
Nickel	0.0068	0.010	0.005000	0	137	50	150			J
Silver	0.0049	0.0050	0.005000	0	98.7	50	150			J
Vanadium	0.0092	0.050	0.01000	0	91.7	50	150			J
Zinc	0.010	0.010	0.01000	0	104	50	150			

Sample ID: **LCS-C**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **C93558**	RunNo: **93558**
Prep Date:	Analysis Date: **12/23/2022**	SeqNo: **3375411** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.47	0.0020	0.5000	0	94.3	85	115			
Beryllium	0.50	0.0020	0.5000	0	100	85	115			
Cadmium	0.47	0.0020	0.5000	0	93.2	85	115			
Chromium	0.46	0.0060	0.5000	0	92.1	85	115			
Cobalt	0.45	0.0060	0.5000	0	89.8	85	115			
Nickel	0.47	0.010	0.5000	0	93.1	85	115			
Silver	0.10	0.0050	0.1000	0	102	85	115			
Vanadium	0.49	0.050	0.5000	0	98.2	85	115			
Zinc	0.45	0.010	0.5000	0	91.0	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212A11**

12-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **LCSLL-C**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **C93558**	RunNo: **93558**
Prep Date:	Analysis Date: **12/23/2022**	SeqNo: **3375416** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	0.0030	0.0060	0.006000	0	50.7	50	150			J

Sample ID: **2212A11-001EMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB-12-15-22**	Batch ID: **C93558**	RunNo: **93558**
Prep Date:	Analysis Date: **12/23/2022**	SeqNo: **3375507** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.53	0.0020	0.5000	0	105	70	130			
Beryllium	0.53	0.0020	0.5000	0	106	70	130			
Cadmium	0.54	0.0020	0.5000	0	107	70	130			
Chromium	0.51	0.0060	0.5000	0	102	70	130			
Cobalt	0.53	0.0060	0.5000	0	106	70	130			
Nickel	0.53	0.010	0.5000	0	107	70	130			
Silver	0.10	0.0050	0.1000	0	102	70	130			
Vanadium	0.52	0.050	0.5000	0	104	70	130			
Zinc	0.54	0.010	0.5000	0	108	70	130			

Sample ID: **2212A11-001EMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB-12-15-22**	Batch ID: **C93558**	RunNo: **93558**
Prep Date:	Analysis Date: **12/23/2022**	SeqNo: **3375544** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.54	0.0020	0.5000	0	107	70	130	1.72	20	
Beryllium	0.55	0.0020	0.5000	0	109	70	130	2.70	20	
Cadmium	0.55	0.0020	0.5000	0	110	70	130	2.33	20	
Chromium	0.52	0.0060	0.5000	0	104	70	130	1.48	20	
Cobalt	0.54	0.0060	0.5000	0	108	70	130	1.84	20	
Nickel	0.54	0.010	0.5000	0	108	70	130	1.37	20	
Silver	0.10	0.0050	0.1000	0	103	70	130	1.16	20	
Vanadium	0.52	0.050	0.5000	0	105	70	130	1.02	20	
Zinc	0.55	0.010	0.5000	0	110	70	130	1.65	20	

Sample ID: **2212A11-002EMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **MKTF-30**	Batch ID: **C93558**	RunNo: **93558**
Prep Date:	Analysis Date: **12/23/2022**	SeqNo: **3375547** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.36	0.0020	0.5000	0.02912	65.3	70	130			S
Beryllium	0.38	0.0020	0.5000	0	75.7	70	130			
Cadmium	0.35	0.0020	0.5000	0	70.1	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2212A11**
12-Jan-23

Client: Marathon
Project: 2022 GW Sampling 4th Quarter

Sample ID: **2212A11-002EMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **MKTF-30**	Batch ID: **C93558**	RunNo: **93558**
Prep Date:	Analysis Date: **12/23/2022**	SeqNo: **3375547** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	0.32	0.0060	0.5000	0	64.4	70	130			S
Cobalt	0.32	0.0060	0.5000	0	64.0	70	130			S
Nickel	0.33	0.010	0.5000	0.01325	64.0	70	130			S
Silver	0.060	0.0050	0.1000	0.001967	58.1	70	130			S
Vanadium	0.36	0.050	0.5000	0.003101	72.2	70	130			
Zinc	0.32	0.010	0.5000	0	64.9	70	130			S

Sample ID: **2212A11-002EMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **MKTF-30**	Batch ID: **C93558**	RunNo: **93558**
Prep Date:	Analysis Date: **12/23/2022**	SeqNo: **3375548** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.34	0.0020	0.5000	0.02912	62.2	70	130	4.54	20	S
Beryllium	0.36	0.0020	0.5000	0	73.0	70	130	3.72	20	
Cadmium	0.33	0.0020	0.5000	0	66.7	70	130	4.90	20	S
Chromium	0.30	0.0060	0.5000	0	60.9	70	130	5.63	20	S
Cobalt	0.30	0.0060	0.5000	0	60.9	70	130	4.90	20	S
Nickel	0.32	0.010	0.5000	0.01325	61.2	70	130	4.39	20	S
Silver	0.059	0.0050	0.1000	0.001967	56.5	70	130	2.61	20	S
Vanadium	0.35	0.050	0.5000	0.003101	69.4	70	130	3.95	20	S
Zinc	0.31	0.010	0.5000	0	61.5	70	130	5.37	20	S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212A11**

12-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-72221**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **72221**	RunNo: **93483**
Prep Date: **12/20/2022**	Analysis Date: **12/21/2022**	SeqNo: **3371600** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **MSLCSLL-72221**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **72221**	RunNo: **93483**
Prep Date: **12/20/2022**	Analysis Date: **12/21/2022**	SeqNo: **3371601** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00073	0.0010	0.001000	0	72.9	50	150			J
Arsenic	0.00098	0.0010	0.001000	0	98.2	50	150			J
Lead	0.00049	0.00050	0.0005000	0	98.8	50	150			J
Selenium	0.00096	0.0010	0.001000	0	96.2	50	150			J

Sample ID: **MSLCS-72221**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **72221**	RunNo: **93483**
Prep Date: **12/20/2022**	Analysis Date: **12/21/2022**	SeqNo: **3371602** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	94.6	85	115			
Arsenic	0.024	0.0010	0.02500	0	97.2	85	115			
Lead	0.012	0.00050	0.01250	0	98.5	85	115			

Sample ID: **MSLCS-72221**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **72221**	RunNo: **93483**
Prep Date: **12/20/2022**	Analysis Date: **12/21/2022**	SeqNo: **3371616** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.024	0.0010	0.02500	0	97.8	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212A11**

12-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A93438**	RunNo: **93438**
Prep Date:	Analysis Date: **12/20/2022**	SeqNo: **3370010** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A93438**	RunNo: **93438**
Prep Date:	Analysis Date: **12/20/2022**	SeqNo: **3370011** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.00095	0.0010	0.001000	0	94.8	50	150			J
Lead	0.00050	0.00050	0.0005000	0	99.8	50	150			J
Selenium	0.0011	0.0010	0.001000	0	113	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A93438**	RunNo: **93438**
Prep Date:	Analysis Date: **12/20/2022**	SeqNo: **3370012** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	94.3	85	115			
Lead	0.012	0.00050	0.01250	0	98.9	85	115			
Selenium	0.025	0.0010	0.02500	0	99.4	85	115			

Sample ID: **2212A11-001EMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **EB-12-15-22**	Batch ID: **A93438**	RunNo: **93438**
Prep Date:	Analysis Date: **12/20/2022**	SeqNo: **3370027** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	99.7	70	130			
Lead	0.012	0.00050	0.01250	0	99.2	70	130			
Selenium	0.027	0.0010	0.02500	0	108	70	130			

Sample ID: **2212A11-001EMSDL**	SampType: **MSD**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **EB-12-15-22**	Batch ID: **A93438**	RunNo: **93438**
Prep Date:	Analysis Date: **12/20/2022**	SeqNo: **3370028** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	100	70	130	0.732	20	
Lead	0.012	0.00050	0.01250	0	97.9	70	130	1.40	20	
Selenium	0.027	0.0010	0.02500	0	108	70	130	0.298	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212A11**

12-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **2212A11-002EMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **MKTF-30**	Batch ID: **A93438**	RunNo: **93438**
Prep Date:	Analysis Date: **12/20/2022**	SeqNo: **3370059** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.13	0.0050	0.1250	0	100	70	130			
Lead	0.059	0.0025	0.06250	0	94.3	70	130			
Selenium	0.12	0.0050	0.1250	0	97.6	70	130			

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A93556**	RunNo: **93556**
Prep Date:	Analysis Date: **12/27/2022**	SeqNo: **3375278** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A93556**	RunNo: **93556**
Prep Date:	Analysis Date: **12/27/2022**	SeqNo: **3375279** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00091	0.0010	0.001000	0	91.4	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A93556**	RunNo: **93556**
Prep Date:	Analysis Date: **12/27/2022**	SeqNo: **3375281** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	94.3	85	115			

Sample ID: **2212A11-002EMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **MKTF-30**	Batch ID: **A93556**	RunNo: **93556**
Prep Date:	Analysis Date: **12/27/2022**	SeqNo: **3375297** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.12	0.0050	0.1250	0	92.6	70	130			

Sample ID: **2212A11-002EMSDL**	SampType: **MSD**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **MKTF-30**	Batch ID: **A93556**	RunNo: **93556**
Prep Date:	Analysis Date: **12/27/2022**	SeqNo: **3375298** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.12	0.0050	0.1250	0	95.7	70	130	3.25	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212A11**

12-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **2212A11-003EMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **STP-1-NW**	Batch ID: **A93556**	RunNo: **93556**
Prep Date:	Analysis Date: **12/27/2022**	SeqNo: **3375302** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.12	0.0050	0.1250	0	92.8	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212A11**

12-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-72295**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **PBW**	Batch ID: **72295**	RunNo: **93535**							
Prep Date: **12/23/2022**	Analysis Date: **12/23/2022**	SeqNo: **3374379**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-72295**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **BatchQC**	Batch ID: **72295**	RunNo: **93535**							
Prep Date: **12/23/2022**	Analysis Date: **12/23/2022**	SeqNo: **3374380**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00022	0.00020	0.0001500	0	148	50	150			

Sample ID: **LCS-72295**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **LCSW**	Batch ID: **72295**	RunNo: **93535**							
Prep Date: **12/23/2022**	Analysis Date: **12/23/2022**	SeqNo: **3374381**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0054	0.00020	0.005000	0	108	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212A11**

12-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-72313**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **72313**	RunNo: **93609**							
Prep Date: **12/27/2022**	Analysis Date: **12/27/2022**	SeqNo: **3379199**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-72313**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **LCSW**	Batch ID: **72313**	RunNo: **93609**							
Prep Date: **12/27/2022**	Analysis Date: **12/27/2022**	SeqNo: **3379200**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.084	0.010	0.1000	0	83.7	70	130			

Sample ID: **LCSD-72313**	SampType: **LCSD**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **LCSS02**	Batch ID: **72313**	RunNo: **93609**							
Prep Date: **12/27/2022**	Analysis Date: **12/27/2022**	SeqNo: **3379201**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.13	0.010	0.1000	0	126	70	130	40.2	20	R

Sample ID: **MB-72313**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **72313**	RunNo: **93609**							
Prep Date: **12/27/2022**	Analysis Date: **12/27/2022**	SeqNo: **3379431**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212A11**

12-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-72199**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **PBW**	Batch ID: **72199**	RunNo: **93546**
Prep Date: **12/20/2022**	Analysis Date: **12/22/2022**	SeqNo: **3375094** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.097	0.064								
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.038		0.03750		102	15.9	177			

Sample ID: **LCS-72199**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSW**	Batch ID: **72199**	RunNo: **93546**
Prep Date: **12/20/2022**	Analysis Date: **12/22/2022**	SeqNo: **3375095** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.19	0.064	0.1875	0	102	31.2	125			B
Surr: DNOP	0.016		0.01875		86.1	15.9	177			

Sample ID: **LCSD-72199**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02**	Batch ID: **72199**	RunNo: **93546**
Prep Date: **12/20/2022**	Analysis Date: **12/22/2022**	SeqNo: **3375096** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.21	0.064	0.1875	0	111	31.2	125	8.40	20	B
Surr: DNOP	0.018		0.01875		96.8	15.9	177	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212A11**

12-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **B93549**	RunNo: **93549**
Prep Date:	Analysis Date: **12/27/2022**	SeqNo: **3375200** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	18		20.00		91.1	70	130			

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **B93549**	RunNo: **93549**
Prep Date:	Analysis Date: **12/27/2022**	SeqNo: **3375201** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.51	0.050	0.5000	0	102	80	120			
Surr: BFB	38		20.00		189	70	130			S

Sample ID: **2212a11-002ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **MKTF-30**	Batch ID: **B93549**	RunNo: **93549**
Prep Date:	Analysis Date: **12/27/2022**	SeqNo: **3375207** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.51	0.050	0.5000	0.02000	98.1	70	130			
Surr: BFB	38		20.00		188	70	130			S

Sample ID: **2212a11-002amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **MKTF-30**	Batch ID: **B93549**	RunNo: **93549**
Prep Date:	Analysis Date: **12/27/2022**	SeqNo: **3375208** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.51	0.050	0.5000	0.02000	98.4	70	130	0.274	20	
Surr: BFB	37		20.00		187	70	130	0	0	S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212A11**

12-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R93599**	RunNo: **93599**
Prep Date:	Analysis Date: **12/28/2022**	SeqNo: **3377331** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	97.6	70	130			
Toluene	21	1.0	20.00	0	104	70	130			
Chlorobenzene	20	1.0	20.00	0	101	70	130			
1,1-Dichloroethene	18	1.0	20.00	0	91.4	70	130			
Trichloroethene (TCE)	19	1.0	20.00	0	95.2	70	130			
Surr: 1,2-Dichloroethane-d4	9.6		10.00		96.1	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		113	70	130			
Surr: Dibromofluoromethane	8.6		10.00		86.3	70	130			
Surr: Toluene-d8	10		10.00		104	70	130			

Sample ID: **2212a11-002ams**	SampType: **MS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **MKTF-30**	Batch ID: **R93599**	RunNo: **93599**
Prep Date:	Analysis Date: **12/28/2022**	SeqNo: **3377342** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	103	70	130			
Toluene	21	1.0	20.00	0	105	70	130			
Chlorobenzene	20	1.0	20.00	0	100	70	130			
1,1-Dichloroethene	22	1.0	20.00	1.372	102	70	130			
Trichloroethene (TCE)	21	1.0	20.00	0.9510	101	70	130			
Surr: 1,2-Dichloroethane-d4	9.9		10.00		99.1	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		109	70	130			
Surr: Dibromofluoromethane	9.7		10.00		96.6	70	130			
Surr: Toluene-d8	10		10.00		104	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R93599**	RunNo: **93599**
Prep Date:	Analysis Date: **12/28/2022**	SeqNo: **3377351** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212A11**

12-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R93599**	RunNo: **93599**
Prep Date:	Analysis Date: **12/28/2022**	SeqNo: **3377351** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212A11**

12-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R93599**	RunNo: **93599**
Prep Date:	Analysis Date: **12/28/2022**	SeqNo: **3377351** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.9		10.00		98.6	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		111	70	130			
Surr: Dibromofluoromethane	9.5		10.00		95.4	70	130			
Surr: Toluene-d8	11		10.00		109	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212A11**

12-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb-72138**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **72138**	RunNo: **93478**
Prep Date: **12/16/2022**	Analysis Date: **12/21/2022**	SeqNo: **3371393** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Anthracene	ND	10								
Benz(a)anthracene	ND	5.0								
Benzo(b)fluoranthene	ND	10								
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	10								
2,4-Dinitrophenol	ND	20								
Fluoranthene	ND	10								
Fluorene	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
1-Methylnaphthalene	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
Naphthalene	ND	5.0								
Phenanthrene	ND	10								
Phenol	ND	20								
Pyrene	ND	10								
Pyridine	ND	40								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	78		200.0		38.8	15	84.5			
Surr: Phenol-d5	65		200.0		32.3	15	67			
Surr: 2,4,6-Tribromophenol	110		200.0		53.5	15	108			
Surr: Nitrobenzene-d5	52		100.0		51.9	16.8	112			
Surr: 2-Fluorobiphenyl	42		100.0		42.4	15	101			
Surr: 4-Terphenyl-d14	89		100.0		88.9	34.4	134			

Sample ID: **lcs-72138**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **72138**	RunNo: **93478**
Prep Date: **12/16/2022**	Analysis Date: **12/21/2022**	SeqNo: **3371394** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212A11**

12-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **lcs-72138**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **72138**	RunNo: **93478**
Prep Date: **12/16/2022**	Analysis Date: **12/21/2022**	SeqNo: **3371394** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	56	10	100.0	0	55.7	21.3	104			
1,4-Dichlorobenzene	37	5.0	100.0	0	37.2	15	89.8			
Phenol	79	20	200.0	0	39.3	17	61.1			
Pyrene	85	10	100.0	0	85.1	61	123			
Surr: 2-Fluorophenol	98		200.0		49.2	15	84.5			
Surr: Phenol-d5	76		200.0		37.8	15	67			
Surr: 2,4,6-Tribromophenol	150		200.0		76.7	15	108			
Surr: Nitrobenzene-d5	63		100.0		63.2	16.8	112			
Surr: 2-Fluorobiphenyl	57		100.0		56.7	15	101			
Surr: 4-Terphenyl-d14	100		100.0		100	34.4	134			

Sample ID: **lcsd-72138**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **72138**	RunNo: **93478**
Prep Date: **12/16/2022**	Analysis Date: **12/21/2022**	SeqNo: **3371395** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	71	10	100.0	0	71.4	21.3	104	24.7	45.3	
1,4-Dichlorobenzene	47	5.0	100.0	0	46.7	15	89.8	22.6	39.6	
Phenol	93	20	200.0	0	46.6	17	61.1	16.9	42.5	
Pyrene	92	10	100.0	0	92.0	61	123	7.71	11.8	
Surr: 2-Fluorophenol	110		200.0		53.8	15	84.5	0	0	
Surr: Phenol-d5	86		200.0		42.9	15	67	0	0	
Surr: 2,4,6-Tribromophenol	180		200.0		87.9	15	108	0	0	
Surr: Nitrobenzene-d5	75		100.0		74.7	16.8	112	0	0	
Surr: 2-Fluorobiphenyl	67		100.0		67.4	15	101	0	0	
Surr: 4-Terphenyl-d14	110		100.0		108	34.4	134	0	0	

Sample ID: **mb-72239**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **72239**	RunNo: **93784**
Prep Date: **12/21/2022**	Analysis Date: **1/6/2023**	SeqNo: **3385637** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Anthracene	ND	10								
Benz(a)anthracene	ND	5.0								
Benzo(b)fluoranthene	ND	10								
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212A11**

12-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb-72239**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **72239**	RunNo: **93784**
Prep Date: **12/21/2022**	Analysis Date: **1/6/2023**	SeqNo: **3385637** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	10								
2,4-Dinitrophenol	ND	20								
Fluoranthene	ND	10								
Fluorene	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
1-Methylnaphthalene	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
Naphthalene	ND	5.0								
Phenanthrene	ND	10								
Phenol	ND	20								
Pyrene	ND	10								
Pyridine	ND	40								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	81		200.0		40.3	15	84.5			
Surr: Phenol-d5	63		200.0		31.5	15	67			
Surr: 2,4,6-Tribromophenol	130		200.0		63.3	15	108			
Surr: Nitrobenzene-d5	52		100.0		52.3	16.8	112			
Surr: 2-Fluorobiphenyl	45		100.0		44.7	15	101			
Surr: 4-Terphenyl-d14	80		100.0		80.1	34.4	134			

Sample ID: **lcs-72239**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **72239**	RunNo: **93784**
Prep Date: **12/21/2022**	Analysis Date: **1/6/2023**	SeqNo: **3385638** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	56	10	100.0	0	55.7	21.3	104			
1,4-Dichlorobenzene	39	5.0	100.0	0	38.9	15	89.8			
Phenol	77	20	200.0	0	38.4	17	61.1			
Pyrene	79	10	100.0	0	79.3	61	123			
Surr: 2-Fluorophenol	98		200.0		48.8	15	84.5			
Surr: Phenol-d5	77		200.0		38.3	15	67			
Surr: 2,4,6-Tribromophenol	160		200.0		80.5	15	108			
Surr: Nitrobenzene-d5	69		100.0		68.7	16.8	112			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212A11**

12-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **lcs-72239**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **72239**	RunNo: **93784**
Prep Date: **12/21/2022**	Analysis Date: **1/6/2023**	SeqNo: **3385638** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorobiphenyl	62		100.0		61.9	15	101			
Surr: 4-Terphenyl-d14	100		100.0		101	34.4	134			

Sample ID: **lcsd-72239**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **72239**	RunNo: **93784**
Prep Date: **12/21/2022**	Analysis Date: **1/6/2023**	SeqNo: **3385639** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	66	10	100.0	0	66.3	21.3	104	17.4	45.3	
1,4-Dichlorobenzene	45	5.0	100.0	0	45.1	15	89.8	14.8	39.6	
Phenol	91	20	200.0	0	45.3	17	61.1	16.4	42.5	
Pyrene	94	10	100.0	0	93.7	61	123	16.6	11.8	R
Surr: 2-Fluorophenol	110		200.0		57.1	15	84.5	0	0	
Surr: Phenol-d5	86		200.0		43.2	15	67	0	0	
Surr: 2,4,6-Tribromophenol	180		200.0		90.5	15	108	0	0	
Surr: Nitrobenzene-d5	81		100.0		80.9	16.8	112	0	0	
Surr: 2-Fluorobiphenyl	69		100.0		69.2	15	101	0	0	
Surr: 4-Terphenyl-d14	110		100.0		108	34.4	134	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212A11**

12-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb-72138**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **72138**	RunNo: **93434**
Prep Date: **12/16/2022**	Analysis Date: **12/20/2022**	SeqNo: **3369941** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.30								
1-Methylnaphthalene	ND	0.30								
2-Methylnaphthalene	ND	0.30								
Acenaphthene	ND	0.30								
Fluorene	ND	0.30								
Phenanthrene	ND	0.30								
Anthracene	ND	0.30								
Fluoranthene	ND	0.30								
Pyrene	ND	1.0								
Benz(a)anthracene	ND	0.30								
Chrysene	ND	0.30								
Benzo(b)fluoranthene	ND	0.40								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	48		100.0		48.5	15	108			
Surr: 2,4,6-Tribromophenol	83		200.0		41.7	15	112			
Surr: 2-Fluorobiphenyl	42		100.0		42.0	15	107			
Surr: 4-Terphenyl-d14	100		100.0		99.8	15	166			

Sample ID: **LCS-72138-LF**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **72138**	RunNo: **93434**
Prep Date: **12/16/2022**	Analysis Date: **12/20/2022**	SeqNo: **3369942** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.82	0.30	2.000	0	41.0	15	60.5			
Naphthalene	1.3	0.30	2.000	0	66.0	15	78.3			
1-Methylnaphthalene	1.3	0.30	2.000	0	67.0	15	79.6			
2-Methylnaphthalene	1.3	0.30	2.000	0	65.0	15	78.6			
Acenaphthene	1.4	0.30	2.000	0	71.0	15	92			
Fluorene	1.5	0.30	2.000	0	76.0	15	96			
Phenanthrene	1.7	0.30	2.000	0	85.0	21	103			
Anthracene	1.8	0.30	2.000	0	90.0	21.1	106			
Fluoranthene	2.0	0.30	2.000	0	99.0	32.8	119			
Pyrene	1.7	1.0	2.000	0	87.0	34.1	110			
Benz(a)anthracene	2.1	0.30	2.000	0	106	32	132			
Chrysene	1.9	0.30	2.000	0	95.0	31.3	112			
Benzo(b)fluoranthene	2.0	0.40	2.000	0	98.0	34.1	119			
Indeno(1,2,3-cd)pyrene	2.5	0.30	2.000	0	123	24.7	152			
Surr: Nitrobenzene-d5	62		102.0		61.2	15	108			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212A11**

12-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **LCS-72138-LF**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **72138**	RunNo: **93434**
Prep Date: **12/16/2022**	Analysis Date: **12/20/2022**	SeqNo: **3369942** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	93		104.0		89.9	15	112			
Surr: 2-Fluorobiphenyl	54		102.0		52.8	15	107			
Surr: 4-Terphenyl-d14	91		102.0		89.7	15	166			

Sample ID: **LCSD-72138-LF**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02**	Batch ID: **72138**	RunNo: **93434**
Prep Date: **12/16/2022**	Analysis Date: **12/20/2022**	SeqNo: **3369943** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.86	1.0	2.000	0	43.0	15	60.5	4.76	29.7	J
Naphthalene	1.4	0.30	2.000	0	70.0	15	78.3	5.88	31.7	
1-Methylnaphthalene	1.4	0.30	2.000	0	72.0	15	79.6	7.19	31.4	
2-Methylnaphthalene	1.4	0.30	2.000	0	70.0	15	78.6	7.41	30.5	
Acenaphthene	1.6	0.30	2.000	0	78.0	15	92	9.40	30.5	
Fluorene	1.7	0.30	2.000	0	84.0	15	96	10.0	25.1	
Phenanthrene	1.8	0.30	2.000	0	92.0	21	103	7.91	26.4	
Anthracene	1.9	0.30	2.000	0	94.0	21.1	106	4.35	14.4	
Fluoranthene	2.0	0.30	2.000	0	102	32.8	119	2.99	14.8	
Pyrene	1.8	1.0	2.000	0	90.0	34.1	110	3.39	19.2	
Benz(a)anthracene	2.1	0.30	2.000	0	106	32	132	0	29.3	
Chrysene	1.9	0.30	2.000	0	95.0	31.3	112	0	19	
Benzo(b)fluoranthene	2.0	0.40	2.000	0	98.0	34.1	119	0	31.6	
Indeno(1,2,3-cd)pyrene	2.5	0.30	2.000	0	126	24.7	152	2.41	21.3	
Surr: Nitrobenzene-d5	68		102.0		66.6	15	108	0	0	
Surr: 2,4,6-Tribromophenol	100		104.0		95.7	15	112	0	0	
Surr: 2-Fluorobiphenyl	58		102.0		56.5	15	107	0	0	
Surr: 4-Terphenyl-d14	91		102.0		88.8	15	166	0	0	

Sample ID: **mb-72239**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **72239**	RunNo: **93725**
Prep Date: **12/21/2022**	Analysis Date: **1/4/2023**	SeqNo: **3383312** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.30								
1-Methylnaphthalene	ND	0.30								
2-Methylnaphthalene	ND	0.30								
Acenaphthene	ND	0.30								
Fluorene	ND	0.30								
Phenanthrene	ND	0.30								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212A11**

12-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb-72239**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**							
Client ID: **PBW**	Batch ID: **72239**	RunNo: **93725**							
Prep Date: **12/21/2022**	Analysis Date: **1/4/2023**	SeqNo: **3383312**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Anthracene	ND	0.30								
Fluoranthene	ND	0.30								
Pyrene	ND	1.0								
Benz(a)anthracene	ND	0.30								
Chrysene	ND	0.30								
Benzo(b)fluoranthene	ND	0.40								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	53		100.0		52.6	15	108			
Surr: 2,4,6-Tribromophenol	97		200.0		48.6	15	112			
Surr: 2-Fluorobiphenyl	46		100.0		45.8	15	107			
Surr: 4-Terphenyl-d14	91		100.0		90.8	15	166			

Sample ID: **lcs-72239 lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**							
Client ID: **LCSW**	Batch ID: **72239**	RunNo: **93725**							
Prep Date: **12/21/2022**	Analysis Date: **1/4/2023**	SeqNo: **3383313**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.72	0.30	2.000	0	36.0	15	60.5			
Naphthalene	1.2	0.30	2.000	0	58.0	15	78.3			
1-Methylnaphthalene	1.2	0.30	2.000	0	61.0	15	79.6			
2-Methylnaphthalene	1.2	0.30	2.000	0	59.0	15	78.6			
Acenaphthene	1.3	0.30	2.000	0	67.0	15	92			
Fluorene	1.4	0.30	2.000	0	72.0	15	96			
Phenanthrene	1.5	0.30	2.000	0	75.0	21	103			
Anthracene	1.6	0.30	2.000	0	79.0	21.1	106			
Fluoranthene	1.8	0.30	2.000	0	88.0	32.8	119			
Pyrene	1.6	1.0	2.000	0	78.0	34.1	110			
Benz(a)anthracene	1.9	0.30	2.000	0	96.0	32	132			
Chrysene	1.6	0.30	2.000	0	82.0	31.3	112			
Benzo(b)fluoranthene	1.8	0.40	2.000	0	88.0	34.1	119			
Indeno(1,2,3-cd)pyrene	2.4	0.30	2.000	0	120	24.7	152			
Surr: Nitrobenzene-d5	72		102.0		70.9	15	108			
Surr: 2,4,6-Tribromophenol	100		204.0		51.4	15	112			
Surr: 2-Fluorobiphenyl	63		102.0		62.0	15	107			
Surr: 4-Terphenyl-d14	91		102.0		89.0	15	166			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212A11**

12-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **lcsd-72239 lf**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02**	Batch ID: **72239**	RunNo: **93725**
Prep Date: **12/21/2022**	Analysis Date: **1/4/2023**	SeqNo: **3383314** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.52	0.30	2.000	0	26.0	15	60.5	32.3	29.7	R
Naphthalene	0.98	0.30	2.000	0	49.0	15	78.3	16.8	31.7	
1-Methylnaphthalene	1.1	0.30	2.000	0	55.0	15	79.6	10.3	31.4	
2-Methylnaphthalene	1.1	0.30	2.000	0	57.0	15	78.6	3.45	30.5	
Acenaphthene	1.1	0.30	2.000	0	56.0	15	92	17.9	30.5	
Fluorene	1.4	0.30	2.000	0	71.0	15	96	1.40	25.1	
Phenanthrene	1.7	0.30	2.000	0	84.0	21	103	11.3	26.4	
Anthracene	2.0	0.30	2.000	0	99.0	21.1	106	22.5	14.4	R
Fluoranthene	2.3	0.30	2.000	0	113	32.8	119	24.9	14.8	R
Pyrene	2.0	1.0	2.000	0	100	34.1	110	24.7	19.2	R
Benz(a)anthracene	2.1	0.30	2.000	0	107	32	132	10.8	29.3	
Chrysene	1.6	0.30	2.000	0	80.0	31.3	112	2.47	19	
Benzo(b)fluoranthene	1.7	0.40	2.000	0	86.0	34.1	119	2.30	31.6	
Indeno(1,2,3-cd)pyrene	2.6	0.30	2.000	0	131	24.7	152	8.76	21.3	
Surr: Nitrobenzene-d5	58		102.0		56.7	15	108	0	0	
Surr: 2,4,6-Tribromophenol	0		204.0		0	15	112	0	0	S
Surr: 2-Fluorobiphenyl	54		102.0		53.2	15	107	0	0	
Surr: 4-Terphenyl-d14	83		102.0		81.8	15	166	0	0	

Sample ID: **mb-72406**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **72406**	RunNo: **93725**
Prep Date: **1/3/2023**	Analysis Date: **1/5/2023**	SeqNo: **3383328** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	54		100.0		54.1	15	108			
Surr: 2,4,6-Tribromophenol	100		200.0		49.9	15	112			
Surr: 2-Fluorobiphenyl	45		100.0		45.1	15	107			
Surr: 4-Terphenyl-d14	100		100.0		103	15	166			

Sample ID: **lcs-72406-lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **72406**	RunNo: **93725**
Prep Date: **1/3/2023**	Analysis Date: **1/5/2023**	SeqNo: **3383329** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	67		102.0		65.7	15	108			
Surr: 2,4,6-Tribromophenol	110		204.0		55.4	15	112			
Surr: 2-Fluorobiphenyl	57		102.0		56.1	15	107			
Surr: 4-Terphenyl-d14	100		102.0		100	15	166			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212A11**

12-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **lcsd-72406-lf**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02**	Batch ID: **72406**	RunNo: **93725**
Prep Date: **1/3/2023**	Analysis Date: **1/5/2023**	SeqNo: **3383330** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	76		102.0		74.7	15	108	0	0	
Surr: 2,4,6-Tribromophenol	120		204.0		57.9	15	112	0	0	
Surr: 2-Fluorobiphenyl	65		102.0		64.1	15	107	0	0	
Surr: 4-Terphenyl-d14	97		102.0		95.1	15	166	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 3047 of 3808

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Marathon | Work Order Number: 2212A11 | ReptNo: 1

Received By: Tracy Casarrubias 12/15/2022 7:40:00 AM

Completed By: Tracy Casarrubias 12/15/2022 8:30:31 AM

Reviewed By: JA 12-16-22

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	See notation
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☑	No ☐	NA ☐
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: 10 5 (<2 or >12 unless noted)

Adjusted? yes

Checked by: See notation

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: ____ Date: ____

By Whom: ____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: ____

Client Instructions: ____

16. Additional remarks: added ~6.5mL HNO3 to cond for metals analysis, checked for proper pH c See notation

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.6	Good	Yes			
2	3.1	Good	Yes			
3	0.4	Good	Yes			

Received by OCD: 4/21/2023 9:21:57 AM

Released to Imaging: 4/21/2023 9:40:26 AM

Chain-of-Custody Record

Client: Marathon Gallup Refinery

Mailing Address: 92 Giant Crossing Road
Jamestown,NM,87301

Phone #: 806-640-1823

email or Fax#:

QA/QC Package:
X Standard ☐ Level 4 (Full Validation)

Accreditation:
☐ NELAC ☐ Az Compliance ☐ Other

X EDD (Type)

X Standard Rush

Project Name:
2022 GW Sampling 4th Quarter

Project #: 697-080-001

Project Manager:
Lesli Alexander

Sampler:

On Ice: X Yes ☐ No

# of Coolers: 3

Cooler Temp(including CF): See Checklist

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2212A11	See Analyte	8260B VOC	8270C:SVOC	8270CSIM: PAH, 1,4 Dioxane	8015: TPH GRO/DRO/MRO	E200.7: Metals	E200.7: Dissolved Metals	E245.1 Mercury	E504.1 EDB	E335.4: Cyanide Subbed		537.1:PFAS	SM 5201B: BOD	410.4: COD	
12/15	9:30		EB-12-15-22	13		001		X	X	X	X	X	X	X	X	X					
12/15	16:00		MKTP-30	13		002		X	X	X	X	X	X	X	X	X					
12/15	16:30		STP-1-NW	13		003		X	X	X	X	X	X	X	X	X					
12/15	11:16		OPTS-1	13		004		X	X	X	X	X	X	X	X	X					
12/15	11:10		FB-12-15-22	3		005		X	X												
12/15	—		DUP-12-15-22	13		006		X	X	X	X	X	X	X	X	X					

Date	Time:	Relinquished by:	Received by:	Via:	Date	Time
12/15	1:00	Hilario Trejo		Courier		
Date:	Time:	Relinquished by:	Received by:	Via:	12/16/22 Date	9:40 Time

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

January 17, 2023

Lesli Alexander

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX: (505) 632-3911

RE: 2022 GW Sampling 4th Quarter OrderNo.: 2212D48

Dear Lesli Alexander:

Hall Environmental Analysis Laboratory received 11 sample(s) on 12/23/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **2212D48**
Date: **1/17/2023**

CLIENT: Marathon
Project: 2022 GW Sampling 4th Quarter

Analytical Notes Regarding EPA Method 8015D DRO/MRO:
The method blank had a low level detection for DRO. Samples with detections are flagged with a "B". The laboratory control spike (LCS) had an elevated recovery.

"S" flagged surrogates/spikes denote that the analyte recovery was outstide of the standard limits.

Analytical Notes Regarding EPA Method 8270 and 8270 SIMS:
1-Methylnaphthalene, 2-Methylnaphthalene and Naphthalene were reported by EPA Method 8270 instead of EPA Method 8270SIMs becuase of their elevated concentrations for samples OW-1

Analytical Notes Regarding EPA Method 8270 and 8270 SIMS:
1-Methylnaphthalene was reported by EPA Method 8270 instead of EPA Method 8270SIMs becuase of its elevated concentration for sample BW-5C

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-22-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 8:30:00 AM
Lab ID: 2212D48-001A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	12/28/2022 9:38:31 PM	R93580
Surr: BFB	93.9	0	70-130		%Rec	1	12/28/2022 9:38:31 PM	R93580
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	1.0	1.0		µg/L	1	1/3/2023 4:15:14 PM	R93684
Toluene	ND	1.0	1.0		µg/L	1	1/3/2023 4:15:14 PM	R93684
Ethylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 4:15:14 PM	R93684
Methyl tert-butyl ether (MTBE)	ND	1.0	1.0		µg/L	1	1/3/2023 4:15:14 PM	R93684
1,2,4-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 4:15:14 PM	R93684
1,3,5-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 4:15:14 PM	R93684
1,2-Dichloroethane (EDC)	ND	1.0	1.0		µg/L	1	1/3/2023 4:15:14 PM	R93684
Acetone	ND	10	10		µg/L	1	1/3/2023 4:15:14 PM	R93684
Bromomethane	ND	3.0	3.0		µg/L	1	1/3/2023 4:15:14 PM	R93684
2-Butanone	ND	10	10		µg/L	1	1/3/2023 4:15:14 PM	R93684
Carbon disulfide	ND	10	10		µg/L	1	1/3/2023 4:15:14 PM	R93684
Chlorobenzene	ND	1.0	1.0		µg/L	1	1/3/2023 4:15:14 PM	R93684
Chloroform	ND	1.0	1.0		µg/L	1	1/3/2023 4:15:14 PM	R93684
Chloromethane	ND	3.0	3.0		µg/L	1	1/3/2023 4:15:14 PM	R93684
cis-1,2-DCE	ND	1.0	1.0		µg/L	1	1/3/2023 4:15:14 PM	R93684
1,1-Dichloroethane	ND	1.0	1.0		µg/L	1	1/3/2023 4:15:14 PM	R93684
1,1-Dichloroethene	ND	1.0	1.0		µg/L	1	1/3/2023 4:15:14 PM	R93684
Isopropylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 4:15:14 PM	R93684
4-Isopropyltoluene	ND	1.0	1.0		µg/L	1	1/3/2023 4:15:14 PM	R93684
Methylene Chloride	ND	3.0	3.0		µg/L	1	1/3/2023 4:15:14 PM	R93684
n-Butylbenzene	ND	3.0	3.0		µg/L	1	1/3/2023 4:15:14 PM	R93684
n-Propylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 4:15:14 PM	R93684
sec-Butylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 4:15:14 PM	R93684
Styrene	ND	1.0	1.0		µg/L	1	1/3/2023 4:15:14 PM	R93684
Tetrachloroethene (PCE)	ND	1.0	1.0		µg/L	1	1/3/2023 4:15:14 PM	R93684
1,1,1-Trichloroethane	ND	1.0	1.0		µg/L	1	1/3/2023 4:15:14 PM	R93684
Trichloroethene (TCE)	ND	1.0	1.0		µg/L	1	1/3/2023 4:15:14 PM	R93684
Vinyl chloride	ND	1.0	1.0		µg/L	1	1/3/2023 4:15:14 PM	R93684
Xylenes, Total	ND	1.5	1.5		µg/L	1	1/3/2023 4:15:14 PM	R93684
Surr: 1,2-Dichloroethane-d4	96.5	0	70-130		%Rec	1	1/3/2023 4:15:14 PM	R93684
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	1	1/3/2023 4:15:14 PM	R93684
Surr: Dibromofluoromethane	99.2	0	70-130		%Rec	1	1/3/2023 4:15:14 PM	R93684
Surr: Toluene-d8	98.9	0	70-130		%Rec	1	1/3/2023 4:15:14 PM	R93684

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-22-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 8:30:00 AM
Lab ID: 2212D48-001B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	12/30/2022 1:41:54 AM	72358

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-22-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 8:30:00 AM
Lab ID: 2212D48-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.019	0.016	0.064	BJE	mg/L	1	12/30/2022 11:14:04 AM	72336
Motor Oil Range Organics (MRO)	ND	0.052	0.080	E	mg/L	1	12/30/2022 11:14:04 AM	72336
Surr: DNOP	97.2	0	15.9-177	E	%Rec	1	12/30/2022 11:14:04 AM	72336
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	1/4/2023 2:59:49 PM	72320
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	1/4/2023 2:59:49 PM	72320
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	1/4/2023 2:59:49 PM	72320
Di-n-octyl phthalate	ND	12	20		µg/L	1	1/4/2023 2:59:49 PM	72320
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	1/4/2023 2:59:49 PM	72320
Diethyl phthalate	ND	6.0	10		µg/L	1	1/4/2023 2:59:49 PM	72320
Dimethyl phthalate	ND	6.0	10		µg/L	1	1/4/2023 2:59:49 PM	72320
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	1/4/2023 2:59:49 PM	72320
2,4-Dinitrophenol	ND	16	20		µg/L	1	1/4/2023 2:59:49 PM	72320
2-Methylphenol	ND	5.0	10		µg/L	1	1/4/2023 2:59:49 PM	72320
3+4-Methylphenol	ND	5.1	10		µg/L	1	1/4/2023 2:59:49 PM	72320
Phenol	ND	18	20		µg/L	1	1/4/2023 2:59:49 PM	72320
Pyridine	ND	14	40		µg/L	1	1/4/2023 2:59:49 PM	72320
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	1/4/2023 2:59:49 PM	72320
Surr: 2-Fluorophenol	43.4	0	15-84.5		%Rec	1	1/4/2023 2:59:49 PM	72320
Surr: Phenol-d5	32.8	0	15-67		%Rec	1	1/4/2023 2:59:49 PM	72320
Surr: 2,4,6-Tribromophenol	57.6	0	15-108		%Rec	1	1/4/2023 2:59:49 PM	72320
Surr: Nitrobenzene-d5	61.1	0	16.8-112		%Rec	1	1/4/2023 2:59:49 PM	72320
Surr: 2-Fluorobiphenyl	52.3	0	15-101		%Rec	1	1/4/2023 2:59:49 PM	72320
Surr: 4-Terphenyl-d14	88.1	0	34.4-134		%Rec	1	1/4/2023 2:59:49 PM	72320
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	1/3/2023 4:27:00 PM	72320
Naphthalene	ND	0.20	0.30		µg/L	1	1/3/2023 4:27:00 PM	72320
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	1/3/2023 4:27:00 PM	72320
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	1/3/2023 4:27:00 PM	72320
Acenaphthene	ND	0.14	0.30		µg/L	1	1/3/2023 4:27:00 PM	72320
Fluorene	ND	0.095	0.30		µg/L	1	1/3/2023 4:27:00 PM	72320
Phenanthrene	ND	0.16	0.30		µg/L	1	1/3/2023 4:27:00 PM	72320
Anthracene	ND	0.14	0.30		µg/L	1	1/3/2023 4:27:00 PM	72320
Fluoranthene	ND	0.14	0.30		µg/L	1	1/3/2023 4:27:00 PM	72320
Pyrene	ND	0.32	1.0		µg/L	1	1/3/2023 4:27:00 PM	72320
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	1/3/2023 4:27:00 PM	72320
Chrysene	ND	0.25	0.30		µg/L	1	1/3/2023 4:27:00 PM	72320
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	1/3/2023 4:27:00 PM	72320
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	1/3/2023 4:27:00 PM	72320

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-22-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 8:30:00 AM
Lab ID: 2212D48-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	58.5	0	15-108		%Rec	1	1/3/2023 4:27:00 PM	72320
Surr: 2-Fluorobiphenyl	52.1	0	15-107		%Rec	1	1/3/2023 4:27:00 PM	72320
Surr: 4-Terphenyl-d14	95.1	0	15-166		%Rec	1	1/3/2023 4:27:00 PM	72320

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-22-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 8:30:00 AM
Lab ID: 2212D48-001D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	ND	0.0016	0.0030		mg/L	1	1/3/2023 11:31:00 AM	72387
Beryllium	ND	0.00060	0.0020		mg/L	1	1/3/2023 11:31:00 AM	72387
Cadmium	ND	0.0018	0.0020		mg/L	1	1/3/2023 11:31:00 AM	72387
Chromium	ND	0.0020	0.0060		mg/L	1	1/3/2023 11:31:00 AM	72387
Cobalt	ND	0.0035	0.0060		mg/L	1	1/3/2023 11:31:00 AM	72387
Nickel	ND	0.0053	0.010		mg/L	1	1/3/2023 11:31:00 AM	72387
Silver	ND	0.0018	0.0050		mg/L	1	1/3/2023 11:31:00 AM	72387
Vanadium	ND	0.0035	0.050		mg/L	1	1/3/2023 11:31:00 AM	72387
Zinc	ND	0.0039	0.010		mg/L	1	1/3/2023 11:31:00 AM	72387
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	1/3/2023 12:40:52 PM	72387
Arsenic	ND	0.00022	0.0010		mg/L	1	1/3/2023 12:40:52 PM	72387
Lead	ND	0.00019	0.00050		mg/L	1	1/3/2023 12:40:52 PM	72387
Selenium	ND	0.00089	0.0010		mg/L	1	1/3/2023 12:40:52 PM	72387
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00014	0.000091	0.00020	J	mg/L	1	1/6/2023 7:41:19 AM	72445

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-22-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 8:30:00 AM
Lab ID: 2212D48-001E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	ND	0.0011	0.0020		mg/L	1	1/5/2023 4:02:59 PM	A93766
Beryllium	ND	0.00059	0.0020		mg/L	1	1/5/2023 4:02:59 PM	A93766
Cadmium	ND	0.00098	0.0020		mg/L	1	1/5/2023 4:02:59 PM	A93766
Chromium	ND	0.0020	0.0060		mg/L	1	1/5/2023 4:02:59 PM	A93766
Cobalt	ND	0.0024	0.0060		mg/L	1	1/5/2023 4:02:59 PM	A93766
Nickel	ND	0.0033	0.010		mg/L	1	1/5/2023 4:02:59 PM	A93766
Silver	ND	0.0013	0.0050		mg/L	1	1/5/2023 4:02:59 PM	A93766
Vanadium	ND	0.0017	0.050		mg/L	1	1/5/2023 4:02:59 PM	A93766
Zinc	ND	0.0032	0.010		mg/L	1	1/5/2023 4:02:59 PM	A93766
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00045	0.0010		mg/L	1	1/12/2023 12:42:35 PM	A93915
Arsenic	ND	0.00057	0.0010		mg/L	1	1/12/2023 12:42:35 PM	A93915
Lead	ND	0.000099	0.00050		mg/L	1	1/12/2023 12:42:35 PM	A93915
Selenium	ND	0.00056	0.0010		mg/L	1	1/12/2023 12:42:35 PM	A93915
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00013	0.000091	0.00020	J	mg/L	1	1/6/2023 7:47:47 AM	72445

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-1
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 8:55:00 AM
Lab ID: 2212D48-002A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	12/28/2022 10:01:59 PM	R93580
Surr: BFB	96.0	0	70-130		%Rec	1	12/28/2022 10:01:59 PM	R93580
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	1.0	1.0		µg/L	1	1/3/2023 4:42:20 PM	R93684
Toluene	ND	1.0	1.0		µg/L	1	1/3/2023 4:42:20 PM	R93684
Ethylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 4:42:20 PM	R93684
Methyl tert-butyl ether (MTBE)	ND	1.0	1.0		µg/L	1	1/3/2023 4:42:20 PM	R93684
1,2,4-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 4:42:20 PM	R93684
1,3,5-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 4:42:20 PM	R93684
1,2-Dichloroethane (EDC)	ND	1.0	1.0		µg/L	1	1/3/2023 4:42:20 PM	R93684
Acetone	ND	10	10		µg/L	1	1/3/2023 4:42:20 PM	R93684
Bromomethane	ND	3.0	3.0		µg/L	1	1/3/2023 4:42:20 PM	R93684
2-Butanone	ND	10	10		µg/L	1	1/3/2023 4:42:20 PM	R93684
Carbon disulfide	ND	10	10		µg/L	1	1/3/2023 4:42:20 PM	R93684
Chlorobenzene	ND	1.0	1.0		µg/L	1	1/3/2023 4:42:20 PM	R93684
Chloroform	ND	1.0	1.0		µg/L	1	1/3/2023 4:42:20 PM	R93684
Chloromethane	ND	3.0	3.0		µg/L	1	1/3/2023 4:42:20 PM	R93684
cis-1,2-DCE	ND	1.0	1.0		µg/L	1	1/3/2023 4:42:20 PM	R93684
1,1-Dichloroethane	ND	1.0	1.0		µg/L	1	1/3/2023 4:42:20 PM	R93684
1,1-Dichloroethene	ND	1.0	1.0		µg/L	1	1/3/2023 4:42:20 PM	R93684
Isopropylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 4:42:20 PM	R93684
4-Isopropyltoluene	ND	1.0	1.0		µg/L	1	1/3/2023 4:42:20 PM	R93684
Methylene Chloride	ND	3.0	3.0		µg/L	1	1/3/2023 4:42:20 PM	R93684
n-Butylbenzene	ND	3.0	3.0		µg/L	1	1/3/2023 4:42:20 PM	R93684
n-Propylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 4:42:20 PM	R93684
sec-Butylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 4:42:20 PM	R93684
Styrene	ND	1.0	1.0		µg/L	1	1/3/2023 4:42:20 PM	R93684
Tetrachloroethene (PCE)	ND	1.0	1.0		µg/L	1	1/3/2023 4:42:20 PM	R93684
1,1,1-Trichloroethane	ND	1.0	1.0		µg/L	1	1/3/2023 4:42:20 PM	R93684
Trichloroethene (TCE)	ND	1.0	1.0		µg/L	1	1/3/2023 4:42:20 PM	R93684
Vinyl chloride	ND	1.0	1.0		µg/L	1	1/3/2023 4:42:20 PM	R93684
Xylenes, Total	ND	1.5	1.5		µg/L	1	1/3/2023 4:42:20 PM	R93684
Surr: 1,2-Dichloroethane-d4	119	0	70-130		%Rec	1	1/3/2023 4:42:20 PM	R93684
Surr: 4-Bromofluorobenzene	106	0	70-130		%Rec	1	1/3/2023 4:42:20 PM	R93684
Surr: Dibromofluoromethane	104	0	70-130		%Rec	1	1/3/2023 4:42:20 PM	R93684
Surr: Toluene-d8	92.6	0	70-130		%Rec	1	1/3/2023 4:42:20 PM	R93684

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-1
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 8:55:00 AM
Lab ID: 2212D48-002B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	12/30/2022 2:11:23 AM	72358

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-1
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 8:55:00 AM
Lab ID: 2212D48-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.028	0.016	0.064	BJE	mg/L	1	12/30/2022 11:37:45 AM	72336
Motor Oil Range Organics (MRO)	ND	0.052	0.080	E	mg/L	1	12/30/2022 11:37:45 AM	72336
Surr: DNOP	98.7	0	15.9-177	E	%Rec	1	12/30/2022 11:37:45 AM	72336
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	1/4/2023 3:41:31 PM	72320
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	1/4/2023 3:41:31 PM	72320
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	1/4/2023 3:41:31 PM	72320
Di-n-octyl phthalate	ND	12	20		µg/L	1	1/4/2023 3:41:31 PM	72320
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	1/4/2023 3:41:31 PM	72320
Diethyl phthalate	ND	6.0	10		µg/L	1	1/4/2023 3:41:31 PM	72320
Dimethyl phthalate	ND	6.0	10		µg/L	1	1/4/2023 3:41:31 PM	72320
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	1/4/2023 3:41:31 PM	72320
2,4-Dinitrophenol	ND	16	20		µg/L	1	1/4/2023 3:41:31 PM	72320
1-Methylnaphthalene	ND	4.3	5.0		µg/L	1	1/4/2023 3:41:31 PM	72320
2-Methylnaphthalene	ND	4.2	5.0		µg/L	1	1/4/2023 3:41:31 PM	72320
2-Methylphenol	ND	5.0	10		µg/L	1	1/4/2023 3:41:31 PM	72320
3+4-Methylphenol	ND	5.1	10		µg/L	1	1/4/2023 3:41:31 PM	72320
Naphthalene	ND	3.2	5.0		µg/L	1	1/4/2023 3:41:31 PM	72320
Phenol	ND	18	20		µg/L	1	1/4/2023 3:41:31 PM	72320
Pyridine	ND	14	40		µg/L	1	1/4/2023 3:41:31 PM	72320
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	1/4/2023 3:41:31 PM	72320
Surr: 2-Fluorophenol	43.0	0	15-84.5		%Rec	1	1/4/2023 3:41:31 PM	72320
Surr: Phenol-d5	32.7	0	15-67		%Rec	1	1/4/2023 3:41:31 PM	72320
Surr: 2,4,6-Tribromophenol	60.5	0	15-108		%Rec	1	1/4/2023 3:41:31 PM	72320
Surr: Nitrobenzene-d5	56.0	0	16.8-112		%Rec	1	1/4/2023 3:41:31 PM	72320
Surr: 2-Fluorobiphenyl	48.9	0	15-101		%Rec	1	1/4/2023 3:41:31 PM	72320
Surr: 4-Terphenyl-d14	78.7	0	34.4-134		%Rec	1	1/4/2023 3:41:31 PM	72320
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	1/3/2023 5:11:00 PM	72320
Acenaphthene	ND	0.14	0.30		µg/L	1	1/3/2023 5:11:00 PM	72320
Fluorene	ND	0.095	0.30		µg/L	1	1/3/2023 5:11:00 PM	72320
Phenanthrene	ND	0.16	0.30		µg/L	1	1/3/2023 5:11:00 PM	72320
Anthracene	ND	0.14	0.30		µg/L	1	1/3/2023 5:11:00 PM	72320
Fluoranthene	ND	0.14	0.30		µg/L	1	1/3/2023 5:11:00 PM	72320
Pyrene	ND	0.32	1.0		µg/L	1	1/3/2023 5:11:00 PM	72320
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	1/3/2023 5:11:00 PM	72320
Chrysene	ND	0.25	0.30		µg/L	1	1/3/2023 5:11:00 PM	72320
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	1/3/2023 5:11:00 PM	72320
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	1/3/2023 5:11:00 PM	72320

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-1
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 8:55:00 AM
Lab ID: 2212D48-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	53.3	0	15-108		%Rec	1	1/3/2023 5:11:00 PM	72320
Surr: 2-Fluorobiphenyl	47.2	0	15-107		%Rec	1	1/3/2023 5:11:00 PM	72320
Surr: 4-Terphenyl-d14	86.0	0	15-166		%Rec	1	1/3/2023 5:11:00 PM	72320

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-1
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 8:55:00 AM
Lab ID: 2212D48-002D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.034	0.0016	0.0030		mg/L	1	1/3/2023 11:34:18 AM	72387
Beryllium	ND	0.00060	0.0020		mg/L	1	1/3/2023 11:34:18 AM	72387
Cadmium	ND	0.0018	0.0020		mg/L	1	1/3/2023 11:34:18 AM	72387
Chromium	ND	0.0020	0.0060		mg/L	1	1/3/2023 11:34:18 AM	72387
Cobalt	ND	0.0035	0.0060		mg/L	1	1/3/2023 11:34:18 AM	72387
Nickel	ND	0.0053	0.010		mg/L	1	1/3/2023 11:34:18 AM	72387
Silver	ND	0.0018	0.0050		mg/L	1	1/3/2023 11:34:18 AM	72387
Vanadium	0.049	0.0035	0.050	J	mg/L	1	1/3/2023 11:34:18 AM	72387
Zinc	ND	0.0039	0.010		mg/L	1	1/3/2023 11:34:18 AM	72387
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	1/3/2023 1:40:37 PM	72387
Arsenic	0.00088	0.00022	0.0010	J	mg/L	1	1/3/2023 1:40:37 PM	72387
Lead	ND	0.00019	0.00050		mg/L	1	1/3/2023 1:40:37 PM	72387
Selenium	0.0015	0.00089	0.0010		mg/L	1	1/5/2023 2:55:45 PM	72387
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00012	0.000091	0.00020	J	mg/L	1	1/6/2023 7:49:58 AM	72445

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-1
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 8:55:00 AM
Lab ID: 2212D48-002E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.035	0.0011	0.0020		mg/L	1	1/5/2023 4:28:53 PM	A93766
Beryllium	ND	0.00059	0.0020		mg/L	1	1/5/2023 4:28:53 PM	A93766
Cadmium	ND	0.00098	0.0020		mg/L	1	1/5/2023 4:28:53 PM	A93766
Chromium	ND	0.0020	0.0060		mg/L	1	1/5/2023 4:28:53 PM	A93766
Cobalt	ND	0.0024	0.0060		mg/L	1	1/5/2023 4:28:53 PM	A93766
Nickel	ND	0.0033	0.010		mg/L	1	1/5/2023 4:28:53 PM	A93766
Silver	ND	0.0013	0.0050		mg/L	1	1/5/2023 4:28:53 PM	A93766
Vanadium	0.044	0.0017	0.050	J	mg/L	1	1/5/2023 4:28:53 PM	A93766
Zinc	ND	0.0032	0.010		mg/L	1	1/5/2023 4:28:53 PM	A93766
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00045	0.0010		mg/L	1	1/12/2023 12:47:50 PM	A93915
Arsenic	0.00078	0.00057	0.0010	J	mg/L	1	1/12/2023 12:47:50 PM	A93915
Lead	ND	0.000099	0.00050		mg/L	1	1/12/2023 12:47:50 PM	A93915
Selenium	0.0047	0.00056	0.0010		mg/L	1	1/12/2023 12:47:50 PM	A93915
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00014	0.000091	0.00020	J	mg/L	1	1/6/2023 7:52:05 AM	72445

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-4B
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 9:25:00 AM
Lab ID: 2212D48-003A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	12/28/2022 11:12:35 PM	R93580
Surr: BFB	94.8	0	70-130		%Rec	1	12/28/2022 11:12:35 PM	R93580
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	1.0	1.0		µg/L	1	1/3/2023 5:09:26 PM	R93684
Toluene	ND	1.0	1.0		µg/L	1	1/3/2023 5:09:26 PM	R93684
Ethylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 5:09:26 PM	R93684
Methyl tert-butyl ether (MTBE)	ND	1.0	1.0		µg/L	1	1/3/2023 5:09:26 PM	R93684
1,2,4-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 5:09:26 PM	R93684
1,3,5-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 5:09:26 PM	R93684
1,2-Dichloroethane (EDC)	ND	1.0	1.0		µg/L	1	1/3/2023 5:09:26 PM	R93684
Acetone	ND	10	10		µg/L	1	1/3/2023 5:09:26 PM	R93684
Bromomethane	ND	3.0	3.0		µg/L	1	1/3/2023 5:09:26 PM	R93684
2-Butanone	ND	10	10		µg/L	1	1/3/2023 5:09:26 PM	R93684
Carbon disulfide	ND	10	10		µg/L	1	1/3/2023 5:09:26 PM	R93684
Chlorobenzene	ND	1.0	1.0		µg/L	1	1/3/2023 5:09:26 PM	R93684
Chloroform	ND	1.0	1.0		µg/L	1	1/3/2023 5:09:26 PM	R93684
Chloromethane	ND	3.0	3.0		µg/L	1	1/3/2023 5:09:26 PM	R93684
cis-1,2-DCE	ND	1.0	1.0		µg/L	1	1/3/2023 5:09:26 PM	R93684
1,1-Dichloroethane	ND	1.0	1.0		µg/L	1	1/3/2023 5:09:26 PM	R93684
1,1-Dichloroethene	ND	1.0	1.0		µg/L	1	1/3/2023 5:09:26 PM	R93684
Isopropylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 5:09:26 PM	R93684
4-Isopropyltoluene	ND	1.0	1.0		µg/L	1	1/3/2023 5:09:26 PM	R93684
Methylene Chloride	ND	3.0	3.0		µg/L	1	1/3/2023 5:09:26 PM	R93684
n-Butylbenzene	ND	3.0	3.0		µg/L	1	1/3/2023 5:09:26 PM	R93684
n-Propylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 5:09:26 PM	R93684
sec-Butylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 5:09:26 PM	R93684
Styrene	ND	1.0	1.0		µg/L	1	1/3/2023 5:09:26 PM	R93684
Tetrachloroethene (PCE)	ND	1.0	1.0		µg/L	1	1/3/2023 5:09:26 PM	R93684
1,1,1-Trichloroethane	ND	1.0	1.0		µg/L	1	1/3/2023 5:09:26 PM	R93684
Trichloroethene (TCE)	ND	1.0	1.0		µg/L	1	1/3/2023 5:09:26 PM	R93684
Vinyl chloride	ND	1.0	1.0		µg/L	1	1/3/2023 5:09:26 PM	R93684
Xylenes, Total	ND	1.5	1.5		µg/L	1	1/3/2023 5:09:26 PM	R93684
Surr: 1,2-Dichloroethane-d4	96.8	0	70-130		%Rec	1	1/3/2023 5:09:26 PM	R93684
Surr: 4-Bromofluorobenzene	96.3	0	70-130		%Rec	1	1/3/2023 5:09:26 PM	R93684
Surr: Dibromofluoromethane	94.8	0	70-130		%Rec	1	1/3/2023 5:09:26 PM	R93684
Surr: Toluene-d8	102	0	70-130		%Rec	1	1/3/2023 5:09:26 PM	R93684

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-4B
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 9:25:00 AM
Lab ID: 2212D48-003B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	12/30/2022 2:26:04 AM	72358

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-4B
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 9:25:00 AM
Lab ID: 2212D48-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.063	0.016	0.064	BJE	mg/L	1	12/30/2022 12:01:29 PM	72336
Motor Oil Range Organics (MRO)	ND	0.052	0.080	E	mg/L	1	12/30/2022 12:01:29 PM	72336
Surr: DNOP	96.3	0	15.9-177	E	%Rec	1	12/30/2022 12:01:29 PM	72336
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	1/4/2023 4:22:27 PM	72320
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	1/4/2023 4:22:27 PM	72320
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	1/4/2023 4:22:27 PM	72320
Di-n-octyl phthalate	ND	12	20		µg/L	1	1/4/2023 4:22:27 PM	72320
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	1/4/2023 4:22:27 PM	72320
Diethyl phthalate	ND	6.0	10		µg/L	1	1/4/2023 4:22:27 PM	72320
Dimethyl phthalate	ND	6.0	10		µg/L	1	1/4/2023 4:22:27 PM	72320
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	1/4/2023 4:22:27 PM	72320
2,4-Dinitrophenol	ND	16	20		µg/L	1	1/4/2023 4:22:27 PM	72320
2-Methylphenol	ND	5.0	10		µg/L	1	1/4/2023 4:22:27 PM	72320
3+4-Methylphenol	ND	5.1	10		µg/L	1	1/4/2023 4:22:27 PM	72320
Phenol	ND	18	20		µg/L	1	1/4/2023 4:22:27 PM	72320
Pyridine	ND	14	40		µg/L	1	1/4/2023 4:22:27 PM	72320
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	1/4/2023 4:22:27 PM	72320
Surr: 2-Fluorophenol	43.8	0	15-84.5		%Rec	1	1/4/2023 4:22:27 PM	72320
Surr: Phenol-d5	33.1	0	15-67		%Rec	1	1/4/2023 4:22:27 PM	72320
Surr: 2,4,6-Tribromophenol	70.4	0	15-108		%Rec	1	1/4/2023 4:22:27 PM	72320
Surr: Nitrobenzene-d5	61.4	0	16.8-112		%Rec	1	1/4/2023 4:22:27 PM	72320
Surr: 2-Fluorobiphenyl	54.7	0	15-101		%Rec	1	1/4/2023 4:22:27 PM	72320
Surr: 4-Terphenyl-d14	77.9	0	34.4-134		%Rec	1	1/4/2023 4:22:27 PM	72320
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	1/3/2023 5:55:00 PM	72320
Naphthalene	ND	0.20	0.30		µg/L	1	1/3/2023 5:55:00 PM	72320
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	1/3/2023 5:55:00 PM	72320
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	1/3/2023 5:55:00 PM	72320
Acenaphthene	ND	0.14	0.30		µg/L	1	1/3/2023 5:55:00 PM	72320
Fluorene	ND	0.095	0.30		µg/L	1	1/3/2023 5:55:00 PM	72320
Phenanthrene	ND	0.16	0.30		µg/L	1	1/3/2023 5:55:00 PM	72320
Anthracene	ND	0.14	0.30		µg/L	1	1/3/2023 5:55:00 PM	72320
Fluoranthene	ND	0.14	0.30		µg/L	1	1/3/2023 5:55:00 PM	72320
Pyrene	ND	0.32	1.0		µg/L	1	1/3/2023 5:55:00 PM	72320
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	1/3/2023 5:55:00 PM	72320
Chrysene	ND	0.25	0.30		µg/L	1	1/3/2023 5:55:00 PM	72320
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	1/3/2023 5:55:00 PM	72320
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	1/3/2023 5:55:00 PM	72320

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-4B
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 9:25:00 AM
Lab ID: 2212D48-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	65.1	0	15-108		%Rec	1	1/3/2023 5:55:00 PM	72320
Surr: 2-Fluorobiphenyl	59.2	0	15-107		%Rec	1	1/3/2023 5:55:00 PM	72320
Surr: 4-Terphenyl-d14	95.1	0	15-166		%Rec	1	1/3/2023 5:55:00 PM	72320

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-4B
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 9:25:00 AM
Lab ID: 2212D48-003D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.057	0.0016	0.0030		mg/L	1	1/3/2023 11:37:36 AM	72387
Beryllium	ND	0.00060	0.0020		mg/L	1	1/3/2023 11:37:36 AM	72387
Cadmium	ND	0.0018	0.0020		mg/L	1	1/3/2023 11:37:36 AM	72387
Chromium	0.0053	0.0020	0.0060	J	mg/L	1	1/3/2023 11:37:36 AM	72387
Cobalt	0.0037	0.0035	0.0060	J	mg/L	1	1/3/2023 11:37:36 AM	72387
Nickel	ND	0.0053	0.010		mg/L	1	1/3/2023 11:37:36 AM	72387
Silver	ND	0.0018	0.0050		mg/L	1	1/3/2023 11:37:36 AM	72387
Vanadium	0.037	0.0035	0.050	J	mg/L	1	1/3/2023 11:37:36 AM	72387
Zinc	0.0065	0.0039	0.010	J	mg/L	1	1/3/2023 11:37:36 AM	72387
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	1/3/2023 1:43:03 PM	72387
Arsenic	0.0073	0.00022	0.0010		mg/L	1	1/3/2023 1:43:03 PM	72387
Lead	0.00075	0.00019	0.00050		mg/L	1	1/3/2023 1:43:03 PM	72387
Selenium	ND	0.00089	0.0010		mg/L	1	1/3/2023 1:43:03 PM	72387
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00013	0.000091	0.00020	J	mg/L	1	1/6/2023 7:54:13 AM	72445

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-4B
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 9:25:00 AM
Lab ID: 2212D48-003E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.038	0.0011	0.0020		mg/L	1	1/5/2023 4:34:31 PM	A93766
Beryllium	ND	0.00059	0.0020		mg/L	1	1/5/2023 4:34:31 PM	A93766
Cadmium	ND	0.00098	0.0020		mg/L	1	1/5/2023 4:34:31 PM	A93766
Chromium	ND	0.0020	0.0060		mg/L	1	1/5/2023 4:34:31 PM	A93766
Cobalt	ND	0.0024	0.0060		mg/L	1	1/5/2023 4:34:31 PM	A93766
Nickel	ND	0.0033	0.010		mg/L	1	1/5/2023 4:34:31 PM	A93766
Silver	ND	0.0013	0.0050		mg/L	1	1/5/2023 4:34:31 PM	A93766
Vanadium	0.016	0.0017	0.050	J	mg/L	1	1/5/2023 4:34:31 PM	A93766
Zinc	ND	0.0032	0.010		mg/L	1	1/5/2023 4:34:31 PM	A93766
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00045	0.0010		mg/L	1	1/12/2023 12:53:06 PM	A93915
Arsenic	0.0067	0.00057	0.0010		mg/L	1	1/12/2023 12:53:06 PM	A93915
Lead	ND	0.000099	0.00050		mg/L	1	1/12/2023 12:53:06 PM	A93915
Selenium	0.0016	0.00056	0.0010		mg/L	1	1/12/2023 12:53:06 PM	A93915
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00010	0.000091	0.00020	J	mg/L	1	1/6/2023 8:00:36 AM	72445

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5C
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 10:00:00 AM
Lab ID: 2212D48-004A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	0.020	0.0090	0.050	J	mg/L	1	12/28/2022 11:36:02 PM	R93580
Surr: BFB	97.1	0	70-130		%Rec	1	12/28/2022 11:36:02 PM	R93580
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	1.0	1.0		µg/L	1	1/3/2023 5:36:33 PM	R93684
Toluene	ND	1.0	1.0		µg/L	1	1/3/2023 5:36:33 PM	R93684
Ethylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 5:36:33 PM	R93684
Methyl tert-butyl ether (MTBE)	19	1.0	1.0		µg/L	1	1/3/2023 5:36:33 PM	R93684
1,2,4-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 5:36:33 PM	R93684
1,3,5-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 5:36:33 PM	R93684
1,2-Dichloroethane (EDC)	ND	1.0	1.0		µg/L	1	1/3/2023 5:36:33 PM	R93684
Acetone	ND	10	10		µg/L	1	1/3/2023 5:36:33 PM	R93684
Bromomethane	ND	3.0	3.0		µg/L	1	1/3/2023 5:36:33 PM	R93684
2-Butanone	ND	10	10		µg/L	1	1/3/2023 5:36:33 PM	R93684
Carbon disulfide	ND	10	10		µg/L	1	1/3/2023 5:36:33 PM	R93684
Chlorobenzene	ND	1.0	1.0		µg/L	1	1/3/2023 5:36:33 PM	R93684
Chloroform	ND	1.0	1.0		µg/L	1	1/3/2023 5:36:33 PM	R93684
Chloromethane	ND	3.0	3.0		µg/L	1	1/3/2023 5:36:33 PM	R93684
cis-1,2-DCE	ND	1.0	1.0		µg/L	1	1/3/2023 5:36:33 PM	R93684
1,1-Dichloroethane	ND	1.0	1.0		µg/L	1	1/3/2023 5:36:33 PM	R93684
1,1-Dichloroethene	ND	1.0	1.0		µg/L	1	1/3/2023 5:36:33 PM	R93684
Isopropylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 5:36:33 PM	R93684
4-Isopropyltoluene	ND	1.0	1.0		µg/L	1	1/3/2023 5:36:33 PM	R93684
Methylene Chloride	ND	3.0	3.0		µg/L	1	1/3/2023 5:36:33 PM	R93684
n-Butylbenzene	ND	3.0	3.0		µg/L	1	1/3/2023 5:36:33 PM	R93684
n-Propylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 5:36:33 PM	R93684
sec-Butylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 5:36:33 PM	R93684
Styrene	ND	1.0	1.0		µg/L	1	1/3/2023 5:36:33 PM	R93684
Tetrachloroethene (PCE)	ND	1.0	1.0		µg/L	1	1/3/2023 5:36:33 PM	R93684
1,1,1-Trichloroethane	ND	1.0	1.0		µg/L	1	1/3/2023 5:36:33 PM	R93684
Trichloroethene (TCE)	ND	1.0	1.0		µg/L	1	1/3/2023 5:36:33 PM	R93684
Vinyl chloride	ND	1.0	1.0		µg/L	1	1/3/2023 5:36:33 PM	R93684
Xylenes, Total	ND	1.5	1.5		µg/L	1	1/3/2023 5:36:33 PM	R93684
Surr: 1,2-Dichloroethane-d4	112	0	70-130		%Rec	1	1/3/2023 5:36:33 PM	R93684
Surr: 4-Bromofluorobenzene	94.5	0	70-130		%Rec	1	1/3/2023 5:36:33 PM	R93684
Surr: Dibromofluoromethane	106	0	70-130		%Rec	1	1/3/2023 5:36:33 PM	R93684
Surr: Toluene-d8	103	0	70-130		%Rec	1	1/3/2023 5:36:33 PM	R93684

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5C
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 10:00:00 AM
Lab ID: 2212D48-004B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0093		µg/L	1	12/30/2022 2:40:46 AM	72358

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5C
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 10:00:00 AM
Lab ID: 2212D48-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.081	0.016	0.064	BE	mg/L	1	12/30/2022 12:25:01 PM	72336
Motor Oil Range Organics (MRO)	ND	0.052	0.080	E	mg/L	1	12/30/2022 12:25:01 PM	72336
Surr: DNOP	108	0	15.9-177	E	%Rec	1	12/30/2022 12:25:01 PM	72336
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	1/4/2023 5:03:35 PM	72320
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	1/4/2023 5:03:35 PM	72320
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	1/4/2023 5:03:35 PM	72320
Di-n-octyl phthalate	ND	12	20		µg/L	1	1/4/2023 5:03:35 PM	72320
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	1/4/2023 5:03:35 PM	72320
Diethyl phthalate	ND	6.0	10		µg/L	1	1/4/2023 5:03:35 PM	72320
Dimethyl phthalate	ND	6.0	10		µg/L	1	1/4/2023 5:03:35 PM	72320
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	1/4/2023 5:03:35 PM	72320
2,4-Dinitrophenol	ND	16	20		µg/L	1	1/4/2023 5:03:35 PM	72320
1-Methylnaphthalene	ND	4.3	5.0		µg/L	1	1/4/2023 5:03:35 PM	72320
2-Methylphenol	ND	5.0	10		µg/L	1	1/4/2023 5:03:35 PM	72320
3+4-Methylphenol	ND	5.1	10		µg/L	1	1/4/2023 5:03:35 PM	72320
Phenol	ND	18	20		µg/L	1	1/4/2023 5:03:35 PM	72320
Pyridine	ND	14	40		µg/L	1	1/4/2023 5:03:35 PM	72320
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	1/4/2023 5:03:35 PM	72320
Surr: 2-Fluorophenol	45.6	0	15-84.5		%Rec	1	1/4/2023 5:03:35 PM	72320
Surr: Phenol-d5	34.8	0	15-67		%Rec	1	1/4/2023 5:03:35 PM	72320
Surr: 2,4,6-Tribromophenol	66.8	0	15-108		%Rec	1	1/4/2023 5:03:35 PM	72320
Surr: Nitrobenzene-d5	60.9	0	16.8-112		%Rec	1	1/4/2023 5:03:35 PM	72320
Surr: 2-Fluorobiphenyl	55.1	0	15-101		%Rec	1	1/4/2023 5:03:35 PM	72320
Surr: 4-Terphenyl-d14	87.1	0	34.4-134		%Rec	1	1/4/2023 5:03:35 PM	72320
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	2.9	0.11	1.0		µg/L	1	1/3/2023 6:38:00 PM	72320
Naphthalene	ND	0.20	0.30		µg/L	1	1/3/2023 6:38:00 PM	72320
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	1/3/2023 6:38:00 PM	72320
Acenaphthene	ND	0.14	0.30		µg/L	1	1/3/2023 6:38:00 PM	72320
Fluorene	ND	0.095	0.30		µg/L	1	1/3/2023 6:38:00 PM	72320
Phenanthrene	ND	0.16	0.30		µg/L	1	1/3/2023 6:38:00 PM	72320
Anthracene	ND	0.14	0.30		µg/L	1	1/3/2023 6:38:00 PM	72320
Fluoranthene	ND	0.14	0.30		µg/L	1	1/3/2023 6:38:00 PM	72320
Pyrene	ND	0.32	1.0		µg/L	1	1/3/2023 6:38:00 PM	72320
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	1/3/2023 6:38:00 PM	72320
Chrysene	ND	0.25	0.30		µg/L	1	1/3/2023 6:38:00 PM	72320
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	1/3/2023 6:38:00 PM	72320
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	1/3/2023 6:38:00 PM	72320

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5C
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 10:00:00 AM
Lab ID: 2212D48-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	59.7	0	15-108		%Rec	1	1/3/2023 6:38:00 PM	72320
Surr: 2-Fluorobiphenyl	52.0	0	15-107		%Rec	1	1/3/2023 6:38:00 PM	72320
Surr: 4-Terphenyl-d14	97.6	0	15-166		%Rec	1	1/3/2023 6:38:00 PM	72320

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5C
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 10:00:00 AM
Lab ID: 2212D48-004D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.16	0.0016	0.0030		mg/L	1	1/3/2023 11:46:04 AM	72387
Beryllium	ND	0.00060	0.0020		mg/L	1	1/3/2023 11:46:04 AM	72387
Cadmium	ND	0.0018	0.0020		mg/L	1	1/3/2023 11:46:04 AM	72387
Chromium	0.0046	0.0020	0.0060	J	mg/L	1	1/3/2023 11:46:04 AM	72387
Cobalt	0.0059	0.0035	0.0060	J	mg/L	1	1/3/2023 11:46:04 AM	72387
Nickel	ND	0.0053	0.010		mg/L	1	1/3/2023 11:46:04 AM	72387
Silver	ND	0.0018	0.0050		mg/L	1	1/3/2023 11:46:04 AM	72387
Vanadium	0.0099	0.0035	0.050	J	mg/L	1	1/3/2023 11:46:04 AM	72387
Zinc	ND	0.0039	0.010		mg/L	1	1/3/2023 11:46:04 AM	72387
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	1/3/2023 1:45:30 PM	72387
Arsenic	ND	0.0011	0.0050		mg/L	5	1/5/2023 2:58:12 PM	72387
Lead	0.0013	0.00019	0.00050		mg/L	1	1/3/2023 1:45:30 PM	72387
Selenium	ND	0.0044	0.0050		mg/L	5	1/5/2023 2:58:12 PM	72387
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00027	0.000091	0.00020		mg/L	1	1/6/2023 8:02:44 AM	72445

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5C
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 10:00:00 AM
Lab ID: 2212D48-004E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.072	0.0011	0.0020		mg/L	1	1/5/2023 4:40:06 PM	A93766
Beryllium	ND	0.00059	0.0020		mg/L	1	1/5/2023 4:40:06 PM	A93766
Cadmium	ND	0.00098	0.0020		mg/L	1	1/5/2023 4:40:06 PM	A93766
Chromium	ND	0.0020	0.0060		mg/L	1	1/5/2023 4:40:06 PM	A93766
Cobalt	ND	0.0024	0.0060		mg/L	1	1/5/2023 4:40:06 PM	A93766
Nickel	ND	0.0033	0.010		mg/L	1	1/5/2023 4:40:06 PM	A93766
Silver	0.0013	0.0013	0.0050	J	mg/L	1	1/5/2023 4:40:06 PM	A93766
Vanadium	0.0034	0.0017	0.050	J	mg/L	1	1/5/2023 4:40:06 PM	A93766
Zinc	0.0088	0.0032	0.010	J	mg/L	1	1/5/2023 4:40:06 PM	A93766
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00045	0.0010		mg/L	1	1/12/2023 12:58:19 PM	A93915
Arsenic	0.0013	0.00057	0.0010		mg/L	1	1/12/2023 12:58:19 PM	A93915
Lead	ND	0.000099	0.00050		mg/L	1	1/12/2023 12:58:19 PM	A93915
Selenium	0.010	0.00056	0.0010		mg/L	1	1/12/2023 12:58:19 PM	A93915
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00013	0.000091	0.00020	J	mg/L	1	1/6/2023 8:04:52 AM	72445

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5B
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 10:30:00 AM
Lab ID: 2212D48-005A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	12/28/2022 11:59:28 PM	R93580
Surr: BFB	94.9	0	70-130		%Rec	1	12/28/2022 11:59:28 PM	R93580
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	1.0	1.0		µg/L	1	1/3/2023 6:03:36 PM	R93684
Toluene	ND	1.0	1.0		µg/L	1	1/3/2023 6:03:36 PM	R93684
Ethylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 6:03:36 PM	R93684
Methyl tert-butyl ether (MTBE)	2.9	1.0	1.0		µg/L	1	1/3/2023 6:03:36 PM	R93684
1,2,4-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 6:03:36 PM	R93684
1,3,5-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 6:03:36 PM	R93684
1,2-Dichloroethane (EDC)	ND	1.0	1.0		µg/L	1	1/3/2023 6:03:36 PM	R93684
Acetone	ND	10	10		µg/L	1	1/3/2023 6:03:36 PM	R93684
Bromomethane	ND	3.0	3.0		µg/L	1	1/3/2023 6:03:36 PM	R93684
2-Butanone	ND	10	10		µg/L	1	1/3/2023 6:03:36 PM	R93684
Carbon disulfide	ND	10	10		µg/L	1	1/3/2023 6:03:36 PM	R93684
Chlorobenzene	ND	1.0	1.0		µg/L	1	1/3/2023 6:03:36 PM	R93684
Chloroform	ND	1.0	1.0		µg/L	1	1/3/2023 6:03:36 PM	R93684
Chloromethane	ND	3.0	3.0		µg/L	1	1/3/2023 6:03:36 PM	R93684
cis-1,2-DCE	ND	1.0	1.0		µg/L	1	1/3/2023 6:03:36 PM	R93684
1,1-Dichloroethane	ND	1.0	1.0		µg/L	1	1/3/2023 6:03:36 PM	R93684
1,1-Dichloroethene	ND	1.0	1.0		µg/L	1	1/3/2023 6:03:36 PM	R93684
Isopropylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 6:03:36 PM	R93684
4-Isopropyltoluene	ND	1.0	1.0		µg/L	1	1/3/2023 6:03:36 PM	R93684
Methylene Chloride	ND	3.0	3.0		µg/L	1	1/3/2023 6:03:36 PM	R93684
n-Butylbenzene	ND	3.0	3.0		µg/L	1	1/3/2023 6:03:36 PM	R93684
n-Propylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 6:03:36 PM	R93684
sec-Butylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 6:03:36 PM	R93684
Styrene	ND	1.0	1.0		µg/L	1	1/3/2023 6:03:36 PM	R93684
Tetrachloroethene (PCE)	ND	1.0	1.0		µg/L	1	1/3/2023 6:03:36 PM	R93684
1,1,1-Trichloroethane	ND	1.0	1.0		µg/L	1	1/3/2023 6:03:36 PM	R93684
Trichloroethene (TCE)	ND	1.0	1.0		µg/L	1	1/3/2023 6:03:36 PM	R93684
Vinyl chloride	ND	1.0	1.0		µg/L	1	1/3/2023 6:03:36 PM	R93684
Xylenes, Total	ND	1.5	1.5		µg/L	1	1/3/2023 6:03:36 PM	R93684
Surr: 1,2-Dichloroethane-d4	114	0	70-130		%Rec	1	1/3/2023 6:03:36 PM	R93684
Surr: 4-Bromofluorobenzene	94.8	0	70-130		%Rec	1	1/3/2023 6:03:36 PM	R93684
Surr: Dibromofluoromethane	103	0	70-130		%Rec	1	1/3/2023 6:03:36 PM	R93684
Surr: Toluene-d8	96.8	0	70-130		%Rec	1	1/3/2023 6:03:36 PM	R93684

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5B
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 10:30:00 AM
Lab ID: 2212D48-005B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	12/30/2022 2:55:30 AM	72358

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5B
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 10:30:00 AM
Lab ID: 2212D48-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.039	0.016	0.064	BJE	mg/L	1	12/30/2022 12:48:34 PM	72336
Motor Oil Range Organics (MRO)	ND	0.052	0.080	E	mg/L	1	12/30/2022 12:48:34 PM	72336
Surr: DNOP	101	0	15.9-177	E	%Rec	1	12/30/2022 12:48:34 PM	72336
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	1/4/2023 5:44:24 PM	72320
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	1/4/2023 5:44:24 PM	72320
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	1/4/2023 5:44:24 PM	72320
Di-n-octyl phthalate	ND	12	20		µg/L	1	1/4/2023 5:44:24 PM	72320
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	1/4/2023 5:44:24 PM	72320
Diethyl phthalate	ND	6.0	10		µg/L	1	1/4/2023 5:44:24 PM	72320
Dimethyl phthalate	ND	6.0	10		µg/L	1	1/4/2023 5:44:24 PM	72320
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	1/4/2023 5:44:24 PM	72320
2,4-Dinitrophenol	ND	16	20		µg/L	1	1/4/2023 5:44:24 PM	72320
2-Methylphenol	ND	5.0	10		µg/L	1	1/4/2023 5:44:24 PM	72320
3+4-Methylphenol	ND	5.1	10		µg/L	1	1/4/2023 5:44:24 PM	72320
Phenol	ND	18	20		µg/L	1	1/4/2023 5:44:24 PM	72320
Pyridine	ND	14	40		µg/L	1	1/4/2023 5:44:24 PM	72320
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	1/4/2023 5:44:24 PM	72320
Surr: 2-Fluorophenol	52.3	0	15-84.5		%Rec	1	1/4/2023 5:44:24 PM	72320
Surr: Phenol-d5	38.5	0	15-67		%Rec	1	1/4/2023 5:44:24 PM	72320
Surr: 2,4,6-Tribromophenol	72.3	0	15-108		%Rec	1	1/4/2023 5:44:24 PM	72320
Surr: Nitrobenzene-d5	67.5	0	16.8-112		%Rec	1	1/4/2023 5:44:24 PM	72320
Surr: 2-Fluorobiphenyl	55.2	0	15-101		%Rec	1	1/4/2023 5:44:24 PM	72320
Surr: 4-Terphenyl-d14	89.1	0	34.4-134		%Rec	1	1/4/2023 5:44:24 PM	72320
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	0.64	0.11	1.0	J	µg/L	1	1/3/2023 7:21:00 PM	72320
Naphthalene	ND	0.20	0.30		µg/L	1	1/3/2023 7:21:00 PM	72320
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	1/3/2023 7:21:00 PM	72320
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	1/3/2023 7:21:00 PM	72320
Acenaphthene	ND	0.14	0.30		µg/L	1	1/3/2023 7:21:00 PM	72320
Fluorene	ND	0.095	0.30		µg/L	1	1/3/2023 7:21:00 PM	72320
Phenanthrene	ND	0.16	0.30		µg/L	1	1/3/2023 7:21:00 PM	72320
Anthracene	ND	0.14	0.30		µg/L	1	1/3/2023 7:21:00 PM	72320
Fluoranthene	ND	0.14	0.30		µg/L	1	1/3/2023 7:21:00 PM	72320
Pyrene	ND	0.32	1.0		µg/L	1	1/3/2023 7:21:00 PM	72320
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	1/3/2023 7:21:00 PM	72320
Chrysene	ND	0.25	0.30		µg/L	1	1/3/2023 7:21:00 PM	72320
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	1/3/2023 7:21:00 PM	72320
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	1/3/2023 7:21:00 PM	72320

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5B
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 10:30:00 AM
Lab ID: 2212D48-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	60.2	0	15-108		%Rec	1	1/3/2023 7:21:00 PM	72320
Surr: 2-Fluorobiphenyl	52.0	0	15-107		%Rec	1	1/3/2023 7:21:00 PM	72320
Surr: 4-Terphenyl-d14	91.0	0	15-166		%Rec	1	1/3/2023 7:21:00 PM	72320

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5B
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 10:30:00 AM
Lab ID: 2212D48-005D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.26	0.0016	0.0030		mg/L	1	1/3/2023 11:49:11 AM	72387
Beryllium	ND	0.00060	0.0020		mg/L	1	1/3/2023 11:49:11 AM	72387
Cadmium	ND	0.0018	0.0020		mg/L	1	1/3/2023 11:49:11 AM	72387
Chromium	ND	0.0020	0.0060		mg/L	1	1/3/2023 11:49:11 AM	72387
Cobalt	0.0057	0.0035	0.0060	J	mg/L	1	1/3/2023 11:49:11 AM	72387
Nickel	ND	0.0053	0.010		mg/L	1	1/3/2023 11:49:11 AM	72387
Silver	ND	0.0018	0.0050		mg/L	1	1/3/2023 11:49:11 AM	72387
Vanadium	0.013	0.0035	0.050	J	mg/L	1	1/3/2023 11:49:11 AM	72387
Zinc	ND	0.0039	0.010		mg/L	1	1/3/2023 11:49:11 AM	72387
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	1/3/2023 1:47:57 PM	72387
Arsenic	0.0013	0.00022	0.0010		mg/L	1	1/3/2023 1:47:57 PM	72387
Lead	ND	0.00019	0.00050		mg/L	1	1/3/2023 1:47:57 PM	72387
Selenium	0.0015	0.00089	0.0010		mg/L	1	1/5/2023 3:00:38 PM	72387
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00013	0.000091	0.00020	J	mg/L	1	1/6/2023 8:07:00 AM	72445

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-5B
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 10:30:00 AM
Lab ID: 2212D48-005E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.26	0.0011	0.0020		mg/L	1	1/5/2023 4:56:09 PM	A93766
Beryllium	ND	0.00059	0.0020		mg/L	1	1/5/2023 4:56:09 PM	A93766
Cadmium	ND	0.00098	0.0020		mg/L	1	1/5/2023 4:56:09 PM	A93766
Chromium	ND	0.0020	0.0060		mg/L	1	1/5/2023 4:56:09 PM	A93766
Cobalt	ND	0.0024	0.0060		mg/L	1	1/5/2023 4:56:09 PM	A93766
Nickel	ND	0.0033	0.010		mg/L	1	1/5/2023 4:56:09 PM	A93766
Silver	ND	0.0013	0.0050		mg/L	1	1/5/2023 4:56:09 PM	A93766
Vanadium	0.012	0.0017	0.050	J	mg/L	1	1/5/2023 4:56:09 PM	A93766
Zinc	0.011	0.0032	0.010		mg/L	1	1/5/2023 4:56:09 PM	A93766
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00045	0.0010		mg/L	1	1/12/2023 1:03:33 PM	A93915
Arsenic	0.0017	0.00057	0.0010		mg/L	1	1/12/2023 1:03:33 PM	A93915
Lead	ND	0.000099	0.00050		mg/L	1	1/12/2023 1:03:33 PM	A93915
Selenium	0.0064	0.00056	0.0010		mg/L	1	1/12/2023 1:03:33 PM	A93915
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00013	0.000091	0.00020	J	mg/L	1	1/6/2023 8:09:08 AM	72445

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-44
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 11:00:00 AM
Lab ID: 2212D48-006A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	12/29/2022 12:23:01 AM	R93580
Surr: BFB	92.9	0	70-130		%Rec	1	12/29/2022 12:23:01 AM	R93580
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	1.0	1.0		µg/L	1	1/3/2023 6:30:39 PM	R93684
Toluene	ND	1.0	1.0		µg/L	1	1/3/2023 6:30:39 PM	R93684
Ethylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 6:30:39 PM	R93684
Methyl tert-butyl ether (MTBE)	ND	1.0	1.0		µg/L	1	1/3/2023 6:30:39 PM	R93684
1,2,4-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 6:30:39 PM	R93684
1,3,5-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 6:30:39 PM	R93684
1,2-Dichloroethane (EDC)	ND	1.0	1.0		µg/L	1	1/3/2023 6:30:39 PM	R93684
Acetone	ND	10	10		µg/L	1	1/3/2023 6:30:39 PM	R93684
Bromomethane	ND	3.0	3.0		µg/L	1	1/3/2023 6:30:39 PM	R93684
2-Butanone	ND	10	10		µg/L	1	1/3/2023 6:30:39 PM	R93684
Carbon disulfide	ND	10	10		µg/L	1	1/3/2023 6:30:39 PM	R93684
Chlorobenzene	ND	1.0	1.0		µg/L	1	1/3/2023 6:30:39 PM	R93684
Chloroform	ND	1.0	1.0		µg/L	1	1/3/2023 6:30:39 PM	R93684
Chloromethane	ND	3.0	3.0		µg/L	1	1/3/2023 6:30:39 PM	R93684
cis-1,2-DCE	ND	1.0	1.0		µg/L	1	1/3/2023 6:30:39 PM	R93684
1,1-Dichloroethane	ND	1.0	1.0		µg/L	1	1/3/2023 6:30:39 PM	R93684
1,1-Dichloroethene	ND	1.0	1.0		µg/L	1	1/3/2023 6:30:39 PM	R93684
Isopropylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 6:30:39 PM	R93684
4-Isopropyltoluene	ND	1.0	1.0		µg/L	1	1/3/2023 6:30:39 PM	R93684
Methylene Chloride	ND	3.0	3.0		µg/L	1	1/3/2023 6:30:39 PM	R93684
n-Butylbenzene	ND	3.0	3.0		µg/L	1	1/3/2023 6:30:39 PM	R93684
n-Propylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 6:30:39 PM	R93684
sec-Butylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 6:30:39 PM	R93684
Styrene	ND	1.0	1.0		µg/L	1	1/3/2023 6:30:39 PM	R93684
Tetrachloroethene (PCE)	ND	1.0	1.0		µg/L	1	1/3/2023 6:30:39 PM	R93684
1,1,1-Trichloroethane	ND	1.0	1.0		µg/L	1	1/3/2023 6:30:39 PM	R93684
Trichloroethene (TCE)	ND	1.0	1.0		µg/L	1	1/3/2023 6:30:39 PM	R93684
Vinyl chloride	ND	1.0	1.0		µg/L	1	1/3/2023 6:30:39 PM	R93684
Xylenes, Total	ND	1.5	1.5		µg/L	1	1/3/2023 6:30:39 PM	R93684
Surr: 1,2-Dichloroethane-d4	90.8	0	70-130		%Rec	1	1/3/2023 6:30:39 PM	R93684
Surr: 4-Bromofluorobenzene	95.6	0	70-130		%Rec	1	1/3/2023 6:30:39 PM	R93684
Surr: Dibromofluoromethane	92.8	0	70-130		%Rec	1	1/3/2023 6:30:39 PM	R93684
Surr: Toluene-d8	99.7	0	70-130		%Rec	1	1/3/2023 6:30:39 PM	R93684

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-44
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 11:00:00 AM
Lab ID: 2212D48-006B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	12/30/2022 3:10:13 AM	72358

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-44
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 11:00:00 AM
Lab ID: 2212D48-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.024	0.016	0.064	BJE	mg/L	1	12/30/2022 1:12:04 PM	72336
Motor Oil Range Organics (MRO)	ND	0.052	0.080	E	mg/L	1	12/30/2022 1:12:04 PM	72336
Surr: DNOP	91.3	0	15.9-177	E	%Rec	1	12/30/2022 1:12:04 PM	72336
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	1/4/2023 6:25:59 PM	72320
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	1/4/2023 6:25:59 PM	72320
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	1/4/2023 6:25:59 PM	72320
Di-n-octyl phthalate	ND	12	20		µg/L	1	1/4/2023 6:25:59 PM	72320
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	1/4/2023 6:25:59 PM	72320
Diethyl phthalate	ND	6.0	10		µg/L	1	1/4/2023 6:25:59 PM	72320
Dimethyl phthalate	ND	6.0	10		µg/L	1	1/4/2023 6:25:59 PM	72320
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	1/4/2023 6:25:59 PM	72320
2,4-Dinitrophenol	ND	16	20		µg/L	1	1/4/2023 6:25:59 PM	72320
2-Methylphenol	ND	5.0	10		µg/L	1	1/4/2023 6:25:59 PM	72320
3+4-Methylphenol	ND	5.1	10		µg/L	1	1/4/2023 6:25:59 PM	72320
Phenol	ND	18	20		µg/L	1	1/4/2023 6:25:59 PM	72320
Pyridine	ND	14	40		µg/L	1	1/4/2023 6:25:59 PM	72320
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	1/4/2023 6:25:59 PM	72320
Surr: 2-Fluorophenol	46.8	0	15-84.5		%Rec	1	1/4/2023 6:25:59 PM	72320
Surr: Phenol-d5	35.1	0	15-67		%Rec	1	1/4/2023 6:25:59 PM	72320
Surr: 2,4,6-Tribromophenol	64.3	0	15-108		%Rec	1	1/4/2023 6:25:59 PM	72320
Surr: Nitrobenzene-d5	61.5	0	16.8-112		%Rec	1	1/4/2023 6:25:59 PM	72320
Surr: 2-Fluorobiphenyl	53.6	0	15-101		%Rec	1	1/4/2023 6:25:59 PM	72320
Surr: 4-Terphenyl-d14	92.1	0	34.4-134		%Rec	1	1/4/2023 6:25:59 PM	72320
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	1/3/2023 8:05:00 PM	72320
Naphthalene	ND	0.20	0.30		µg/L	1	1/3/2023 8:05:00 PM	72320
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	1/3/2023 8:05:00 PM	72320
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	1/3/2023 8:05:00 PM	72320
Acenaphthene	ND	0.14	0.30		µg/L	1	1/3/2023 8:05:00 PM	72320
Fluorene	ND	0.095	0.30		µg/L	1	1/3/2023 8:05:00 PM	72320
Phenanthrene	ND	0.16	0.30		µg/L	1	1/3/2023 8:05:00 PM	72320
Anthracene	ND	0.14	0.30		µg/L	1	1/3/2023 8:05:00 PM	72320
Fluoranthene	ND	0.14	0.30		µg/L	1	1/3/2023 8:05:00 PM	72320
Pyrene	ND	0.32	1.0		µg/L	1	1/3/2023 8:05:00 PM	72320
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	1/3/2023 8:05:00 PM	72320
Chrysene	ND	0.25	0.30		µg/L	1	1/3/2023 8:05:00 PM	72320
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	1/3/2023 8:05:00 PM	72320
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	1/3/2023 8:05:00 PM	72320

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-44
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 11:00:00 AM
Lab ID: 2212D48-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	63.8	0	15-108		%Rec	1	1/3/2023 8:05:00 PM	72320
Surr: 2-Fluorobiphenyl	55.5	0	15-107		%Rec	1	1/3/2023 8:05:00 PM	72320
Surr: 4-Terphenyl-d14	112	0	15-166		%Rec	1	1/3/2023 8:05:00 PM	72320

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-44
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 11:00:00 AM
Lab ID: 2212D48-006D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.083	0.0016	0.0030		mg/L	1	1/3/2023 11:52:30 AM	72387
Beryllium	ND	0.00060	0.0020		mg/L	1	1/3/2023 11:52:30 AM	72387
Cadmium	ND	0.0018	0.0020		mg/L	1	1/3/2023 11:52:30 AM	72387
Chromium	0.0038	0.0020	0.0060	J	mg/L	1	1/3/2023 11:52:30 AM	72387
Cobalt	0.0054	0.0035	0.0060	J	mg/L	1	1/3/2023 11:52:30 AM	72387
Nickel	ND	0.0053	0.010		mg/L	1	1/3/2023 11:52:30 AM	72387
Silver	ND	0.0018	0.0050		mg/L	1	1/3/2023 11:52:30 AM	72387
Vanadium	0.15	0.0035	0.050		mg/L	1	1/3/2023 11:52:30 AM	72387
Zinc	0.014	0.0039	0.010		mg/L	1	1/3/2023 11:52:30 AM	72387
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	1/3/2023 1:50:23 PM	72387
Arsenic	0.013	0.00022	0.0010	*	mg/L	1	1/3/2023 1:50:23 PM	72387
Lead	0.0040	0.00019	0.00050		mg/L	1	1/3/2023 1:50:23 PM	72387
Selenium	0.014	0.00089	0.0010		mg/L	1	1/5/2023 3:03:04 PM	72387
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00011	0.000091	0.00020	J	mg/L	1	1/6/2023 8:11:17 AM	72445

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-44
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 11:00:00 AM
Lab ID: 2212D48-006E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.022	0.0011	0.0020		mg/L	1	1/5/2023 5:01:51 PM	A93766
Beryllium	ND	0.00059	0.0020		mg/L	1	1/5/2023 5:01:51 PM	A93766
Cadmium	ND	0.00098	0.0020		mg/L	1	1/5/2023 5:01:51 PM	A93766
Chromium	ND	0.0020	0.0060		mg/L	1	1/5/2023 5:01:51 PM	A93766
Cobalt	ND	0.0024	0.0060		mg/L	1	1/5/2023 5:01:51 PM	A93766
Nickel	ND	0.0033	0.010		mg/L	1	1/5/2023 5:01:51 PM	A93766
Silver	ND	0.0013	0.0050		mg/L	1	1/5/2023 5:01:51 PM	A93766
Vanadium	0.11	0.0017	0.050		mg/L	1	1/5/2023 5:01:51 PM	A93766
Zinc	ND	0.0032	0.010		mg/L	1	1/5/2023 5:01:51 PM	A93766
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00045	0.0010		mg/L	1	1/12/2023 1:08:45 PM	A93915
Arsenic	0.012	0.00057	0.0010	*	mg/L	1	1/12/2023 1:08:45 PM	A93915
Lead	ND	0.000099	0.00050		mg/L	1	1/12/2023 1:08:45 PM	A93915
Selenium	0.015	0.00056	0.0010		mg/L	1	1/12/2023 1:08:45 PM	A93915
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00010	0.000091	0.00020	J	mg/L	1	1/6/2023 8:13:27 AM	72445

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-10
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 11:30:00 AM
Lab ID: 2212D48-007A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	12/29/2022 12:46:29 AM	R93580
Surr: BFB	95.8	0	70-130		%Rec	1	12/29/2022 12:46:29 AM	R93580
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	1.0	1.0		µg/L	1	1/3/2023 6:57:43 PM	R93684
Toluene	ND	1.0	1.0		µg/L	1	1/3/2023 6:57:43 PM	R93684
Ethylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 6:57:43 PM	R93684
Methyl tert-butyl ether (MTBE)	4.3	1.0	1.0		µg/L	1	1/3/2023 6:57:43 PM	R93684
1,2,4-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 6:57:43 PM	R93684
1,3,5-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 6:57:43 PM	R93684
1,2-Dichloroethane (EDC)	ND	1.0	1.0		µg/L	1	1/3/2023 6:57:43 PM	R93684
Acetone	ND	10	10		µg/L	1	1/3/2023 6:57:43 PM	R93684
Bromomethane	ND	3.0	3.0		µg/L	1	1/3/2023 6:57:43 PM	R93684
2-Butanone	ND	10	10		µg/L	1	1/3/2023 6:57:43 PM	R93684
Carbon disulfide	ND	10	10		µg/L	1	1/3/2023 6:57:43 PM	R93684
Chlorobenzene	ND	1.0	1.0		µg/L	1	1/3/2023 6:57:43 PM	R93684
Chloroform	ND	1.0	1.0		µg/L	1	1/3/2023 6:57:43 PM	R93684
Chloromethane	ND	3.0	3.0		µg/L	1	1/3/2023 6:57:43 PM	R93684
cis-1,2-DCE	ND	1.0	1.0		µg/L	1	1/3/2023 6:57:43 PM	R93684
1,1-Dichloroethane	ND	1.0	1.0		µg/L	1	1/3/2023 6:57:43 PM	R93684
1,1-Dichloroethene	ND	1.0	1.0		µg/L	1	1/3/2023 6:57:43 PM	R93684
Isopropylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 6:57:43 PM	R93684
4-Isopropyltoluene	ND	1.0	1.0		µg/L	1	1/3/2023 6:57:43 PM	R93684
Methylene Chloride	ND	3.0	3.0		µg/L	1	1/3/2023 6:57:43 PM	R93684
n-Butylbenzene	ND	3.0	3.0		µg/L	1	1/3/2023 6:57:43 PM	R93684
n-Propylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 6:57:43 PM	R93684
sec-Butylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 6:57:43 PM	R93684
Styrene	ND	1.0	1.0		µg/L	1	1/3/2023 6:57:43 PM	R93684
Tetrachloroethene (PCE)	ND	1.0	1.0		µg/L	1	1/3/2023 6:57:43 PM	R93684
1,1,1-Trichloroethane	ND	1.0	1.0		µg/L	1	1/3/2023 6:57:43 PM	R93684
Trichloroethene (TCE)	ND	1.0	1.0		µg/L	1	1/3/2023 6:57:43 PM	R93684
Vinyl chloride	ND	1.0	1.0		µg/L	1	1/3/2023 6:57:43 PM	R93684
Xylenes, Total	ND	1.5	1.5		µg/L	1	1/3/2023 6:57:43 PM	R93684
Surr: 1,2-Dichloroethane-d4	111	0	70-130		%Rec	1	1/3/2023 6:57:43 PM	R93684
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	1	1/3/2023 6:57:43 PM	R93684
Surr: Dibromofluoromethane	98.2	0	70-130		%Rec	1	1/3/2023 6:57:43 PM	R93684
Surr: Toluene-d8	98.6	0	70-130		%Rec	1	1/3/2023 6:57:43 PM	R93684

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-10
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 11:30:00 AM
Lab ID: 2212D48-007B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	12/30/2022 3:24:57 AM	72358

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-10
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 11:30:00 AM
Lab ID: 2212D48-007C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.069	0.016	0.064	BE	mg/L	1	12/30/2022 1:35:27 PM	72336
Motor Oil Range Organics (MRO)	ND	0.052	0.080	E	mg/L	1	12/30/2022 1:35:27 PM	72336
Surr: DNOP	104	0	15.9-177	E	%Rec	1	12/30/2022 1:35:27 PM	72336
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	1/4/2023 7:06:32 PM	72320
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	1/4/2023 7:06:32 PM	72320
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	1/4/2023 7:06:32 PM	72320
Di-n-octyl phthalate	ND	12	20		µg/L	1	1/4/2023 7:06:32 PM	72320
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	1/4/2023 7:06:32 PM	72320
Diethyl phthalate	ND	6.0	10		µg/L	1	1/4/2023 7:06:32 PM	72320
Dimethyl phthalate	ND	6.0	10		µg/L	1	1/4/2023 7:06:32 PM	72320
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	1/4/2023 7:06:32 PM	72320
2,4-Dinitrophenol	ND	16	20		µg/L	1	1/4/2023 7:06:32 PM	72320
2-Methylphenol	ND	5.0	10		µg/L	1	1/4/2023 7:06:32 PM	72320
3+4-Methylphenol	ND	5.1	10		µg/L	1	1/4/2023 7:06:32 PM	72320
Phenol	ND	18	20		µg/L	1	1/4/2023 7:06:32 PM	72320
Pyridine	ND	14	40		µg/L	1	1/4/2023 7:06:32 PM	72320
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	1/4/2023 7:06:32 PM	72320
Surr: 2-Fluorophenol	40.5	0	15-84.5		%Rec	1	1/4/2023 7:06:32 PM	72320
Surr: Phenol-d5	34.8	0	15-67		%Rec	1	1/4/2023 7:06:32 PM	72320
Surr: 2,4,6-Tribromophenol	23.4	0	15-108		%Rec	1	1/4/2023 7:06:32 PM	72320
Surr: Nitrobenzene-d5	61.9	0	16.8-112		%Rec	1	1/4/2023 7:06:32 PM	72320
Surr: 2-Fluorobiphenyl	52.8	0	15-101		%Rec	1	1/4/2023 7:06:32 PM	72320
Surr: 4-Terphenyl-d14	75.9	0	34.4-134		%Rec	1	1/4/2023 7:06:32 PM	72320
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	1.2	0.11	1.0		µg/L	1	1/3/2023 8:48:00 PM	72320
Naphthalene	ND	0.20	0.30		µg/L	1	1/3/2023 8:48:00 PM	72320
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	1/3/2023 8:48:00 PM	72320
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	1/3/2023 8:48:00 PM	72320
Acenaphthene	ND	0.14	0.30		µg/L	1	1/3/2023 8:48:00 PM	72320
Fluorene	ND	0.095	0.30		µg/L	1	1/3/2023 8:48:00 PM	72320
Phenanthrene	ND	0.16	0.30		µg/L	1	1/3/2023 8:48:00 PM	72320
Anthracene	ND	0.14	0.30		µg/L	1	1/3/2023 8:48:00 PM	72320
Fluoranthene	ND	0.14	0.30		µg/L	1	1/3/2023 8:48:00 PM	72320
Pyrene	ND	0.32	1.0		µg/L	1	1/3/2023 8:48:00 PM	72320
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	1/3/2023 8:48:00 PM	72320
Chrysene	ND	0.25	0.30		µg/L	1	1/3/2023 8:48:00 PM	72320
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	1/3/2023 8:48:00 PM	72320
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	1/3/2023 8:48:00 PM	72320

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-10
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 11:30:00 AM
Lab ID: 2212D48-007C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	55.6	0	15-108		%Rec	1	1/3/2023 8:48:00 PM	72320
Surr: 2-Fluorobiphenyl	49.1	0	15-107		%Rec	1	1/3/2023 8:48:00 PM	72320
Surr: 4-Terphenyl-d14	82.5	0	15-166		%Rec	1	1/3/2023 8:48:00 PM	72320

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-10
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 11:30:00 AM
Lab ID: 2212D48-007D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.049	0.0016	0.0030		mg/L	1	1/3/2023 12:14:56 PM	72387
Beryllium	ND	0.00060	0.0020		mg/L	1	1/3/2023 12:14:56 PM	72387
Cadmium	ND	0.0018	0.0020		mg/L	1	1/3/2023 12:14:56 PM	72387
Chromium	ND	0.0020	0.0060		mg/L	1	1/3/2023 12:14:56 PM	72387
Cobalt	0.0062	0.0035	0.0060		mg/L	1	1/3/2023 12:14:56 PM	72387
Nickel	ND	0.0053	0.010		mg/L	1	1/3/2023 12:14:56 PM	72387
Silver	ND	0.0018	0.0050		mg/L	1	1/3/2023 12:14:56 PM	72387
Vanadium	0.0073	0.0035	0.050	J	mg/L	1	1/3/2023 12:14:56 PM	72387
Zinc	ND	0.0039	0.010		mg/L	1	1/3/2023 12:14:56 PM	72387
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	1/3/2023 1:52:50 PM	72387
Arsenic	0.00061	0.00022	0.0010	J	mg/L	1	1/3/2023 1:52:50 PM	72387
Lead	ND	0.00019	0.00050		mg/L	1	1/3/2023 1:52:50 PM	72387
Selenium	0.0076	0.00089	0.0010		mg/L	1	1/5/2023 3:05:31 PM	72387
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00011	0.000091	0.00020	J	mg/L	1	1/6/2023 8:15:36 AM	72445

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-10
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 11:30:00 AM
Lab ID: 2212D48-007E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.046	0.0011	0.0020		mg/L	1	1/5/2023 5:07:41 PM	A93766
Beryllium	ND	0.00059	0.0020		mg/L	1	1/5/2023 5:07:41 PM	A93766
Cadmium	ND	0.00098	0.0020		mg/L	1	1/5/2023 5:07:41 PM	A93766
Chromium	ND	0.0020	0.0060		mg/L	1	1/5/2023 5:07:41 PM	A93766
Cobalt	ND	0.0024	0.0060		mg/L	1	1/5/2023 5:07:41 PM	A93766
Nickel	ND	0.0033	0.010		mg/L	1	1/5/2023 5:07:41 PM	A93766
Silver	ND	0.0013	0.0050		mg/L	1	1/5/2023 5:07:41 PM	A93766
Vanadium	0.0064	0.0017	0.050	J	mg/L	1	1/5/2023 5:07:41 PM	A93766
Zinc	0.0069	0.0032	0.010	J	mg/L	1	1/5/2023 5:07:41 PM	A93766
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0023	0.0050		mg/L	5	1/10/2023 12:48:58 PM	A93855
Arsenic	ND	0.0029	0.0050		mg/L	5	1/10/2023 12:48:58 PM	A93855
Lead	ND	0.00049	0.0025		mg/L	5	1/10/2023 12:48:58 PM	A93855
Selenium	0.015	0.0028	0.0050		mg/L	5	1/10/2023 12:48:58 PM	A93855
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00011	0.000091	0.00020	J	mg/L	1	1/6/2023 8:17:46 AM	72445

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-43
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 12:00:00 PM
Lab ID: 2212D48-008A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **CCM**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	12/28/2022 5:15:00 PM	R93606
Surr: BFB	104	0	70-130		%Rec	1	12/28/2022 5:15:00 PM	R93606
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	1.0	1.0		µg/L	1	1/3/2023 7:24:45 PM	R93684
Toluene	ND	1.0	1.0		µg/L	1	1/3/2023 7:24:45 PM	R93684
Ethylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 7:24:45 PM	R93684
Methyl tert-butyl ether (MTBE)	ND	1.0	1.0		µg/L	1	1/3/2023 7:24:45 PM	R93684
1,2,4-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 7:24:45 PM	R93684
1,3,5-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 7:24:45 PM	R93684
1,2-Dichloroethane (EDC)	ND	1.0	1.0		µg/L	1	1/3/2023 7:24:45 PM	R93684
Acetone	ND	10	10		µg/L	1	1/3/2023 7:24:45 PM	R93684
Bromomethane	ND	3.0	3.0		µg/L	1	1/3/2023 7:24:45 PM	R93684
2-Butanone	ND	10	10		µg/L	1	1/3/2023 7:24:45 PM	R93684
Carbon disulfide	ND	10	10		µg/L	1	1/3/2023 7:24:45 PM	R93684
Chlorobenzene	ND	1.0	1.0		µg/L	1	1/3/2023 7:24:45 PM	R93684
Chloroform	ND	1.0	1.0		µg/L	1	1/3/2023 7:24:45 PM	R93684
Chloromethane	ND	3.0	3.0		µg/L	1	1/3/2023 7:24:45 PM	R93684
cis-1,2-DCE	ND	1.0	1.0		µg/L	1	1/3/2023 7:24:45 PM	R93684
1,1-Dichloroethane	ND	1.0	1.0		µg/L	1	1/3/2023 7:24:45 PM	R93684
1,1-Dichloroethene	ND	1.0	1.0		µg/L	1	1/3/2023 7:24:45 PM	R93684
Isopropylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 7:24:45 PM	R93684
4-Isopropyltoluene	ND	1.0	1.0		µg/L	1	1/3/2023 7:24:45 PM	R93684
Methylene Chloride	ND	3.0	3.0		µg/L	1	1/3/2023 7:24:45 PM	R93684
n-Butylbenzene	ND	3.0	3.0		µg/L	1	1/3/2023 7:24:45 PM	R93684
n-Propylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 7:24:45 PM	R93684
sec-Butylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 7:24:45 PM	R93684
Styrene	ND	1.0	1.0		µg/L	1	1/3/2023 7:24:45 PM	R93684
Tetrachloroethene (PCE)	ND	1.0	1.0		µg/L	1	1/3/2023 7:24:45 PM	R93684
1,1,1-Trichloroethane	ND	1.0	1.0		µg/L	1	1/3/2023 7:24:45 PM	R93684
Trichloroethene (TCE)	ND	1.0	1.0		µg/L	1	1/3/2023 7:24:45 PM	R93684
Vinyl chloride	ND	1.0	1.0		µg/L	1	1/3/2023 7:24:45 PM	R93684
Xylenes, Total	ND	1.5	1.5		µg/L	1	1/3/2023 7:24:45 PM	R93684
Surr: 1,2-Dichloroethane-d4	103	0	70-130		%Rec	1	1/3/2023 7:24:45 PM	R93684
Surr: 4-Bromofluorobenzene	91.9	0	70-130		%Rec	1	1/3/2023 7:24:45 PM	R93684
Surr: Dibromofluoromethane	94.1	0	70-130		%Rec	1	1/3/2023 7:24:45 PM	R93684
Surr: Toluene-d8	89.0	0	70-130		%Rec	1	1/3/2023 7:24:45 PM	R93684

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-43
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 12:00:00 PM
Lab ID: 2212D48-008B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0026	0.0092		µg/L	1	12/30/2022 3:39:43 AM	72358

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-43
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 12:00:00 PM
Lab ID: 2212D48-008C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.13	0.016	0.064	BE	mg/L	1	12/30/2022 1:58:52 PM	72336
Motor Oil Range Organics (MRO)	ND	0.052	0.080	E	mg/L	1	12/30/2022 1:58:52 PM	72336
Surr: DNOP	104	0	15.9-177	E	%Rec	1	12/30/2022 1:58:52 PM	72336
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	1/4/2023 7:47:52 PM	72320
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	1/4/2023 7:47:52 PM	72320
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	1/4/2023 7:47:52 PM	72320
Di-n-octyl phthalate	ND	12	20		µg/L	1	1/4/2023 7:47:52 PM	72320
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	1/4/2023 7:47:52 PM	72320
Diethyl phthalate	ND	6.0	10		µg/L	1	1/4/2023 7:47:52 PM	72320
Dimethyl phthalate	ND	6.0	10		µg/L	1	1/4/2023 7:47:52 PM	72320
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	1/4/2023 7:47:52 PM	72320
2,4-Dinitrophenol	ND	16	20		µg/L	1	1/4/2023 7:47:52 PM	72320
2-Methylphenol	ND	5.0	10		µg/L	1	1/4/2023 7:47:52 PM	72320
3+4-Methylphenol	ND	5.1	10		µg/L	1	1/4/2023 7:47:52 PM	72320
Phenol	ND	18	20		µg/L	1	1/4/2023 7:47:52 PM	72320
Pyridine	ND	14	40		µg/L	1	1/4/2023 7:47:52 PM	72320
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	1/4/2023 7:47:52 PM	72320
Surr: 2-Fluorophenol	1.10	0	15-84.5	S	%Rec	1	1/4/2023 7:47:52 PM	72320
Surr: Phenol-d5	4.92	0	15-67	S	%Rec	1	1/4/2023 7:47:52 PM	72320
Surr: 2,4,6-Tribromophenol	1.52	0	15-108	S	%Rec	1	1/4/2023 7:47:52 PM	72320
Surr: Nitrobenzene-d5	60.2	0	16.8-112		%Rec	1	1/4/2023 7:47:52 PM	72320
Surr: 2-Fluorobiphenyl	51.9	0	15-101		%Rec	1	1/4/2023 7:47:52 PM	72320
Surr: 4-Terphenyl-d14	84.6	0	34.4-134		%Rec	1	1/4/2023 7:47:52 PM	72320
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	1/3/2023 10:26:00 PM	72320
Naphthalene	ND	0.20	0.30		µg/L	1	1/3/2023 10:26:00 PM	72320
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	1/3/2023 10:26:00 PM	72320
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	1/3/2023 10:26:00 PM	72320
Acenaphthene	ND	0.14	0.30		µg/L	1	1/3/2023 10:26:00 PM	72320
Fluorene	ND	0.095	0.30		µg/L	1	1/3/2023 10:26:00 PM	72320
Phenanthrene	ND	0.16	0.30		µg/L	1	1/3/2023 10:26:00 PM	72320
Anthracene	ND	0.14	0.30		µg/L	1	1/3/2023 10:26:00 PM	72320
Fluoranthene	ND	0.14	0.30		µg/L	1	1/3/2023 10:26:00 PM	72320
Pyrene	ND	0.32	1.0		µg/L	1	1/3/2023 10:26:00 PM	72320
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	1/3/2023 10:26:00 PM	72320
Chrysene	ND	0.25	0.30		µg/L	1	1/3/2023 10:26:00 PM	72320
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	1/3/2023 10:26:00 PM	72320
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	1/3/2023 10:26:00 PM	72320

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-43
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 12:00:00 PM
Lab ID: 2212D48-008C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	59.1	0	15-108		%Rec	1	1/3/2023 10:26:00 PM	72320
Surr: 2-Fluorobiphenyl	50.9	0	15-107		%Rec	1	1/3/2023 10:26:00 PM	72320
Surr: 4-Terphenyl-d14	93.4	0	15-166		%Rec	1	1/3/2023 10:26:00 PM	72320

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-43
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 12:00:00 PM
Lab ID: 2212D48-008D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.083	0.0079	0.015		mg/L	5	1/3/2023 12:18:06 PM	72387
Beryllium	ND	0.0030	0.010		mg/L	5	1/3/2023 12:18:06 PM	72387
Cadmium	ND	0.0088	0.010		mg/L	5	1/3/2023 12:18:06 PM	72387
Chromium	ND	0.0098	0.030		mg/L	5	1/3/2023 12:18:06 PM	72387
Cobalt	0.095	0.018	0.030		mg/L	5	1/9/2023 9:23:01 AM	72387
Nickel	ND	0.027	0.050		mg/L	5	1/3/2023 12:18:06 PM	72387
Silver	ND	0.0092	0.025		mg/L	5	1/3/2023 12:18:06 PM	72387
Vanadium	ND	0.018	0.25		mg/L	5	1/3/2023 12:18:06 PM	72387
Zinc	ND	0.019	0.050		mg/L	5	1/3/2023 12:18:06 PM	72387
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0089	0.020		mg/L	20	1/5/2023 3:07:58 PM	72387
Arsenic	ND	0.0044	0.020		mg/L	20	1/5/2023 3:07:58 PM	72387
Lead	ND	0.0039	0.010		mg/L	20	1/5/2023 3:07:58 PM	72387
Selenium	ND	0.018	0.020		mg/L	20	1/5/2023 3:07:58 PM	72387
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.000097	0.000091	0.00020	J	mg/L	1	1/6/2023 8:19:56 AM	72445

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-43
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 12:00:00 PM
Lab ID: 2212D48-008E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.042	0.0011	0.0020		mg/L	1	1/5/2023 5:13:54 PM	A93766
Beryllium	0.00085	0.00059	0.0020	J	mg/L	1	1/5/2023 5:13:54 PM	A93766
Cadmium	ND	0.00098	0.0020		mg/L	1	1/5/2023 5:13:54 PM	A93766
Chromium	ND	0.0020	0.0060		mg/L	1	1/5/2023 5:13:54 PM	A93766
Cobalt	ND	0.0024	0.0060		mg/L	1	1/5/2023 5:13:54 PM	A93766
Nickel	0.0056	0.0033	0.010	J	mg/L	1	1/5/2023 5:13:54 PM	A93766
Silver	0.025	0.0013	0.0050		mg/L	1	1/5/2023 5:13:54 PM	A93766
Vanadium	0.0058	0.0017	0.050	J	mg/L	1	1/5/2023 5:13:54 PM	A93766
Zinc	ND	0.0032	0.010		mg/L	1	1/5/2023 5:13:54 PM	A93766
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0045	0.010		mg/L	10	1/11/2023 1:04:56 PM	A93877
Arsenic	ND	0.0057	0.010		mg/L	10	1/11/2023 1:04:56 PM	A93877
Lead	ND	0.00099	0.0050		mg/L	10	1/11/2023 1:04:56 PM	A93877
Selenium	0.088	0.0056	0.010	*	mg/L	10	1/11/2023 1:04:56 PM	A93877
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.000093	0.000091	0.00020	J	mg/L	1	1/6/2023 8:29:59 AM	72445

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB-12-22-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022 12:00:00 PM
Lab ID: 2212D48-009A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	1.0	1.0		µg/L	1	1/3/2023 7:51:46 PM	R93684
Toluene	ND	1.0	1.0		µg/L	1	1/3/2023 7:51:46 PM	R93684
Ethylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 7:51:46 PM	R93684
Methyl tert-butyl ether (MTBE)	ND	1.0	1.0		µg/L	1	1/3/2023 7:51:46 PM	R93684
1,2,4-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 7:51:46 PM	R93684
1,3,5-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 7:51:46 PM	R93684
1,2-Dichloroethane (EDC)	ND	1.0	1.0		µg/L	1	1/3/2023 7:51:46 PM	R93684
Acetone	ND	10	10		µg/L	1	1/3/2023 7:51:46 PM	R93684
Bromomethane	ND	3.0	3.0		µg/L	1	1/3/2023 7:51:46 PM	R93684
2-Butanone	ND	10	10		µg/L	1	1/3/2023 7:51:46 PM	R93684
Carbon disulfide	ND	10	10		µg/L	1	1/3/2023 7:51:46 PM	R93684
Chlorobenzene	ND	1.0	1.0		µg/L	1	1/3/2023 7:51:46 PM	R93684
Chloroform	ND	1.0	1.0		µg/L	1	1/3/2023 7:51:46 PM	R93684
Chloromethane	ND	3.0	3.0		µg/L	1	1/3/2023 7:51:46 PM	R93684
cis-1,2-DCE	ND	1.0	1.0		µg/L	1	1/3/2023 7:51:46 PM	R93684
1,1-Dichloroethane	ND	1.0	1.0		µg/L	1	1/3/2023 7:51:46 PM	R93684
1,1-Dichloroethene	ND	1.0	1.0		µg/L	1	1/3/2023 7:51:46 PM	R93684
Isopropylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 7:51:46 PM	R93684
4-Isopropyltoluene	ND	1.0	1.0		µg/L	1	1/3/2023 7:51:46 PM	R93684
Methylene Chloride	ND	3.0	3.0		µg/L	1	1/3/2023 7:51:46 PM	R93684
n-Butylbenzene	ND	3.0	3.0		µg/L	1	1/3/2023 7:51:46 PM	R93684
n-Propylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 7:51:46 PM	R93684
sec-Butylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 7:51:46 PM	R93684
Styrene	ND	1.0	1.0		µg/L	1	1/3/2023 7:51:46 PM	R93684
Tetrachloroethene (PCE)	ND	1.0	1.0		µg/L	1	1/3/2023 7:51:46 PM	R93684
1,1,1-Trichloroethane	ND	1.0	1.0		µg/L	1	1/3/2023 7:51:46 PM	R93684
Trichloroethene (TCE)	ND	1.0	1.0		µg/L	1	1/3/2023 7:51:46 PM	R93684
Vinyl chloride	ND	1.0	1.0		µg/L	1	1/3/2023 7:51:46 PM	R93684
Xylenes, Total	ND	1.5	1.5		µg/L	1	1/3/2023 7:51:46 PM	R93684
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%Rec	1	1/3/2023 7:51:46 PM	R93684
Surr: 4-Bromofluorobenzene	96.3	0	70-130		%Rec	1	1/3/2023 7:51:46 PM	R93684
Surr: Dibromofluoromethane	106	0	70-130		%Rec	1	1/3/2023 7:51:46 PM	R93684
Surr: Toluene-d8	87.4	0	70-130		%Rec	1	1/3/2023 7:51:46 PM	R93684

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-12-22-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022
Lab ID: 2212D48-010A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **CCM**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	12/28/2022 5:34:00 PM	R93606
Surr: BFB	106	0	70-130		%Rec	1	12/28/2022 5:34:00 PM	R93606
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	1.0	1.0		µg/L	1	1/3/2023 8:18:49 PM	R93684
Toluene	ND	1.0	1.0		µg/L	1	1/3/2023 8:18:49 PM	R93684
Ethylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 8:18:49 PM	R93684
Methyl tert-butyl ether (MTBE)	ND	1.0	1.0		µg/L	1	1/3/2023 8:18:49 PM	R93684
1,2,4-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 8:18:49 PM	R93684
1,3,5-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 8:18:49 PM	R93684
1,2-Dichloroethane (EDC)	ND	1.0	1.0		µg/L	1	1/3/2023 8:18:49 PM	R93684
Acetone	ND	10	10		µg/L	1	1/3/2023 8:18:49 PM	R93684
Bromomethane	ND	3.0	3.0		µg/L	1	1/3/2023 8:18:49 PM	R93684
2-Butanone	ND	10	10		µg/L	1	1/3/2023 8:18:49 PM	R93684
Carbon disulfide	ND	10	10		µg/L	1	1/3/2023 8:18:49 PM	R93684
Chlorobenzene	ND	1.0	1.0		µg/L	1	1/3/2023 8:18:49 PM	R93684
Chloroform	ND	1.0	1.0		µg/L	1	1/3/2023 8:18:49 PM	R93684
Chloromethane	ND	3.0	3.0		µg/L	1	1/3/2023 8:18:49 PM	R93684
cis-1,2-DCE	ND	1.0	1.0		µg/L	1	1/3/2023 8:18:49 PM	R93684
1,1-Dichloroethane	ND	1.0	1.0		µg/L	1	1/3/2023 8:18:49 PM	R93684
1,1-Dichloroethene	ND	1.0	1.0		µg/L	1	1/3/2023 8:18:49 PM	R93684
Isopropylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 8:18:49 PM	R93684
4-Isopropyltoluene	ND	1.0	1.0		µg/L	1	1/3/2023 8:18:49 PM	R93684
Methylene Chloride	ND	3.0	3.0		µg/L	1	1/3/2023 8:18:49 PM	R93684
n-Butylbenzene	ND	3.0	3.0		µg/L	1	1/3/2023 8:18:49 PM	R93684
n-Propylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 8:18:49 PM	R93684
sec-Butylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 8:18:49 PM	R93684
Styrene	ND	1.0	1.0		µg/L	1	1/3/2023 8:18:49 PM	R93684
Tetrachloroethene (PCE)	ND	1.0	1.0		µg/L	1	1/3/2023 8:18:49 PM	R93684
1,1,1-Trichloroethane	ND	1.0	1.0		µg/L	1	1/3/2023 8:18:49 PM	R93684
Trichloroethene (TCE)	ND	1.0	1.0		µg/L	1	1/3/2023 8:18:49 PM	R93684
Vinyl chloride	ND	1.0	1.0		µg/L	1	1/3/2023 8:18:49 PM	R93684
Xylenes, Total	ND	1.5	1.5		µg/L	1	1/3/2023 8:18:49 PM	R93684
Surr: 1,2-Dichloroethane-d4	112	0	70-130		%Rec	1	1/3/2023 8:18:49 PM	R93684
Surr: 4-Bromofluorobenzene	105	0	70-130		%Rec	1	1/3/2023 8:18:49 PM	R93684
Surr: Dibromofluoromethane	102	0	70-130		%Rec	1	1/3/2023 8:18:49 PM	R93684
Surr: Toluene-d8	99.1	0	70-130		%Rec	1	1/3/2023 8:18:49 PM	R93684

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-12-22-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022
Lab ID: 2212D48-010B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	12/30/2022 3:54:32 AM	72358

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-12-22-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022
Lab ID: 2212D48-010C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.029	0.016	0.064	BJE	mg/L	1	12/30/2022 2:22:16 PM	72336
Motor Oil Range Organics (MRO)	ND	0.052	0.080	E	mg/L	1	12/30/2022 2:22:16 PM	72336
Surr: DNOP	108	0	15.9-177	E	%Rec	1	12/30/2022 2:22:16 PM	72336
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	1/4/2023 8:28:20 PM	72320
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	1/4/2023 8:28:20 PM	72320
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	1/4/2023 8:28:20 PM	72320
Di-n-octyl phthalate	ND	12	20		µg/L	1	1/4/2023 8:28:20 PM	72320
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	1/4/2023 8:28:20 PM	72320
Diethyl phthalate	ND	6.0	10		µg/L	1	1/4/2023 8:28:20 PM	72320
Dimethyl phthalate	ND	6.0	10		µg/L	1	1/4/2023 8:28:20 PM	72320
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	1/4/2023 8:28:20 PM	72320
2,4-Dinitrophenol	ND	16	20		µg/L	1	1/4/2023 8:28:20 PM	72320
2-Methylphenol	ND	5.0	10		µg/L	1	1/4/2023 8:28:20 PM	72320
3+4-Methylphenol	ND	5.1	10		µg/L	1	1/4/2023 8:28:20 PM	72320
Phenol	ND	18	20		µg/L	1	1/4/2023 8:28:20 PM	72320
Pyridine	ND	14	40		µg/L	1	1/4/2023 8:28:20 PM	72320
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	1/4/2023 8:28:20 PM	72320
Surr: 2-Fluorophenol	51.4	0	15-84.5		%Rec	1	1/4/2023 8:28:20 PM	72320
Surr: Phenol-d5	38.9	0	15-67		%Rec	1	1/4/2023 8:28:20 PM	72320
Surr: 2,4,6-Tribromophenol	67.4	0	15-108		%Rec	1	1/4/2023 8:28:20 PM	72320
Surr: Nitrobenzene-d5	68.5	0	16.8-112		%Rec	1	1/4/2023 8:28:20 PM	72320
Surr: 2-Fluorobiphenyl	58.9	0	15-101		%Rec	1	1/4/2023 8:28:20 PM	72320
Surr: 4-Terphenyl-d14	89.3	0	34.4-134		%Rec	1	1/4/2023 8:28:20 PM	72320
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	1/3/2023 11:09:00 PM	72320
Naphthalene	ND	0.20	0.30		µg/L	1	1/3/2023 11:09:00 PM	72320
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	1/3/2023 11:09:00 PM	72320
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	1/3/2023 11:09:00 PM	72320
Acenaphthene	ND	0.14	0.30		µg/L	1	1/3/2023 11:09:00 PM	72320
Fluorene	ND	0.095	0.30		µg/L	1	1/3/2023 11:09:00 PM	72320
Phenanthrene	ND	0.16	0.30		µg/L	1	1/3/2023 11:09:00 PM	72320
Anthracene	ND	0.14	0.30		µg/L	1	1/3/2023 11:09:00 PM	72320
Fluoranthene	ND	0.14	0.30		µg/L	1	1/3/2023 11:09:00 PM	72320
Pyrene	ND	0.32	1.0		µg/L	1	1/3/2023 11:09:00 PM	72320
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	1/3/2023 11:09:00 PM	72320
Chrysene	ND	0.25	0.30		µg/L	1	1/3/2023 11:09:00 PM	72320
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	1/3/2023 11:09:00 PM	72320
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	1/3/2023 11:09:00 PM	72320

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-12-22-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022
Lab ID: 2212D48-010C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	56.1	0	15-108		%Rec	1	1/3/2023 11:09:00 PM	72320
Surr: 2-Fluorobiphenyl	49.9	0	15-107		%Rec	1	1/3/2023 11:09:00 PM	72320
Surr: 4-Terphenyl-d14	89.5	0	15-166		%Rec	1	1/3/2023 11:09:00 PM	72320

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-12-22-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022
Lab ID: 2212D48-010D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.037	0.0016	0.0030		mg/L	1	1/3/2023 12:19:50 PM	72387
Beryllium	ND	0.00060	0.0020		mg/L	1	1/3/2023 12:19:50 PM	72387
Cadmium	ND	0.0018	0.0020		mg/L	1	1/3/2023 12:19:50 PM	72387
Chromium	ND	0.0020	0.0060		mg/L	1	1/3/2023 12:19:50 PM	72387
Cobalt	ND	0.0035	0.0060		mg/L	1	1/3/2023 12:19:50 PM	72387
Nickel	ND	0.0053	0.010		mg/L	1	1/3/2023 12:19:50 PM	72387
Silver	ND	0.0018	0.0050		mg/L	1	1/3/2023 12:19:50 PM	72387
Vanadium	0.052	0.0035	0.050		mg/L	1	1/3/2023 12:19:50 PM	72387
Zinc	ND	0.0039	0.010		mg/L	1	1/3/2023 12:19:50 PM	72387
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	1/3/2023 2:09:57 PM	72387
Arsenic	0.00092	0.00022	0.0010	J	mg/L	1	1/3/2023 2:09:57 PM	72387
Lead	ND	0.00019	0.00050		mg/L	1	1/3/2023 2:09:57 PM	72387
Selenium	ND	0.00089	0.0010		mg/L	1	1/5/2023 3:10:24 PM	72387
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00012	0.000091	0.00020	J	mg/L	1	1/6/2023 8:32:07 AM	72445

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-12-22-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/22/2022
Lab ID: 2212D48-010E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.034	0.0011	0.0020		mg/L	1	1/5/2023 5:21:16 PM	A93766
Beryllium	ND	0.00059	0.0020		mg/L	1	1/5/2023 5:21:16 PM	A93766
Cadmium	ND	0.00098	0.0020		mg/L	1	1/5/2023 5:21:16 PM	A93766
Chromium	ND	0.0020	0.0060		mg/L	1	1/5/2023 5:21:16 PM	A93766
Cobalt	ND	0.0024	0.0060		mg/L	1	1/5/2023 5:21:16 PM	A93766
Nickel	ND	0.0033	0.010		mg/L	1	1/5/2023 5:21:16 PM	A93766
Silver	ND	0.0013	0.0050		mg/L	1	1/5/2023 5:21:16 PM	A93766
Vanadium	0.043	0.0017	0.050	J	mg/L	1	1/5/2023 5:21:16 PM	A93766
Zinc	ND	0.0032	0.010		mg/L	1	1/5/2023 5:21:16 PM	A93766
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00045	0.0010		mg/L	1	1/12/2023 1:13:59 PM	A93915
Arsenic	0.00075	0.00057	0.0010	J	mg/L	1	1/12/2023 1:13:59 PM	A93915
Lead	ND	0.000099	0.00050		mg/L	1	1/12/2023 1:13:59 PM	A93915
Selenium	0.0044	0.00056	0.0010		mg/L	1	1/12/2023 1:13:59 PM	A93915
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00012	0.000091	0.00020	J	mg/L	1	1/6/2023 8:34:15 AM	72445

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 4th Quarter
Collection Date:
Lab ID: 2212D48-011A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
Toluene	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
Ethylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
Methyl tert-butyl ether (MTBE)	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
1,2,4-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
1,3,5-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
1,2-Dichloroethane (EDC)	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
1,2-Dibromoethane (EDB)	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
Naphthalene	ND	2.0	2.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
1-Methylnaphthalene	ND	4.0	4.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
2-Methylnaphthalene	ND	4.0	4.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
Acetone	ND	10	10		µg/L	1	1/3/2023 8:45:52 PM	R93684
Bromobenzene	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
Bromodichloromethane	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
Bromoform	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
Bromomethane	ND	3.0	3.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
2-Butanone	ND	10	10		µg/L	1	1/3/2023 8:45:52 PM	R93684
Carbon disulfide	ND	10	10		µg/L	1	1/3/2023 8:45:52 PM	R93684
Carbon Tetrachloride	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
Chlorobenzene	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
Chloroethane	ND	2.0	2.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
Chloroform	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
Chloromethane	ND	3.0	3.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
2-Chlorotoluene	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
4-Chlorotoluene	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
cis-1,2-DCE	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
cis-1,3-Dichloropropene	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
1,2-Dibromo-3-chloropropane	ND	2.0	2.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
Dibromochloromethane	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
Dibromomethane	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
1,2-Dichlorobenzene	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
1,3-Dichlorobenzene	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
1,4-Dichlorobenzene	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
Dichlorodifluoromethane	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
1,1-Dichloroethane	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
1,1-Dichloroethene	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
1,2-Dichloropropane	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
1,3-Dichloropropane	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
2,2-Dichloropropane	ND	2.0	2.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
1,1-Dichloropropene	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212D48**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 4th Quarter
Collection Date:
Lab ID: 2212D48-011A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Hexachlorobutadiene	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
2-Hexanone	ND	10	10		µg/L	1	1/3/2023 8:45:52 PM	R93684
Isopropylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
4-Isopropyltoluene	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
4-Methyl-2-pentanone	ND	10	10		µg/L	1	1/3/2023 8:45:52 PM	R93684
Methylene Chloride	ND	3.0	3.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
n-Butylbenzene	ND	3.0	3.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
n-Propylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
sec-Butylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
Styrene	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
tert-Butylbenzene	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
1,1,1,2-Tetrachloroethane	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
1,1,2,2-Tetrachloroethane	ND	2.0	2.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
Tetrachloroethene (PCE)	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
trans-1,2-DCE	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
trans-1,3-Dichloropropene	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
1,2,3-Trichlorobenzene	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
1,2,4-Trichlorobenzene	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
1,1,1-Trichloroethane	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
1,1,2-Trichloroethane	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
Trichloroethene (TCE)	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
Trichlorofluoromethane	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
1,2,3-Trichloropropane	ND	2.0	2.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
Vinyl chloride	ND	1.0	1.0		µg/L	1	1/3/2023 8:45:52 PM	R93684
Xylenes, Total	ND	1.5	1.5		µg/L	1	1/3/2023 8:45:52 PM	R93684
Surr: 1,2-Dichloroethane-d4	121	0	70-130		%Rec	1	1/3/2023 8:45:52 PM	R93684
Surr: 4-Bromofluorobenzene	105	0	70-130		%Rec	1	1/3/2023 8:45:52 PM	R93684
Surr: Dibromofluoromethane	108	0	70-130		%Rec	1	1/3/2023 8:45:52 PM	R93684
Surr: Toluene-d8	89.4	0	70-130		%Rec	1	1/3/2023 8:45:52 PM	R93684

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

ANALYTICAL REPORT

January 03, 2023

Hall Environmental Analysis Laboratory

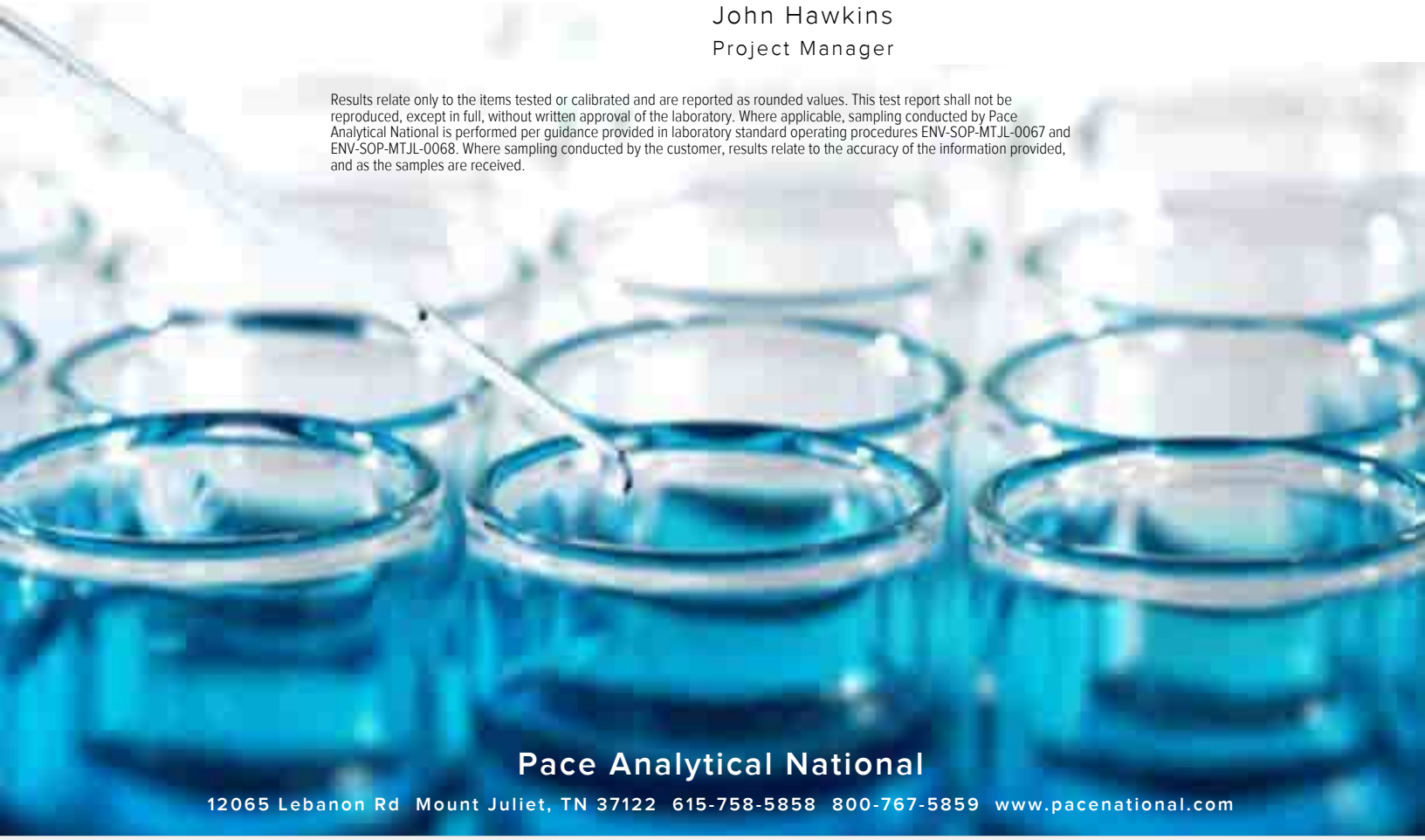
Sample Delivery Group:	L1571184
Samples Received:	12/28/2022
Project Number:	
Description:	

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By: John V Hawkins

John Hawkins
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 5

Sr: Sample Results 6

2212D48-001F EB-12-22-22 L1571184-01 6

2212D48-002F OW-1 L1571184-02 7

2212D48-003F BW-4B L1571184-03 8

2212D48-004F BW-5C L1571184-04 9

2212D48-005F BW-5B L1571184-05 10

2212D48-006F MKTF-44 L1571184-06 11

2212D48-007F OW-10 L1571184-07 12

2212D48-008F MKTF-43 L1571184-08 13

2212D48-009F DUP-12-22-22 L1571184-09 14

Qc: Quality Control Summary 15

Wet Chemistry by Method 4500CN E-2016 15

Gl: Glossary of Terms 18

Al: Accreditations & Locations 19

Sc: Sample Chain of Custody 20

SAMPLE SUMMARY

2212D48-001F EB-12-22-22 L1571184-01 WW

Collected by | Collected date/time 12/22/22 08:30 | Received date/time 12/28/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1980609	1	12/29/22 17:31	12/29/22 22:33	LDT	Mt. Juliet, TN

2212D48-002F OW-1 L1571184-02 WW

Collected by | Collected date/time 12/22/22 08:55 | Received date/time 12/28/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1980609	1	12/29/22 17:31	12/29/22 22:34	LDT	Mt. Juliet, TN

2212D48-003F BW-4B L1571184-03 WW

Collected by | Collected date/time 12/22/22 09:25 | Received date/time 12/28/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1980609	1	12/29/22 17:31	12/29/22 22:37	LDT	Mt. Juliet, TN

2212D48-004F BW-5C L1571184-04 WW

Collected by | Collected date/time 12/22/22 10:00 | Received date/time 12/28/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1980609	1	12/29/22 17:31	12/29/22 22:39	LDT	Mt. Juliet, TN

2212D48-005F BW-5B L1571184-05 WW

Collected by | Collected date/time 12/22/22 10:30 | Received date/time 12/28/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1980984	1	12/30/22 08:29	12/30/22 17:49	LDT	Mt. Juliet, TN

2212D48-006F MKTF-44 L1571184-06 WW

Collected by | Collected date/time 12/22/22 11:00 | Received date/time 12/28/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1980984	1	12/30/22 08:29	12/30/22 17:50	LDT	Mt. Juliet, TN

2212D48-007F OW-10 L1571184-07 WW

Collected by | Collected date/time 12/22/22 11:30 | Received date/time 12/28/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1980984	1	12/30/22 08:29	12/30/22 17:52	LDT	Mt. Juliet, TN

2212D48-008F MKTF-43 L1571184-08 WW

Collected by | Collected date/time 12/22/22 12:00 | Received date/time 12/28/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1980984	1	12/30/22 08:29	12/30/22 17:54	LDT	Mt. Juliet, TN

SAMPLE SUMMARY

2212D48-009F DUP-12-22-22 L1571184-09 WW

Collected by	Collected date/time	Received date/time
	12/22/22 00:00	12/28/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1980984	1	12/30/22 08:29	12/30/22 17:59	LDT	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	12/29/2022 22:33	WG1980609

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	12/29/2022 22:34	WG1980609

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	12/29/2022 22:37	WG1980609

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	12/29/2022 22:39	WG1980609

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	12/30/2022 17:49	WG1980984

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	12/30/2022 17:50	WG1980984

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	12/30/2022 17:52	WG1980984

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	12/30/2022 17:54	WG1980984

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND	J6	0.00500	1	12/30/2022 17:59	WG1980984

Method Blank (MB)

(MB) R3876667-1 12/29/22 22:13

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1571158-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1571158-01 12/29/22 22:17 • (DUP) R3876667-3 12/29/22 22:18

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

L1571182-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1571182-01 12/29/22 22:46 • (DUP) R3876667-6 12/29/22 22:47

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	0.419	0.338	5	21.5	J3	20

Laboratory Control Sample (LCS)

(LCS) R3876667-2 12/29/22 22:14

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.0979	97.9	87.1-120	

L1571158-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1571158-02 12/29/22 22:19 • (MS) R3876667-4 12/29/22 22:20 • (MSD) R3876667-5 12/29/22 22:21

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0974	0.0967	97.4	96.7	1	90.0-110			0.721	20

Method Blank (MB)

(MB) R3877001-1 12/30/22 17:35

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1571184-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1571184-06 12/30/22 17:50 • (DUP) R3877001-3 12/30/22 17:51

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

L1571184-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1571184-07 12/30/22 17:52 • (DUP) R3877001-4 12/30/22 17:53

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3877001-2 12/30/22 17:36

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.0882	88.2	87.1-120	

L1571184-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1571184-08 12/30/22 17:54 • (MS) R3877001-5 12/30/22 17:55 • (MSD) R3877001-6 12/30/22 17:56

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0910	0.0913	91.0	91.3	1	90.0-110			0.329	20

L1571184-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1571184-09 12/30/22 17:59 • (MS) R3877001-7 12/30/22 18:00 • (MSD) R3877001-8 12/30/22 18:01

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0893	0.0914	89.3	91.4	1	90.0-110	J6		2.32	20

L1571184-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1571184-09 12/30/22 17:59 • (MS) R3877001-7 12/30/22 18:00 • (MSD) R3877001-8 12/30/22 18:01

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %

Sample Narrative:

MS: Matrix spike failure due to matrix.

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Received by OCD: 4/21/2023 9:21:57 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

H059

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

SUB CONTRATOR:	Pace TN	COMPANY: PACE TN	PHONE: (800) 767-5859	FAX: (615) 758-5859	
ADDRESS:	12065 Lebanon Rd		ACCOUNT #:	EMAIL:	
CITY, STATE, ZIP:	Mt. Juliet, TN 37122				

L1571184

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS	
1	2212D48-001F	EB-12-22-22	500AMBHDP F-NAOH	Groundwater	12/22/2022 8:30:00 AM	1	Total Cyanide J and MDL	-01
2	2212D48-002F	OW-1	500AMBHDP F-NAOH	Groundwater	12/22/2022 8:55:00 AM	1	Total Cyanide J and MDL	-02
3	2212D48-003F	BW-4B	500AMBHDP F-NAOH	Groundwater	12/22/2022 9:25:00 AM	1	Total Cyanide J and MDL	-03
4	2212D48-004F	BW-5C	500AMBHDP F-NAOH	Groundwater	12/22/2022 10:00:00 AM	1	Total Cyanide J and MDL	-04
5	2212D48-005F	BW-5B	500AMBHDP F-NAOH	Groundwater	12/22/2022 10:30:00 AM	1	Total Cyanide J and MDL	-05
6	2212D48-006F	MKTF-44	500AMBHDP F-NAOH	Groundwater	12/22/2022 11:00:00 AM	1	Total Cyanide J and MDL	-06
7	2212D48-007F	OW-10	500AMBHDP F-NAOH	Groundwater	12/22/2022 11:30:00 AM	1	Total Cyanide J and MDL	-07
8	2212D48-008F	MKTF-43	500AMBHDP F-NAOH	Groundwater	12/22/2022 12:00:00 PM	1	Total Cyanide J and MDL	-08
9	2212D48-010F	DUP-12-22-22	500AMBHDP F-NAOH	Groundwater	12/22/2022	1	Total Cyanide J and MDL	-09

Sample Receipt Checklist

COC Seal Present/Intact:	Y N	If Applicable	
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	Y N	Pres.Correct/Check:	Y N
Correct bottles used:	Y N		
Sufficient volume sent:	Y N		
RAD Screen <0.5 mR/hr:	Y N		

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By: T-O	Date: 12/23/2022	Time: 9:41 AM	Received By:	Date: 12/28/22	Time: 0900
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☑ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:

☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY

Temp of samples 0.4 °C Attempt to Cool ? _____

Comments: _____

Released to Imaging: 4/21/2023 9:40:26 AM

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212D48**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-72387**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **72387**	RunNo: **93679**
Prep Date: **12/30/2022**	Analysis Date: **1/3/2023**	SeqNo: **3381193** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	0.0051	0.010								J

Sample ID: **LCSLL-72387**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **72387**	RunNo: **93679**
Prep Date: **12/30/2022**	Analysis Date: **1/3/2023**	SeqNo: **3381194** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0019	0.0030	0.002000	0	97.3	50	150			J
Beryllium	0.0017	0.0020	0.002000	0	83.2	50	150			J
Cadmium	0.0019	0.0020	0.002000	0	96.3	50	150			J
Chromium	0.0066	0.0060	0.006000	0	110	50	150			
Cobalt	0.012	0.0060	0.006000	0	195	50	150			S
Nickel	0.0044	0.010	0.005000	0	87.3	50	150			J
Silver	0.0050	0.0050	0.005000	0	100	50	150			
Vanadium	0.011	0.050	0.01000	0	110	50	150			J
Zinc	0.0097	0.010	0.01000	0	97.0	50	150			J

Sample ID: **LCS-72387**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **72387**	RunNo: **93679**
Prep Date: **12/30/2022**	Analysis Date: **1/3/2023**	SeqNo: **3381195** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0030	0.5000	0	97.2	85	115			
Beryllium	0.52	0.0020	0.5000	0	105	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.7	85	115			
Chromium	0.47	0.0060	0.5000	0	94.9	85	115			
Cobalt	0.46	0.0060	0.5000	0	91.8	85	115			
Nickel	0.46	0.010	0.5000	0	92.4	85	115			
Silver	0.097	0.0050	0.1000	0	96.6	85	115			
Vanadium	0.52	0.050	0.5000	0	104	85	115			
Zinc	0.47	0.010	0.5000	0	93.9	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212D48**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-72387**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **72387**	RunNo: **93794**
Prep Date: **12/30/2022**	Analysis Date: **1/9/2023**	SeqNo: **3386105** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	ND	0.0060								

Sample ID: **LCSLL-72387**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **72387**	RunNo: **93794**
Prep Date: **12/30/2022**	Analysis Date: **1/9/2023**	SeqNo: **3386106** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	0.0072	0.0060	0.006000	0	119	50	150			

Sample ID: **LCS-72387**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **72387**	RunNo: **93794**
Prep Date: **12/30/2022**	Analysis Date: **1/9/2023**	SeqNo: **3386107** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	0.52	0.0060	0.5000	0	104	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212D48**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-A**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A93766**	RunNo: **93766**
Prep Date:	Analysis Date: **1/5/2023**	SeqNo: **3384996** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS-A**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A93766**	RunNo: **93766**
Prep Date:	Analysis Date: **1/5/2023**	SeqNo: **3384997** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0019	0.0020	0.002000	0	94.3	50	150			J
Beryllium	0.0019	0.0020	0.002000	0	96.6	50	150			J
Cadmium	0.0022	0.0020	0.002000	0	109	50	150			
Chromium	0.0054	0.0060	0.006000	0	90.1	50	150			J
Cobalt	0.0063	0.0060	0.006000	0	105	50	150			
Nickel	0.0044	0.010	0.005000	0	88.3	50	150			J
Silver	0.0048	0.0050	0.005000	0	96.3	50	150			J
Vanadium	0.0097	0.050	0.01000	0	96.6	50	150			J
Zinc	0.011	0.010	0.01000	0	110	50	150			

Sample ID: **LCS-A**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A93766**	RunNo: **93766**
Prep Date:	Analysis Date: **1/5/2023**	SeqNo: **3384998** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	95.1	85	115			
Beryllium	0.49	0.0020	0.5000	0	97.6	85	115			
Cadmium	0.48	0.0020	0.5000	0	96.4	85	115			
Chromium	0.47	0.0060	0.5000	0	94.1	85	115			
Cobalt	0.45	0.0060	0.5000	0	90.7	85	115			
Nickel	0.47	0.010	0.5000	0	93.1	85	115			
Silver	0.10	0.0050	0.1000	0	100	85	115			
Vanadium	0.49	0.050	0.5000	0	98.3	85	115			
Zinc	0.47	0.010	0.5000	0	93.2	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212D48**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-72387**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **72387**	RunNo: **93685**
Prep Date: **12/30/2022**	Analysis Date: **1/3/2023**	SeqNo: **3381701** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **MSLCSLL-72387**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **72387**	RunNo: **93685**
Prep Date: **12/30/2022**	Analysis Date: **1/3/2023**	SeqNo: **3381702** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00095	0.0010	0.001000	0	94.7	50	150			J
Arsenic	0.0011	0.0010	0.001000	0	109	50	150			
Lead	0.00051	0.00050	0.0005000	0	101	50	150			
Selenium	0.0011	0.0010	0.001000	0	113	50	150			

Sample ID: **MSLCS-72387**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **72387**	RunNo: **93685**
Prep Date: **12/30/2022**	Analysis Date: **1/3/2023**	SeqNo: **3381703** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.027	0.0010	0.02500	0	109	85	115			
Arsenic	0.025	0.0010	0.02500	0	101	85	115			
Lead	0.013	0.00050	0.01250	0	103	85	115			
Selenium	0.026	0.0010	0.02500	0	105	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212D48**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **A93855**	RunNo: **93855**
Prep Date:	Analysis Date: **1/10/2023**	SeqNo: **3387949** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **A93855**	RunNo: **93855**
Prep Date:	Analysis Date: **1/10/2023**	SeqNo: **3387950** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0010	0.0010	0.001000	0	102	50	150			
Arsenic	0.0012	0.0010	0.001000	0	120	50	150			
Lead	0.00050	0.00050	0.0005000	0	99.3	50	150			J
Selenium	0.00097	0.0010	0.001000	0	96.8	50	150			J

Sample ID: **LCSD**	SampType: **LCSD**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSS02**	Batch ID: **A93855**	RunNo: **93855**
Prep Date:	Analysis Date: **1/10/2023**	SeqNo: **3387952** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	104	85	115	2.62	20	
Arsenic	0.026	0.0010	0.02500	0	104	85	115	1.89	20	
Lead	0.013	0.00050	0.01250	0	106	85	115	3.90	20	
Selenium	0.026	0.0010	0.02500	0	103	85	115	1.01	20	

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **A93877**	RunNo: **93877**
Prep Date:	Analysis Date: **1/11/2023**	SeqNo: **3388811** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **A93877**	RunNo: **93877**
Prep Date:	Analysis Date: **1/11/2023**	SeqNo: **3388813** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212D48**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **A93877**	RunNo: **93877**
Prep Date:	Analysis Date: **1/11/2023**	SeqNo: **3388813** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00092	0.0010	0.001000	0	92.3	50	150			J
Arsenic	0.0012	0.0010	0.001000	0	123	50	150			
Lead	0.00052	0.00050	0.0005000	0	105	50	150			
Selenium	0.0010	0.0010	0.001000	0	100	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **A93877**	RunNo: **93877**
Prep Date:	Analysis Date: **1/11/2023**	SeqNo: **3388814** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	104	85	115			
Arsenic	0.025	0.0010	0.02500	0	100	85	115			
Lead	0.013	0.00050	0.01250	0	102	85	115			
Selenium	0.025	0.0010	0.02500	0	99.1	85	115			

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **A93915**	RunNo: **93915**
Prep Date:	Analysis Date: **1/12/2023**	SeqNo: **3390476** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **A93915**	RunNo: **93915**
Prep Date:	Analysis Date: **1/12/2023**	SeqNo: **3390477** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00098	0.0010	0.001000	0	98.3	50	150			J
Arsenic	0.0011	0.0010	0.001000	0	110	50	150			
Lead	0.00050	0.00050	0.0005000	0	100	50	150			
Selenium	0.00097	0.0010	0.001000	0	96.8	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **A93915**	RunNo: **93915**
Prep Date:	Analysis Date: **1/12/2023**	SeqNo: **3390478** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212D48**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**							
Client ID: **LCSW**	Batch ID: **A93915**	RunNo: **93915**							
Prep Date:	Analysis Date: **1/12/2023**	SeqNo: **3390478**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.023	0.0010	0.02500	0	90.8	85	115			
Arsenic	0.025	0.0010	0.02500	0	98.3	85	115			
Lead	0.012	0.00050	0.01250	0	99.5	85	115			
Selenium	0.025	0.0010	0.02500	0	98.6	85	115			

Sample ID: **LCSD**	SampType: **LCSD**	TestCode: **EPA 200.8: Metals**							
Client ID: **LCSS02**	Batch ID: **A93915**	RunNo: **93915**							
Prep Date:	Analysis Date: **1/12/2023**	SeqNo: **3390479**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.023	0.0010	0.02500	0	90.9	85	115	0.169	20	
Arsenic	0.025	0.0010	0.02500	0	98.3	85	115	0.0649	20	
Lead	0.013	0.00050	0.01250	0	100	85	115	0.581	20	
Selenium	0.025	0.0010	0.02500	0	99.0	85	115	0.356	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212D48**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-72445**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW**	Batch ID: **72445**	RunNo: **93761**
Prep Date: **1/4/2023**	Analysis Date: **1/6/2023**	SeqNo: **3384452** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-72445**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC**	Batch ID: **72445**	RunNo: **93761**
Prep Date: **1/4/2023**	Analysis Date: **1/6/2023**	SeqNo: **3384453** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00019	0.00020	0.0001500	0	124	50	150			J

Sample ID: **LCS-72445**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW**	Batch ID: **72445**	RunNo: **93761**
Prep Date: **1/4/2023**	Analysis Date: **1/6/2023**	SeqNo: **3384454** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0053	0.00020	0.005000	0	105	85	115			

Sample ID: **2212D48-001DMS**	SampType: **MS**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **EB-12-22-22**	Batch ID: **72445**	RunNo: **93761**
Prep Date: **1/4/2023**	Analysis Date: **1/6/2023**	SeqNo: **3384468** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0055	0.00020	0.005000	0.0001395	107	75	125			

Sample ID: **2212D48-001DMSD**	SampType: **MSD**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **EB-12-22-22**	Batch ID: **72445**	RunNo: **93761**
Prep Date: **1/4/2023**	Analysis Date: **1/6/2023**	SeqNo: **3384469** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0056	0.00020	0.005000	0.0001395	108	75	125	1.01	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212D48**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-72358**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **72358**	RunNo: **93623**							
Prep Date: **12/29/2022**	Analysis Date: **12/29/2022**	SeqNo: **3379045**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **MB-72358**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **72358**	RunNo: **93623**							
Prep Date: **12/29/2022**	Analysis Date: **12/29/2022**	SeqNo: **3379050**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-72358**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **LCSW**	Batch ID: **72358**	RunNo: **93623**							
Prep Date: **12/29/2022**	Analysis Date: **12/29/2022**	SeqNo: **3379931**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	106	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212D48**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-72336**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **PBW**	Batch ID: **72336**	RunNo: **93659**
Prep Date: **12/28/2022**	Analysis Date: **12/30/2022**	SeqNo: **3380133** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.079	0.064								
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.033		0.03750		87.3	15.9	177			

Sample ID: **LCS-72336**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSW**	Batch ID: **72336**	RunNo: **93659**
Prep Date: **12/28/2022**	Analysis Date: **12/30/2022**	SeqNo: **3380134** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.26	0.064	0.1875	0	137	31.2	125			BS
Surr: DNOP	0.019		0.01875		103	15.9	177			

Sample ID: **LCSD-72336**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02**	Batch ID: **72336**	RunNo: **93659**
Prep Date: **12/28/2022**	Analysis Date: **12/30/2022**	SeqNo: **3380135** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.25	0.064	0.1875	0	134	31.2	125	1.67	20	BS
Surr: DNOP	0.019		0.01875		100	15.9	177	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212D48**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **PBW**	Batch ID: **R93580**	RunNo: **93580**							
Prep Date:	Analysis Date: **12/28/2022**	SeqNo: **3377261**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	19		20.00		97.0	70	130			

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **LCSW**	Batch ID: **R93580**	RunNo: **93580**							
Prep Date:	Analysis Date: **12/28/2022**	SeqNo: **3377262**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.51	0.050	0.5000	0	101	80	120			
Surr: BFB	39		20.00		195	70	130			S

Sample ID: **2212d48-002ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **OW-1**	Batch ID: **R93580**	RunNo: **93580**							
Prep Date:	Analysis Date: **12/28/2022**	SeqNo: **3377270**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.48	0.050	0.5000	0	95.6	70	130			
Surr: BFB	39		20.00		193	70	130			S

Sample ID: **2212d48-002amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **OW-1**	Batch ID: **R93580**	RunNo: **93580**							
Prep Date:	Analysis Date: **12/28/2022**	SeqNo: **3377271**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.49	0.050	0.5000	0	98.0	70	130	2.44	20	
Surr: BFB	39		20.00		196	70	130	0	0	S

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **LCSW**	Batch ID: **R93606**	RunNo: **93606**							
Prep Date:	Analysis Date: **12/28/2022**	SeqNo: **3377664**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.54	0.050	0.5000	0	108	80	120			
Surr: BFB	47		20.00		236	70	130			S

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **PBW**	Batch ID: **R93606**	RunNo: **93606**							
Prep Date:	Analysis Date: **12/28/2022**	SeqNo: **3377665**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212D48**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **R93606**	RunNo: **93606**
Prep Date:	Analysis Date: **12/28/2022**	SeqNo: **3377665** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	21		20.00		106	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212D48**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R93684**	RunNo: **93684**
Prep Date:	Analysis Date: **1/3/2023**	SeqNo: **3381603** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	92.3	70	130			
Toluene	19	1.0	20.00	0	92.5	70	130			
Chlorobenzene	20	1.0	20.00	0	98.7	70	130			
1,1-Dichloroethene	17	1.0	20.00	0	84.2	70	130			
Trichloroethene (TCE)	17	1.0	20.00	0	85.8	70	130			
Surr: 1,2-Dichloroethane-d4	8.8		10.00		88.5	70	130			
Surr: 4-Bromofluorobenzene	9.7		10.00		96.9	70	130			
Surr: Dibromofluoromethane	8.7		10.00		87.2	70	130			
Surr: Toluene-d8	9.0		10.00		90.2	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R93684**	RunNo: **93684**
Prep Date:	Analysis Date: **1/3/2023**	SeqNo: **3381621** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212D48**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R93684**	RunNo: **93684**
Prep Date:	Analysis Date: **1/3/2023**	SeqNo: **3381621** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212D48**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R93684**	RunNo: **93684**
Prep Date:	Analysis Date: **1/3/2023**	SeqNo: **3381621** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		100	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		100	70	130			
Surr: Dibromofluoromethane	9.5		10.00		94.7	70	130			
Surr: Toluene-d8	9.8		10.00		97.9	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212D48**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb-72320**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **72320**	RunNo: **93714**
Prep Date: **12/27/2022**	Analysis Date: **1/4/2023**	SeqNo: **3382778** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Anthracene	ND	10								
Benz(a)anthracene	ND	5.0								
Benzo(b)fluoranthene	ND	10								
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	10								
2,4-Dinitrophenol	ND	20								
Fluoranthene	ND	10								
Fluorene	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
1-Methylnaphthalene	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
Naphthalene	ND	5.0								
Phenanthrene	ND	10								
Phenol	ND	20								
Pyrene	ND	10								
Pyridine	ND	40								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	67		200.0		33.5	15	84.5			
Surr: Phenol-d5	54		200.0		26.8	15	67			
Surr: 2,4,6-Tribromophenol	90		200.0		44.8	15	108			
Surr: Nitrobenzene-d5	46		100.0		46.5	16.8	112			
Surr: 2-Fluorobiphenyl	36		100.0		36.4	15	101			
Surr: 4-Terphenyl-d14	76		100.0		76.0	34.4	134			

Sample ID: **lcs-72320**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **72320**	RunNo: **93714**
Prep Date: **12/27/2022**	Analysis Date: **1/4/2023**	SeqNo: **3382779** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212D48**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **lcs-72320**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **72320**	RunNo: **93714**
Prep Date: **12/27/2022**	Analysis Date: **1/4/2023**	SeqNo: **3382779** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	58	10	100.0	0	57.8	21.3	104			
1,4-Dichlorobenzene	44	5.0	100.0	0	43.7	15	89.8			
Phenol	83	20	200.0	0	41.7	17	61.1			
Pyrene	86	10	100.0	0	86.4	61	123			
Surr: 2-Fluorophenol	100		200.0		51.1	15	84.5			
Surr: Phenol-d5	76		200.0		38.2	15	67			
Surr: 2,4,6-Tribromophenol	160		200.0		78.8	15	108			
Surr: Nitrobenzene-d5	69		100.0		68.7	16.8	112			
Surr: 2-Fluorobiphenyl	59		100.0		58.7	15	101			
Surr: 4-Terphenyl-d14	95		100.0		95.0	34.4	134			

Sample ID: **lcsd-72320**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **72320**	RunNo: **93714**
Prep Date: **12/27/2022**	Analysis Date: **1/4/2023**	SeqNo: **3382780** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	63	10	100.0	0	62.8	21.3	104	8.34	45.3	
1,4-Dichlorobenzene	46	5.0	100.0	0	45.5	15	89.8	4.21	39.6	
Phenol	85	20	200.0	0	42.7	17	61.1	2.45	42.5	
Pyrene	88	10	100.0	0	88.1	61	123	1.98	11.8	
Surr: 2-Fluorophenol	100		200.0		51.8	15	84.5	0	0	
Surr: Phenol-d5	83		200.0		41.6	15	67	0	0	
Surr: 2,4,6-Tribromophenol	160		200.0		82.3	15	108	0	0	
Surr: Nitrobenzene-d5	74		100.0		74.2	16.8	112	0	0	
Surr: 2-Fluorobiphenyl	64		100.0		64.0	15	101	0	0	
Surr: 4-Terphenyl-d14	110		100.0		106	34.4	134	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212D48**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb-72320**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **72320**	RunNo: **93681**
Prep Date: **12/27/2022**	Analysis Date: **1/3/2023**	SeqNo: **3381436** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.30								
1-Methylnaphthalene	ND	0.30								
2-Methylnaphthalene	ND	0.30								
Acenaphthene	ND	0.30								
Fluorene	ND	0.30								
Phenanthrene	ND	0.30								
Anthracene	ND	0.30								
Fluoranthene	ND	0.30								
Pyrene	ND	1.0								
Benz(a)anthracene	ND	0.30								
Chrysene	ND	0.30								
Benzo(b)fluoranthene	ND	0.40								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	41		100.0		41.0	15	108			
Surr: 2,4,6-Tribromophenol	70		200.0		35.1	15	112			
Surr: 2-Fluorobiphenyl	34		100.0		34.5	15	107			
Surr: 4-Terphenyl-d14	79		100.0		78.6	15	166			

Sample ID: **lcs-72320-lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **72320**	RunNo: **93681**
Prep Date: **12/27/2022**	Analysis Date: **1/3/2023**	SeqNo: **3381437** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.66	0.30	2.000	0	33.0	15	60.5			
Naphthalene	1.0	0.30	2.000	0	52.0	15	78.3			
1-Methylnaphthalene	1.1	0.30	2.000	0	53.0	15	79.6			
2-Methylnaphthalene	1.0	0.30	2.000	0	52.0	15	78.6			
Acenaphthene	1.1	0.30	2.000	0	57.0	15	92			
Fluorene	1.3	0.30	2.000	0	63.0	15	96			
Phenanthrene	1.4	0.30	2.000	0	69.0	21	103			
Anthracene	1.5	0.30	2.000	0	74.0	21.1	106			
Fluoranthene	1.7	0.30	2.000	0	84.0	32.8	119			
Pyrene	1.5	1.0	2.000	0	73.0	34.1	110			
Benz(a)anthracene	1.8	0.30	2.000	0	89.0	32	132			
Chrysene	1.5	0.30	2.000	0	77.0	31.3	112			
Benzo(b)fluoranthene	1.7	0.40	2.000	0	83.0	34.1	119			
Indeno(1,2,3-cd)pyrene	2.2	0.30	2.000	0	111	24.7	152			
Surr: Nitrobenzene-d5	62		102.0		60.4	15	108			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212D48**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **lcs-72320-lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **72320**	RunNo: **93681**
Prep Date: **12/27/2022**	Analysis Date: **1/3/2023**	SeqNo: **3381437** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	92		204.0		45.2	15	112			
Surr: 2-Fluorobiphenyl	53		102.0		51.6	15	107			
Surr: 4-Terphenyl-d14	87		102.0		85.2	15	166			

Sample ID: **lcsd-72320-lf**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02**	Batch ID: **72320**	RunNo: **93681**
Prep Date: **12/27/2022**	Analysis Date: **1/3/2023**	SeqNo: **3381438** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.66	0.30	2.000	0	33.0	15	60.5	0	29.7	
Naphthalene	1.1	0.30	2.000	0	56.0	15	78.3	7.41	31.7	
1-Methylnaphthalene	1.1	0.30	2.000	0	56.0	15	79.6	5.50	31.4	
2-Methylnaphthalene	1.1	0.30	2.000	0	55.0	15	78.6	5.61	30.5	
Acenaphthene	1.2	0.30	2.000	0	60.0	15	92	5.13	30.5	
Fluorene	1.3	0.30	2.000	0	66.0	15	96	4.65	25.1	
Phenanthrene	1.5	0.30	2.000	0	73.0	21	103	5.63	26.4	
Anthracene	1.6	0.30	2.000	0	78.0	21.1	106	5.26	14.4	
Fluoranthene	1.8	0.30	2.000	0	88.0	32.8	119	4.65	14.8	
Pyrene	1.5	1.0	2.000	0	76.0	34.1	110	4.03	19.2	
Benz(a)anthracene	1.9	0.30	2.000	0	94.0	32	132	5.46	29.3	
Chrysene	1.6	0.30	2.000	0	80.0	31.3	112	3.82	19	
Benzo(b)fluoranthene	1.7	0.40	2.000	0	87.0	34.1	119	4.71	31.6	
Indeno(1,2,3-cd)pyrene	2.4	0.30	2.000	0	120	24.7	152	7.79	21.3	
Surr: Nitrobenzene-d5	64		102.0		62.4	15	108	0	0	
Surr: 2,4,6-Tribromophenol	96		204.0		46.9	15	112	0	0	
Surr: 2-Fluorobiphenyl	53		102.0		51.9	15	107	0	0	
Surr: 4-Terphenyl-d14	92		102.0		90.2	15	166	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 3147 of 3808

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Marathon | Work Order Number: 2212D48 | ReptNo: 1

Received By: Joseph Alderete 12/23/2022 8:00:00 AM

Completed By: Isaiah Ortiz 12/23/2022 9:15:11 AM

Reviewed By: 12-23-22

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and O&G) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☑ No ☐ NA ☐
10. Were any sample containers received broken? Yes ☐ No ☑

# of preserved bottles checked for pH: 8 x6 (<2 or >12 unless noted) — 9 KPA 12.23.22

Adjusted? NO

Checked by: KPA 12-23-22

11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are analyses correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: ____ Date: ____

By Whom: ____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: ____

Client Instructions: ____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.1	Good	Not Present			
2	1.6	Good	Not Present			
3	1.9	Good	Not Present			
4	0.4	Good	Not Present			
5	1.1	Good	Not Present			

Received by OCD: 4/21/2023 9:21:57 AM

Released to Imaging: 4/21/2023 9:40:26 AM

Page 3148 of 3808

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Marathon | Work Order Number: 2212D48 | ReptNo: 1

Received by OCD: 4/21/2023 9:21:57 AM

Released to Imaging: 4/21/2023 9:40:26 AM

Client: Marathon Gallup Refinery

Mailing Address: 92 Giant Crossing Road, Jamestown NM 87301

Phone #: 606-640-1823

email or Fax#:

QA/QC Package: X Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance ☐ NELAC ☐ Other

X EDD (Type)

X Standard Rush

Project Name: 2022 GW Sampling 4th Quarter

Project #: 697-080-001

Project Manager: Lesli Alexander

Sampler:

On Ice: ☑ Yes ☐ No

# of Coolers: 5

Cooler Temp (including CF): See remarks

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2217048	See Analyte	8260B VOC	8270C:SVOC	8270C-SIM: PAH, 1,4 Dioxane	8015: TPH GRO/DRO/MRO	E200.7: Metals	E200.7: Dissolved Metals	E245.1 Mercury	E504.1 EDB	E335.4: Cyanide Subbed		537.1:PFAS	SM 5201B: BOD	410.4: COD	
12/22/22	8:30		EB-12-22-22	13		001		X	X	X	X	X	X	X	X	X					
12/22/22	8:55		DW-1	13		002		X	X	X	X	X	X	X	X	X					
12/22/22	9:25		BW-4B	13		003		X	X	X	X	X	X	X	X	X					
12/22/22	10:00		BW-5C	13		004		X	X	X	X	X	X	X	X	X					
12/22/22	10:30		BW-5B	13		005		X	X	X	X	X	X	X	X	X					
12/22/22	11:00		[redacted] MW-44	13		006		X	X	X	X	X	X	X	X	X					
12/22/22	11:30		DW-10	13		007		X	X	X	X	X	X	X	X	X					
12/22/22	12:00		MW-43	13		008		X	X	X	X	X	X	X	X	X					
12/22/22	12:00		FB-12-22-22	3		009		X	X												
12/22/22	—		DUP-12-22-22	13		010		X	X	X	X	X	X	X	X	X					
			Trip Blank			011															
			KMA 12.23.22																		

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
12/22/22	12:30	[signature] Trip	[signature]	courier	12/23/22	8:00
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

Cooler 1: 3.1+0=3.1°C Cooler 2: temp 1.6+0=1.6°C
Cooler 3: temp 1.9+0=1.9°C Cooler 4: temp 0.4+0=0.4°C
Cooler 5: temp 1.1+0=1.1°C [signature] 12-23-22

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any subcontracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

January 17, 2023

Lesli Alexander

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX: (505) 632-3911

RE: 2022 GW Sampling 4th Quarter OrderNo.: 2212E09

Dear Lesli Alexander:

Hall Environmental Analysis Laboratory received 10 sample(s) on 12/28/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **2212E09**
Date: **1/17/2023**

CLIENT: Marathon
Project: 2022 GW Sampling 4th Quarter

Analytical Notes Regarding EPA Method 8015D DRO/MRO:
The method blank had a low level detection for DRO. Samples with detections are flagged with a "B".

"S" flagged surrogates/spikes denote that the analyte recovery was outstide of the standard limits.

Analytical Notes Regarding EPA Method 8270 and 8270 SIMS:
1-Methylnaphthalene, 2-Methylnaphthalene and Naphthalene were reported by EPA Method 8270 instead of EPA Method 8270SIMs becuase of their elevated concentrations for samples OW-55 and OW-66.

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-27-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022 9:30:00 AM
Lab ID: 2212E09-001A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	1/3/2023 8:47:11 PM	R93693
Surr: BFB	90.4	0	70-130		%Rec	1	1/3/2023 8:47:11 PM	R93693
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	1.0	1.0		µg/L	1	1/4/2023 5:47:24 PM	R93710
Toluene	ND	1.0	1.0		µg/L	1	1/4/2023 5:47:24 PM	R93710
Ethylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 5:47:24 PM	R93710
Methyl tert-butyl ether (MTBE)	ND	1.0	1.0		µg/L	1	1/4/2023 5:47:24 PM	R93710
1,2,4-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 5:47:24 PM	R93710
1,3,5-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 5:47:24 PM	R93710
1,2-Dichloroethane (EDC)	ND	1.0	1.0		µg/L	1	1/4/2023 5:47:24 PM	R93710
Acetone	ND	10	10		µg/L	1	1/4/2023 5:47:24 PM	R93710
Bromomethane	ND	3.0	3.0		µg/L	1	1/4/2023 5:47:24 PM	R93710
2-Butanone	ND	10	10		µg/L	1	1/4/2023 5:47:24 PM	R93710
Carbon disulfide	ND	10	10		µg/L	1	1/4/2023 5:47:24 PM	R93710
Chlorobenzene	ND	1.0	1.0		µg/L	1	1/4/2023 5:47:24 PM	R93710
Chloroform	ND	1.0	1.0		µg/L	1	1/4/2023 5:47:24 PM	R93710
Chloromethane	ND	3.0	3.0		µg/L	1	1/4/2023 5:47:24 PM	R93710
cis-1,2-DCE	ND	1.0	1.0		µg/L	1	1/4/2023 5:47:24 PM	R93710
1,1-Dichloroethane	ND	1.0	1.0		µg/L	1	1/4/2023 5:47:24 PM	R93710
1,1-Dichloroethene	ND	1.0	1.0		µg/L	1	1/4/2023 5:47:24 PM	R93710
Isopropylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 5:47:24 PM	R93710
4-Isopropyltoluene	ND	1.0	1.0		µg/L	1	1/4/2023 5:47:24 PM	R93710
Methylene Chloride	ND	3.0	3.0		µg/L	1	1/4/2023 5:47:24 PM	R93710
n-Butylbenzene	ND	3.0	3.0		µg/L	1	1/4/2023 5:47:24 PM	R93710
n-Propylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 5:47:24 PM	R93710
sec-Butylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 5:47:24 PM	R93710
Styrene	ND	1.0	1.0		µg/L	1	1/4/2023 5:47:24 PM	R93710
Tetrachloroethene (PCE)	ND	1.0	1.0		µg/L	1	1/4/2023 5:47:24 PM	R93710
1,1,1-Trichloroethane	ND	1.0	1.0		µg/L	1	1/4/2023 5:47:24 PM	R93710
Trichloroethene (TCE)	ND	1.0	1.0		µg/L	1	1/4/2023 5:47:24 PM	R93710
Vinyl chloride	ND	1.0	1.0		µg/L	1	1/4/2023 5:47:24 PM	R93710
Xylenes, Total	ND	1.5	1.5		µg/L	1	1/4/2023 5:47:24 PM	R93710
Surr: 1,2-Dichloroethane-d4	93.6	0	70-130		%Rec	1	1/4/2023 5:47:24 PM	R93710
Surr: 4-Bromofluorobenzene	115	0	70-130		%Rec	1	1/4/2023 5:47:24 PM	R93710
Surr: Dibromofluoromethane	87.2	0	70-130		%Rec	1	1/4/2023 5:47:24 PM	R93710
Surr: Toluene-d8	106	0	70-130		%Rec	1	1/4/2023 5:47:24 PM	R93710

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-27-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022 9:30:00 AM
Lab ID: 2212E09-001B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0096		µg/L	1	12/30/2022 4:09:22 AM	72358

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-27-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022 9:30:00 AM
Lab ID: 2212E09-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.041	0.016	0.064	JB	mg/L	1	1/5/2023 2:35:19 PM	72386
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	1/5/2023 2:35:19 PM	72386
Surr: DNOP	109	0	15.9-177		%Rec	1	1/5/2023 2:35:19 PM	72386
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	1/6/2023 6:59:55 PM	72347
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	1/6/2023 6:59:55 PM	72347
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	1/6/2023 6:59:55 PM	72347
Di-n-octyl phthalate	ND	12	20		µg/L	1	1/6/2023 6:59:55 PM	72347
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	1/6/2023 6:59:55 PM	72347
Diethyl phthalate	ND	6.0	10		µg/L	1	1/6/2023 6:59:55 PM	72347
Dimethyl phthalate	ND	6.0	10		µg/L	1	1/6/2023 6:59:55 PM	72347
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	1/6/2023 6:59:55 PM	72347
2,4-Dinitrophenol	ND	16	20		µg/L	1	1/6/2023 6:59:55 PM	72347
2-Methylphenol	ND	5.0	10		µg/L	1	1/6/2023 6:59:55 PM	72347
3+4-Methylphenol	ND	5.1	10		µg/L	1	1/6/2023 6:59:55 PM	72347
Phenol	ND	18	20		µg/L	1	1/6/2023 6:59:55 PM	72347
Pyridine	ND	14	40		µg/L	1	1/6/2023 6:59:55 PM	72347
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	1/6/2023 6:59:55 PM	72347
Surr: 2-Fluorophenol	47.0	0	15-84.5		%Rec	1	1/6/2023 6:59:55 PM	72347
Surr: Phenol-d5	35.1	0	15-67		%Rec	1	1/6/2023 6:59:55 PM	72347
Surr: 2,4,6-Tribromophenol	66.2	0	15-108		%Rec	1	1/6/2023 6:59:55 PM	72347
Surr: Nitrobenzene-d5	63.2	0	16.8-112		%Rec	1	1/6/2023 6:59:55 PM	72347
Surr: 2-Fluorobiphenyl	58.6	0	15-101		%Rec	1	1/6/2023 6:59:55 PM	72347
Surr: 4-Terphenyl-d14	85.8	0	34.4-134		%Rec	1	1/6/2023 6:59:55 PM	72347
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	1/4/2023 6:21:00 PM	72347
Naphthalene	ND	0.20	0.30		µg/L	1	1/4/2023 6:21:00 PM	72347
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	1/4/2023 6:21:00 PM	72347
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	1/4/2023 6:21:00 PM	72347
Acenaphthene	ND	0.14	0.30		µg/L	1	1/4/2023 6:21:00 PM	72347
Fluorene	ND	0.095	0.30		µg/L	1	1/4/2023 6:21:00 PM	72347
Phenanthrene	ND	0.16	0.30		µg/L	1	1/4/2023 6:21:00 PM	72347
Anthracene	ND	0.14	0.30		µg/L	1	1/4/2023 6:21:00 PM	72347
Fluoranthene	ND	0.14	0.30		µg/L	1	1/4/2023 6:21:00 PM	72347
Pyrene	ND	0.32	1.0		µg/L	1	1/4/2023 6:21:00 PM	72347
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	1/4/2023 6:21:00 PM	72347
Chrysene	ND	0.25	0.30		µg/L	1	1/4/2023 6:21:00 PM	72347
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	1/4/2023 6:21:00 PM	72347
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	1/4/2023 6:21:00 PM	72347

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-27-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022 9:30:00 AM
Lab ID: 2212E09-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	62.1	0	15-108		%Rec	1	1/4/2023 6:21:00 PM	72347
Surr: 2-Fluorobiphenyl	56.6	0	15-107		%Rec	1	1/4/2023 6:21:00 PM	72347
Surr: 4-Terphenyl-d14	104	0	15-166		%Rec	1	1/4/2023 6:21:00 PM	72347

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-27-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022 9:30:00 AM
Lab ID: 2212E09-001D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	ND	0.0016	0.0030		mg/L	1	1/9/2023 9:24:43 AM	72409
Beryllium	ND	0.00060	0.0020		mg/L	1	1/9/2023 9:24:43 AM	72409
Cadmium	ND	0.0018	0.0020		mg/L	1	1/9/2023 9:24:43 AM	72409
Chromium	ND	0.0020	0.0060		mg/L	1	1/9/2023 9:24:43 AM	72409
Cobalt	ND	0.0035	0.0060		mg/L	1	1/9/2023 9:24:43 AM	72409
Nickel	ND	0.0053	0.010		mg/L	1	1/9/2023 9:24:43 AM	72409
Silver	ND	0.0018	0.0050		mg/L	1	1/9/2023 9:24:43 AM	72409
Vanadium	ND	0.0035	0.050		mg/L	1	1/9/2023 9:24:43 AM	72409
Zinc	ND	0.0039	0.010		mg/L	1	1/9/2023 9:24:43 AM	72409
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	1/5/2023 3:31:57 PM	72409
Arsenic	ND	0.00022	0.0010		mg/L	1	1/5/2023 3:31:57 PM	72409
Lead	ND	0.00019	0.00050		mg/L	1	1/5/2023 3:31:57 PM	72409
Selenium	ND	0.00089	0.0010		mg/L	1	1/5/2023 3:31:57 PM	72409
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.000099	0.000091	0.00020	J	mg/L	1	1/6/2023 8:40:40 AM	72446

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-27-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022 9:30:00 AM
Lab ID: 2212E09-001E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	ND	0.0011	0.0020		mg/L	1	1/5/2023 7:36:24 PM	B93766
Beryllium	ND	0.00059	0.0020		mg/L	1	1/5/2023 7:36:24 PM	B93766
Cadmium	ND	0.00098	0.0020		mg/L	1	1/5/2023 7:36:24 PM	B93766
Chromium	ND	0.0020	0.0060		mg/L	1	1/5/2023 7:36:24 PM	B93766
Cobalt	ND	0.0024	0.0060		mg/L	1	1/5/2023 7:36:24 PM	B93766
Nickel	ND	0.0033	0.010		mg/L	1	1/5/2023 7:36:24 PM	B93766
Silver	ND	0.0013	0.0050		mg/L	1	1/5/2023 7:36:24 PM	B93766
Vanadium	0.0017	0.0017	0.050	J	mg/L	1	1/5/2023 7:36:24 PM	B93766
Zinc	ND	0.0032	0.010		mg/L	1	1/5/2023 7:36:24 PM	B93766
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00045	0.0010		mg/L	1	1/10/2023 1:10:19 PM	A93855
Arsenic	ND	0.00057	0.0010		mg/L	1	1/10/2023 1:10:19 PM	A93855
Lead	ND	0.000099	0.00050		mg/L	1	1/10/2023 1:10:19 PM	A93855
Selenium	ND	0.00056	0.0010		mg/L	1	1/10/2023 1:10:19 PM	A93855
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00010	0.000091	0.00020	J	mg/L	1	1/6/2023 8:42:49 AM	72446

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-50
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022 10:00:00 AM
Lab ID: 2212E09-002A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	0.062	0.0090	0.050		mg/L	1	1/3/2023 9:10:38 PM	R93693
Surr: BFB	90.3	0	70-130		%Rec	1	1/3/2023 9:10:38 PM	R93693
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	1.0	1.0		µg/L	1	1/4/2023 6:15:57 PM	R93710
Toluene	ND	1.0	1.0		µg/L	1	1/4/2023 6:15:57 PM	R93710
Ethylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 6:15:57 PM	R93710
Methyl tert-butyl ether (MTBE)	69	1.0	1.0		µg/L	1	1/4/2023 6:15:57 PM	R93710
1,2,4-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 6:15:57 PM	R93710
1,3,5-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 6:15:57 PM	R93710
1,2-Dichloroethane (EDC)	ND	1.0	1.0		µg/L	1	1/4/2023 6:15:57 PM	R93710
Acetone	ND	10	10		µg/L	1	1/4/2023 6:15:57 PM	R93710
Bromomethane	ND	3.0	3.0		µg/L	1	1/4/2023 6:15:57 PM	R93710
2-Butanone	ND	10	10		µg/L	1	1/4/2023 6:15:57 PM	R93710
Carbon disulfide	ND	10	10		µg/L	1	1/4/2023 6:15:57 PM	R93710
Chlorobenzene	ND	1.0	1.0		µg/L	1	1/4/2023 6:15:57 PM	R93710
Chloroform	ND	1.0	1.0		µg/L	1	1/4/2023 6:15:57 PM	R93710
Chloromethane	ND	3.0	3.0		µg/L	1	1/4/2023 6:15:57 PM	R93710
cis-1,2-DCE	ND	1.0	1.0		µg/L	1	1/4/2023 6:15:57 PM	R93710
1,1-Dichloroethane	ND	1.0	1.0		µg/L	1	1/4/2023 6:15:57 PM	R93710
1,1-Dichloroethene	ND	1.0	1.0		µg/L	1	1/4/2023 6:15:57 PM	R93710
Isopropylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 6:15:57 PM	R93710
4-Isopropyltoluene	ND	1.0	1.0		µg/L	1	1/4/2023 6:15:57 PM	R93710
Methylene Chloride	ND	3.0	3.0		µg/L	1	1/4/2023 6:15:57 PM	R93710
n-Butylbenzene	ND	3.0	3.0		µg/L	1	1/4/2023 6:15:57 PM	R93710
n-Propylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 6:15:57 PM	R93710
sec-Butylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 6:15:57 PM	R93710
Styrene	ND	1.0	1.0		µg/L	1	1/4/2023 6:15:57 PM	R93710
Tetrachloroethene (PCE)	ND	1.0	1.0		µg/L	1	1/4/2023 6:15:57 PM	R93710
1,1,1-Trichloroethane	ND	1.0	1.0		µg/L	1	1/4/2023 6:15:57 PM	R93710
Trichloroethene (TCE)	ND	1.0	1.0		µg/L	1	1/4/2023 6:15:57 PM	R93710
Vinyl chloride	ND	1.0	1.0		µg/L	1	1/4/2023 6:15:57 PM	R93710
Xylenes, Total	ND	1.5	1.5		µg/L	1	1/4/2023 6:15:57 PM	R93710
Surr: 1,2-Dichloroethane-d4	89.9	0	70-130		%Rec	1	1/4/2023 6:15:57 PM	R93710
Surr: 4-Bromofluorobenzene	118	0	70-130		%Rec	1	1/4/2023 6:15:57 PM	R93710
Surr: Dibromofluoromethane	84.1	0	70-130		%Rec	1	1/4/2023 6:15:57 PM	R93710
Surr: Toluene-d8	102	0	70-130		%Rec	1	1/4/2023 6:15:57 PM	R93710

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-50
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022 10:00:00 AM
Lab ID: 2212E09-002B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	12/30/2022 4:24:17 AM	72358

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-50
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022 10:00:00 AM
Lab ID: 2212E09-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.023	0.016	0.064	JB	mg/L	1	1/5/2023 2:59:21 PM	72386
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	1/5/2023 2:59:21 PM	72386
Surr: DNOP	99.7	0	15.9-177		%Rec	1	1/5/2023 2:59:21 PM	72386
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	1/6/2023 7:40:48 PM	72347
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	1/6/2023 7:40:48 PM	72347
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	1/6/2023 7:40:48 PM	72347
Di-n-octyl phthalate	ND	12	20		µg/L	1	1/6/2023 7:40:48 PM	72347
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	1/6/2023 7:40:48 PM	72347
Diethyl phthalate	ND	6.0	10		µg/L	1	1/6/2023 7:40:48 PM	72347
Dimethyl phthalate	ND	6.0	10		µg/L	1	1/6/2023 7:40:48 PM	72347
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	1/6/2023 7:40:48 PM	72347
2,4-Dinitrophenol	ND	16	20		µg/L	1	1/6/2023 7:40:48 PM	72347
2-Methylphenol	ND	5.0	10		µg/L	1	1/6/2023 7:40:48 PM	72347
3+4-Methylphenol	ND	5.1	10		µg/L	1	1/6/2023 7:40:48 PM	72347
Phenol	ND	18	20		µg/L	1	1/6/2023 7:40:48 PM	72347
Pyridine	ND	14	40		µg/L	1	1/6/2023 7:40:48 PM	72347
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	1/6/2023 7:40:48 PM	72347
Surr: 2-Fluorophenol	39.5	0	15-84.5		%Rec	1	1/6/2023 7:40:48 PM	72347
Surr: Phenol-d5	30.1	0	15-67		%Rec	1	1/6/2023 7:40:48 PM	72347
Surr: 2,4,6-Tribromophenol	54.4	0	15-108		%Rec	1	1/6/2023 7:40:48 PM	72347
Surr: Nitrobenzene-d5	51.6	0	16.8-112		%Rec	1	1/6/2023 7:40:48 PM	72347
Surr: 2-Fluorobiphenyl	46.4	0	15-101		%Rec	1	1/6/2023 7:40:48 PM	72347
Surr: 4-Terphenyl-d14	74.5	0	34.4-134		%Rec	1	1/6/2023 7:40:48 PM	72347
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	1/4/2023 7:05:00 PM	R93725
Naphthalene	ND	0.20	0.30		µg/L	1	1/4/2023 7:05:00 PM	R93725
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	1/4/2023 7:05:00 PM	R93725
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	1/4/2023 7:05:00 PM	R93725
Acenaphthene	ND	0.14	0.30		µg/L	1	1/4/2023 7:05:00 PM	R93725
Fluorene	ND	0.095	0.30		µg/L	1	1/4/2023 7:05:00 PM	R93725
Phenanthrene	ND	0.16	0.30		µg/L	1	1/4/2023 7:05:00 PM	R93725
Anthracene	ND	0.14	0.30		µg/L	1	1/4/2023 7:05:00 PM	R93725
Fluoranthene	ND	0.14	0.30		µg/L	1	1/4/2023 7:05:00 PM	R93725
Pyrene	ND	0.32	1.0		µg/L	1	1/4/2023 7:05:00 PM	R93725
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	1/4/2023 7:05:00 PM	R93725
Chrysene	ND	0.25	0.30		µg/L	1	1/4/2023 7:05:00 PM	R93725
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	1/4/2023 7:05:00 PM	R93725
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	1/4/2023 7:05:00 PM	R93725

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-50
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022 10:00:00 AM
Lab ID: 2212E09-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	57.1	0	15-108		%Rec	1	1/4/2023 7:05:00 PM	R93725
Surr: 2-Fluorobiphenyl	51.4	0	15-107		%Rec	1	1/4/2023 7:05:00 PM	R93725
Surr: 4-Terphenyl-d14	102	0	15-166		%Rec	1	1/4/2023 7:05:00 PM	R93725

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-50
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022 10:00:00 AM
Lab ID: 2212E09-002D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.052	0.0016	0.0030		mg/L	1	1/9/2023 3:49:22 PM	72409
Beryllium	ND	0.00060	0.0020		mg/L	1	1/9/2023 9:34:24 AM	72409
Cadmium	ND	0.0018	0.0020		mg/L	1	1/9/2023 9:34:24 AM	72409
Chromium	ND	0.0020	0.0060		mg/L	1	1/9/2023 9:34:24 AM	72409
Cobalt	ND	0.0035	0.0060		mg/L	1	1/9/2023 3:49:22 PM	72409
Nickel	ND	0.0053	0.010		mg/L	1	1/9/2023 9:34:24 AM	72409
Silver	ND	0.0018	0.0050		mg/L	1	1/9/2023 9:34:24 AM	72409
Vanadium	ND	0.0035	0.050		mg/L	1	1/9/2023 9:34:24 AM	72409
Zinc	0.0044	0.0039	0.010	J	mg/L	1	1/9/2023 9:34:24 AM	72409
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	1/5/2023 3:34:23 PM	72409
Arsenic	0.0023	0.00022	0.0010		mg/L	1	1/5/2023 3:34:23 PM	72409
Lead	ND	0.00019	0.00050		mg/L	1	1/5/2023 3:34:23 PM	72409
Selenium	ND	0.00089	0.0010		mg/L	1	1/5/2023 3:34:23 PM	72409
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00010	0.000091	0.00020	J	mg/L	1	1/6/2023 8:44:57 AM	72446

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-50
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022 10:00:00 AM
Lab ID: 2212E09-002E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.053	0.0011	0.0020		mg/L	1	1/5/2023 7:41:01 PM	B93766
Beryllium	ND	0.00059	0.0020		mg/L	1	1/5/2023 7:41:01 PM	B93766
Cadmium	ND	0.00098	0.0020		mg/L	1	1/5/2023 7:41:01 PM	B93766
Chromium	ND	0.0020	0.0060		mg/L	1	1/5/2023 7:41:01 PM	B93766
Cobalt	ND	0.0024	0.0060		mg/L	1	1/5/2023 7:41:01 PM	B93766
Nickel	ND	0.0033	0.010		mg/L	1	1/5/2023 7:41:01 PM	B93766
Silver	ND	0.0013	0.0050		mg/L	1	1/5/2023 7:41:01 PM	B93766
Vanadium	0.0025	0.0017	0.050	J	mg/L	1	1/5/2023 7:41:01 PM	B93766
Zinc	0.0073	0.0032	0.010	J	mg/L	1	1/5/2023 7:41:01 PM	B93766
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00045	0.0010		mg/L	1	1/10/2023 1:15:39 PM	A93855
Arsenic	0.0028	0.00057	0.0010		mg/L	1	1/10/2023 1:15:39 PM	A93855
Lead	ND	0.000099	0.00050		mg/L	1	1/10/2023 1:15:39 PM	A93855
Selenium	0.0019	0.00056	0.0010		mg/L	1	1/10/2023 1:15:39 PM	A93855
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00010	0.000091	0.00020	J	mg/L	1	1/6/2023 8:47:06 AM	72446

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-52
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022 10:30:00 AM
Lab ID: 2212E09-003A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	1/3/2023 9:34:06 PM	R93693
Surr: BFB	89.0	0	70-130		%Rec	1	1/3/2023 9:34:06 PM	R93693
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	1.0	1.0		µg/L	1	1/4/2023 6:44:30 PM	R93710
Toluene	ND	1.0	1.0		µg/L	1	1/4/2023 6:44:30 PM	R93710
Ethylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 6:44:30 PM	R93710
Methyl tert-butyl ether (MTBE)	7.3	1.0	1.0		µg/L	1	1/4/2023 6:44:30 PM	R93710
1,2,4-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 6:44:30 PM	R93710
1,3,5-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 6:44:30 PM	R93710
1,2-Dichloroethane (EDC)	ND	1.0	1.0		µg/L	1	1/4/2023 6:44:30 PM	R93710
Acetone	ND	10	10		µg/L	1	1/4/2023 6:44:30 PM	R93710
Bromomethane	ND	3.0	3.0		µg/L	1	1/4/2023 6:44:30 PM	R93710
2-Butanone	ND	10	10		µg/L	1	1/4/2023 6:44:30 PM	R93710
Carbon disulfide	ND	10	10		µg/L	1	1/4/2023 6:44:30 PM	R93710
Chlorobenzene	ND	1.0	1.0		µg/L	1	1/4/2023 6:44:30 PM	R93710
Chloroform	ND	1.0	1.0		µg/L	1	1/4/2023 6:44:30 PM	R93710
Chloromethane	ND	3.0	3.0		µg/L	1	1/4/2023 6:44:30 PM	R93710
cis-1,2-DCE	ND	1.0	1.0		µg/L	1	1/4/2023 6:44:30 PM	R93710
1,1-Dichloroethane	ND	1.0	1.0		µg/L	1	1/4/2023 6:44:30 PM	R93710
1,1-Dichloroethene	ND	1.0	1.0		µg/L	1	1/4/2023 6:44:30 PM	R93710
Isopropylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 6:44:30 PM	R93710
4-Isopropyltoluene	ND	1.0	1.0		µg/L	1	1/4/2023 6:44:30 PM	R93710
Methylene Chloride	ND	3.0	3.0		µg/L	1	1/4/2023 6:44:30 PM	R93710
n-Butylbenzene	ND	3.0	3.0		µg/L	1	1/4/2023 6:44:30 PM	R93710
n-Propylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 6:44:30 PM	R93710
sec-Butylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 6:44:30 PM	R93710
Styrene	ND	1.0	1.0		µg/L	1	1/4/2023 6:44:30 PM	R93710
Tetrachloroethene (PCE)	ND	1.0	1.0		µg/L	1	1/4/2023 6:44:30 PM	R93710
1,1,1-Trichloroethane	ND	1.0	1.0		µg/L	1	1/4/2023 6:44:30 PM	R93710
Trichloroethene (TCE)	ND	1.0	1.0		µg/L	1	1/4/2023 6:44:30 PM	R93710
Vinyl chloride	ND	1.0	1.0		µg/L	1	1/4/2023 6:44:30 PM	R93710
Xylenes, Total	ND	1.5	1.5		µg/L	1	1/4/2023 6:44:30 PM	R93710
Surr: 1,2-Dichloroethane-d4	90.6	0	70-130		%Rec	1	1/4/2023 6:44:30 PM	R93710
Surr: 4-Bromofluorobenzene	118	0	70-130		%Rec	1	1/4/2023 6:44:30 PM	R93710
Surr: Dibromofluoromethane	84.3	0	70-130		%Rec	1	1/4/2023 6:44:30 PM	R93710
Surr: Toluene-d8	104	0	70-130		%Rec	1	1/4/2023 6:44:30 PM	R93710

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-52
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022 10:30:00 AM
Lab ID: 2212E09-003B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	12/30/2022 4:53:56 AM	72358

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-52
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022 10:30:00 AM
Lab ID: 2212E09-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.045	0.016	0.064	JB	mg/L	1	1/5/2023 3:23:09 PM	72386
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	1/5/2023 3:23:09 PM	72386
Surr: DNOP	103	0	15.9-177		%Rec	1	1/5/2023 3:23:09 PM	72386
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	1/9/2023 10:07:20 AM	72347
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	1/9/2023 10:07:20 AM	72347
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	1/9/2023 10:07:20 AM	72347
Di-n-octyl phthalate	ND	12	20		µg/L	1	1/9/2023 10:07:20 AM	72347
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	1/9/2023 10:07:20 AM	72347
Diethyl phthalate	ND	6.0	10		µg/L	1	1/9/2023 10:07:20 AM	72347
Dimethyl phthalate	ND	6.0	10		µg/L	1	1/9/2023 10:07:20 AM	72347
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	1/9/2023 10:07:20 AM	72347
2,4-Dinitrophenol	ND	16	20		µg/L	1	1/9/2023 10:07:20 AM	72347
2-Methylphenol	ND	5.0	10		µg/L	1	1/9/2023 10:07:20 AM	72347
3+4-Methylphenol	ND	5.1	10		µg/L	1	1/9/2023 10:07:20 AM	72347
Phenol	ND	18	20		µg/L	1	1/9/2023 10:07:20 AM	72347
Pyridine	ND	14	40		µg/L	1	1/9/2023 10:07:20 AM	72347
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	1/9/2023 10:07:20 AM	72347
Surr: 2-Fluorophenol	49.3	0	15-84.5		%Rec	1	1/9/2023 10:07:20 AM	72347
Surr: Phenol-d5	36.6	0	15-67		%Rec	1	1/9/2023 10:07:20 AM	72347
Surr: 2,4,6-Tribromophenol	65.5	0	15-108		%Rec	1	1/9/2023 10:07:20 AM	72347
Surr: Nitrobenzene-d5	69.3	0	16.8-112		%Rec	1	1/9/2023 10:07:20 AM	72347
Surr: 2-Fluorobiphenyl	59.9	0	15-101		%Rec	1	1/9/2023 10:07:20 AM	72347
Surr: 4-Terphenyl-d14	92.4	0	34.4-134		%Rec	1	1/9/2023 10:07:20 AM	72347
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	1/4/2023 7:48:00 PM	72347
Naphthalene	ND	0.20	0.30		µg/L	1	1/4/2023 7:48:00 PM	72347
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	1/4/2023 7:48:00 PM	72347
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	1/4/2023 7:48:00 PM	72347
Acenaphthene	ND	0.14	0.30		µg/L	1	1/4/2023 7:48:00 PM	72347
Fluorene	ND	0.095	0.30		µg/L	1	1/4/2023 7:48:00 PM	72347
Phenanthrene	ND	0.16	0.30		µg/L	1	1/4/2023 7:48:00 PM	72347
Anthracene	ND	0.14	0.30		µg/L	1	1/4/2023 7:48:00 PM	72347
Fluoranthene	ND	0.14	0.30		µg/L	1	1/4/2023 7:48:00 PM	72347
Pyrene	ND	0.32	1.0		µg/L	1	1/4/2023 7:48:00 PM	72347
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	1/4/2023 7:48:00 PM	72347
Chrysene	ND	0.25	0.30		µg/L	1	1/4/2023 7:48:00 PM	72347
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	1/4/2023 7:48:00 PM	72347
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	1/4/2023 7:48:00 PM	72347

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-52
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022 10:30:00 AM
Lab ID: 2212E09-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	68.1	0	15-108		%Rec	1	1/4/2023 7:48:00 PM	72347
Surr: 2-Fluorobiphenyl	62.0	0	15-107		%Rec	1	1/4/2023 7:48:00 PM	72347
Surr: 4-Terphenyl-d14	113	0	15-166		%Rec	1	1/4/2023 7:48:00 PM	72347

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-52
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022 10:30:00 AM
Lab ID: 2212E09-003D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.027	0.0016	0.0030		mg/L	1	1/9/2023 3:52:08 PM	72409
Beryllium	ND	0.00060	0.0020		mg/L	1	1/9/2023 9:37:39 AM	72409
Cadmium	ND	0.0018	0.0020		mg/L	1	1/9/2023 9:37:39 AM	72409
Chromium	ND	0.0020	0.0060		mg/L	1	1/9/2023 9:37:39 AM	72409
Cobalt	ND	0.0035	0.0060		mg/L	1	1/9/2023 3:52:08 PM	72409
Nickel	ND	0.0053	0.010		mg/L	1	1/9/2023 9:37:39 AM	72409
Silver	ND	0.0018	0.0050		mg/L	1	1/9/2023 9:37:39 AM	72409
Vanadium	ND	0.0035	0.050		mg/L	1	1/9/2023 9:37:39 AM	72409
Zinc	0.0092	0.0039	0.010	J	mg/L	1	1/9/2023 9:37:39 AM	72409
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	1/5/2023 3:36:50 PM	72409
Arsenic	0.00045	0.00022	0.0010	J	mg/L	1	1/5/2023 3:36:50 PM	72409
Lead	ND	0.00019	0.00050		mg/L	1	1/5/2023 3:36:50 PM	72409
Selenium	ND	0.00089	0.0010		mg/L	1	1/5/2023 3:36:50 PM	72409
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.000097	0.000091	0.00020	J	mg/L	1	1/6/2023 8:49:15 AM	72446

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-52
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022 10:30:00 AM
Lab ID: 2212E09-003E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.028	0.0011	0.0020		mg/L	1	1/5/2023 7:46:49 PM	B93766
Beryllium	ND	0.00059	0.0020		mg/L	1	1/5/2023 7:46:49 PM	B93766
Cadmium	ND	0.00098	0.0020		mg/L	1	1/5/2023 7:46:49 PM	B93766
Chromium	ND	0.0020	0.0060		mg/L	1	1/5/2023 7:46:49 PM	B93766
Cobalt	ND	0.0024	0.0060		mg/L	1	1/5/2023 7:46:49 PM	B93766
Nickel	ND	0.0033	0.010		mg/L	1	1/5/2023 7:46:49 PM	B93766
Silver	ND	0.0013	0.0050		mg/L	1	1/5/2023 7:46:49 PM	B93766
Vanadium	0.0027	0.0017	0.050	J	mg/L	1	1/5/2023 7:46:49 PM	B93766
Zinc	0.014	0.0032	0.010		mg/L	1	1/9/2023 11:41:08 AM	A93838
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00045	0.0010		mg/L	1	1/10/2023 1:20:58 PM	A93855
Arsenic	0.00096	0.00057	0.0010	J	mg/L	1	1/10/2023 1:20:58 PM	A93855
Lead	ND	0.000099	0.00050		mg/L	1	1/10/2023 1:20:58 PM	A93855
Selenium	0.0012	0.00056	0.0010		mg/L	1	1/10/2023 1:20:58 PM	A93855
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00012	0.000091	0.00020	J	mg/L	1	1/6/2023 8:55:40 AM	72446

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-29
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022 11:15:00 AM
Lab ID: 2212E09-004A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	2.7	0.0090	0.050		mg/L	1	1/3/2023 9:57:33 PM	R93693
Surr: BFB	87.5	0	70-130		%Rec	1	1/3/2023 9:57:33 PM	R93693
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	2.0	2.0		µg/L	2	1/4/2023 7:41:35 PM	R93710
Toluene	ND	2.0	2.0		µg/L	2	1/4/2023 7:41:35 PM	R93710
Ethylbenzene	ND	2.0	2.0		µg/L	2	1/4/2023 7:41:35 PM	R93710
Methyl tert-butyl ether (MTBE)	3200	20	20		µg/L	20	1/4/2023 7:13:04 PM	R93710
1,2,4-Trimethylbenzene	ND	2.0	2.0		µg/L	2	1/4/2023 7:41:35 PM	R93710
1,3,5-Trimethylbenzene	ND	2.0	2.0		µg/L	2	1/4/2023 7:41:35 PM	R93710
1,2-Dichloroethane (EDC)	ND	2.0	2.0		µg/L	2	1/4/2023 7:41:35 PM	R93710
Acetone	ND	20	20		µg/L	2	1/4/2023 7:41:35 PM	R93710
Bromomethane	ND	6.0	6.0		µg/L	2	1/4/2023 7:41:35 PM	R93710
2-Butanone	ND	20	20		µg/L	2	1/4/2023 7:41:35 PM	R93710
Carbon disulfide	ND	20	20		µg/L	2	1/4/2023 7:41:35 PM	R93710
Chlorobenzene	ND	2.0	2.0		µg/L	2	1/4/2023 7:41:35 PM	R93710
Chloroform	ND	2.0	2.0		µg/L	2	1/4/2023 7:41:35 PM	R93710
Chloromethane	ND	6.0	6.0		µg/L	2	1/4/2023 7:41:35 PM	R93710
cis-1,2-DCE	ND	2.0	2.0		µg/L	2	1/4/2023 7:41:35 PM	R93710
1,1-Dichloroethane	ND	2.0	2.0		µg/L	2	1/4/2023 7:41:35 PM	R93710
1,1-Dichloroethene	ND	2.0	2.0		µg/L	2	1/4/2023 7:41:35 PM	R93710
Isopropylbenzene	ND	2.0	2.0		µg/L	2	1/4/2023 7:41:35 PM	R93710
4-Isopropyltoluene	ND	2.0	2.0		µg/L	2	1/4/2023 7:41:35 PM	R93710
Methylene Chloride	ND	6.0	6.0		µg/L	2	1/4/2023 7:41:35 PM	R93710
n-Butylbenzene	ND	6.0	6.0		µg/L	2	1/4/2023 7:41:35 PM	R93710
n-Propylbenzene	ND	2.0	2.0		µg/L	2	1/4/2023 7:41:35 PM	R93710
sec-Butylbenzene	ND	2.0	2.0		µg/L	2	1/4/2023 7:41:35 PM	R93710
Styrene	ND	2.0	2.0		µg/L	2	1/4/2023 7:41:35 PM	R93710
Tetrachloroethene (PCE)	ND	2.0	2.0		µg/L	2	1/4/2023 7:41:35 PM	R93710
1,1,1-Trichloroethane	ND	2.0	2.0		µg/L	2	1/4/2023 7:41:35 PM	R93710
Trichloroethene (TCE)	ND	2.0	2.0		µg/L	2	1/4/2023 7:41:35 PM	R93710
Vinyl chloride	ND	2.0	2.0		µg/L	2	1/4/2023 7:41:35 PM	R93710
Xylenes, Total	ND	3.0	3.0		µg/L	2	1/4/2023 7:41:35 PM	R93710
Surr: 1,2-Dichloroethane-d4	85.9	0	70-130		%Rec	2	1/4/2023 7:41:35 PM	R93710
Surr: 4-Bromofluorobenzene	112	0	70-130		%Rec	2	1/4/2023 7:41:35 PM	R93710
Surr: Dibromofluoromethane	84.9	0	70-130		%Rec	2	1/4/2023 7:41:35 PM	R93710
Surr: Toluene-d8	101	0	70-130		%Rec	2	1/4/2023 7:41:35 PM	R93710

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-29
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022 11:15:00 AM
Lab ID: 2212E09-004B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	12/30/2022 5:08:48 AM	72358

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-29
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022 11:15:00 AM
Lab ID: 2212E09-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.43	0.016	0.064	B	mg/L	1	1/5/2023 3:47:07 PM	72386
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	1/5/2023 3:47:07 PM	72386
Surr: DNOP	101	0	15.9-177		%Rec	1	1/5/2023 3:47:07 PM	72386
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	1/9/2023 10:48:22 AM	72347
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	1/9/2023 10:48:22 AM	72347
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	1/9/2023 10:48:22 AM	72347
Di-n-octyl phthalate	ND	12	20		µg/L	1	1/9/2023 10:48:22 AM	72347
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	1/9/2023 10:48:22 AM	72347
Diethyl phthalate	ND	6.0	10		µg/L	1	1/9/2023 10:48:22 AM	72347
Dimethyl phthalate	ND	6.0	10		µg/L	1	1/9/2023 10:48:22 AM	72347
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	1/9/2023 10:48:22 AM	72347
2,4-Dinitrophenol	ND	16	20		µg/L	1	1/9/2023 10:48:22 AM	72347
2-Methylphenol	ND	5.0	10		µg/L	1	1/9/2023 10:48:22 AM	72347
3+4-Methylphenol	ND	5.1	10		µg/L	1	1/9/2023 10:48:22 AM	72347
Phenol	ND	18	20		µg/L	1	1/9/2023 10:48:22 AM	72347
Pyridine	ND	14	40		µg/L	1	1/9/2023 10:48:22 AM	72347
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	1/9/2023 10:48:22 AM	72347
Surr: 2-Fluorophenol	46.3	0	15-84.5		%Rec	1	1/9/2023 10:48:22 AM	72347
Surr: Phenol-d5	35.5	0	15-67		%Rec	1	1/9/2023 10:48:22 AM	72347
Surr: 2,4,6-Tribromophenol	75.2	0	15-108		%Rec	1	1/9/2023 10:48:22 AM	72347
Surr: Nitrobenzene-d5	65.8	0	16.8-112		%Rec	1	1/9/2023 10:48:22 AM	72347
Surr: 2-Fluorobiphenyl	57.0	0	15-101		%Rec	1	1/9/2023 10:48:22 AM	72347
Surr: 4-Terphenyl-d14	86.4	0	34.4-134		%Rec	1	1/9/2023 10:48:22 AM	72347
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	0.86	0.11	1.0	J	µg/L	1	1/4/2023 8:31:00 PM	R93725
Naphthalene	ND	0.20	0.30		µg/L	1	1/4/2023 8:31:00 PM	R93725
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	1/4/2023 8:31:00 PM	R93725
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	1/4/2023 8:31:00 PM	R93725
Acenaphthene	ND	0.14	0.30		µg/L	1	1/4/2023 8:31:00 PM	R93725
Fluorene	ND	0.095	0.30		µg/L	1	1/4/2023 8:31:00 PM	R93725
Phenanthrene	ND	0.16	0.30		µg/L	1	1/4/2023 8:31:00 PM	R93725
Anthracene	ND	0.14	0.30		µg/L	1	1/4/2023 8:31:00 PM	R93725
Fluoranthene	ND	0.14	0.30		µg/L	1	1/4/2023 8:31:00 PM	R93725
Pyrene	ND	0.32	1.0		µg/L	1	1/4/2023 8:31:00 PM	R93725
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	1/4/2023 8:31:00 PM	R93725
Chrysene	ND	0.25	0.30		µg/L	1	1/4/2023 8:31:00 PM	R93725
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	1/4/2023 8:31:00 PM	R93725
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	1/4/2023 8:31:00 PM	R93725

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-29
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022 11:15:00 AM
Lab ID: 2212E09-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	62.9	0	15-108		%Rec	1	1/4/2023 8:31:00 PM	R93725
Surr: 2-Fluorobiphenyl	55.9	0	15-107		%Rec	1	1/4/2023 8:31:00 PM	R93725
Surr: 4-Terphenyl-d14	94.8	0	15-166		%Rec	1	1/4/2023 8:31:00 PM	R93725

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-29
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022 11:15:00 AM
Lab ID: 2212E09-004D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.086	0.0016	0.0030		mg/L	1	1/9/2023 3:55:07 PM	72409
Beryllium	ND	0.00060	0.0020		mg/L	1	1/9/2023 9:40:57 AM	72409
Cadmium	ND	0.0018	0.0020		mg/L	1	1/9/2023 9:40:57 AM	72409
Chromium	ND	0.0020	0.0060		mg/L	1	1/9/2023 9:40:57 AM	72409
Cobalt	ND	0.0035	0.0060		mg/L	1	1/9/2023 3:55:07 PM	72409
Nickel	0.029	0.0053	0.010		mg/L	1	1/9/2023 9:40:57 AM	72409
Silver	ND	0.0018	0.0050		mg/L	1	1/9/2023 9:40:57 AM	72409
Vanadium	ND	0.0035	0.050		mg/L	1	1/9/2023 9:40:57 AM	72409
Zinc	ND	0.0039	0.010		mg/L	1	1/9/2023 3:55:07 PM	72409
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	1/5/2023 3:39:17 PM	72409
Arsenic	0.0014	0.00022	0.0010		mg/L	1	1/5/2023 3:39:17 PM	72409
Lead	ND	0.00019	0.00050		mg/L	1	1/5/2023 3:39:17 PM	72409
Selenium	0.0012	0.00089	0.0010		mg/L	1	1/5/2023 3:39:17 PM	72409
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.000097	0.000091	0.00020	J	mg/L	1	1/6/2023 8:57:49 AM	72446

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-29
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022 11:15:00 AM
Lab ID: 2212E09-004E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.091	0.0011	0.0020		mg/L	1	1/5/2023 7:52:44 PM	B93766
Beryllium	ND	0.00059	0.0020		mg/L	1	1/5/2023 7:52:44 PM	B93766
Cadmium	ND	0.00098	0.0020		mg/L	1	1/5/2023 7:52:44 PM	B93766
Chromium	ND	0.0020	0.0060		mg/L	1	1/5/2023 7:52:44 PM	B93766
Cobalt	ND	0.0024	0.0060		mg/L	1	1/5/2023 7:52:44 PM	B93766
Nickel	0.028	0.0033	0.010		mg/L	1	1/5/2023 7:52:44 PM	B93766
Silver	ND	0.0013	0.0050		mg/L	1	1/5/2023 7:52:44 PM	B93766
Vanadium	0.0025	0.0017	0.050	J	mg/L	1	1/5/2023 7:52:44 PM	B93766
Zinc	0.024	0.0032	0.010		mg/L	1	1/9/2023 11:50:36 AM	A93838
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00045	0.0010		mg/L	1	1/10/2023 1:26:18 PM	A93855
Arsenic	0.0016	0.00057	0.0010		mg/L	1	1/10/2023 1:26:18 PM	A93855
Lead	ND	0.000099	0.00050		mg/L	1	1/10/2023 1:26:18 PM	A93855
Selenium	0.0069	0.00056	0.0010		mg/L	1	1/10/2023 1:26:18 PM	A93855
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	1/6/2023 8:59:58 AM	72446

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-54
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022 11:45:00 AM
Lab ID: 2212E09-005A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	1.4	0.0090	0.050		mg/L	1	1/3/2023 10:21:01 PM	R93693
Surr: BFB	96.0	0	70-130		%Rec	1	1/3/2023 10:21:01 PM	R93693
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	5.0	5.0		µg/L	5	1/4/2023 8:38:37 PM	R93710
Toluene	ND	5.0	5.0		µg/L	5	1/4/2023 8:38:37 PM	R93710
Ethylbenzene	ND	5.0	5.0		µg/L	5	1/4/2023 8:38:37 PM	R93710
Methyl tert-butyl ether (MTBE)	1300	50	50		µg/L	50	1/4/2023 8:10:06 PM	R93710
1,2,4-Trimethylbenzene	ND	5.0	5.0		µg/L	5	1/4/2023 8:38:37 PM	R93710
1,3,5-Trimethylbenzene	ND	5.0	5.0		µg/L	5	1/4/2023 8:38:37 PM	R93710
1,2-Dichloroethane (EDC)	ND	5.0	5.0		µg/L	5	1/4/2023 8:38:37 PM	R93710
Acetone	ND	50	50		µg/L	5	1/4/2023 8:38:37 PM	R93710
Bromomethane	ND	15	15		µg/L	5	1/4/2023 8:38:37 PM	R93710
2-Butanone	ND	50	50		µg/L	5	1/4/2023 8:38:37 PM	R93710
Carbon disulfide	ND	50	50		µg/L	5	1/4/2023 8:38:37 PM	R93710
Chlorobenzene	ND	5.0	5.0		µg/L	5	1/4/2023 8:38:37 PM	R93710
Chloroform	ND	5.0	5.0		µg/L	5	1/4/2023 8:38:37 PM	R93710
Chloromethane	ND	15	15		µg/L	5	1/4/2023 8:38:37 PM	R93710
cis-1,2-DCE	ND	5.0	5.0		µg/L	5	1/4/2023 8:38:37 PM	R93710
1,1-Dichloroethane	ND	5.0	5.0		µg/L	5	1/4/2023 8:38:37 PM	R93710
1,1-Dichloroethene	ND	5.0	5.0		µg/L	5	1/4/2023 8:38:37 PM	R93710
Isopropylbenzene	ND	5.0	5.0		µg/L	5	1/4/2023 8:38:37 PM	R93710
4-Isopropyltoluene	ND	5.0	5.0		µg/L	5	1/4/2023 8:38:37 PM	R93710
Methylene Chloride	ND	15	15		µg/L	5	1/4/2023 8:38:37 PM	R93710
n-Butylbenzene	ND	15	15		µg/L	5	1/4/2023 8:38:37 PM	R93710
n-Propylbenzene	ND	5.0	5.0		µg/L	5	1/4/2023 8:38:37 PM	R93710
sec-Butylbenzene	ND	5.0	5.0		µg/L	5	1/4/2023 8:38:37 PM	R93710
Styrene	ND	5.0	5.0		µg/L	5	1/4/2023 8:38:37 PM	R93710
Tetrachloroethene (PCE)	ND	5.0	5.0		µg/L	5	1/4/2023 8:38:37 PM	R93710
1,1,1-Trichloroethane	ND	5.0	5.0		µg/L	5	1/4/2023 8:38:37 PM	R93710
Trichloroethene (TCE)	ND	5.0	5.0		µg/L	5	1/4/2023 8:38:37 PM	R93710
Vinyl chloride	ND	5.0	5.0		µg/L	5	1/4/2023 8:38:37 PM	R93710
Xylenes, Total	ND	7.5	7.5		µg/L	5	1/4/2023 8:38:37 PM	R93710
Surr: 1,2-Dichloroethane-d4	102	0	70-130		%Rec	5	1/4/2023 8:38:37 PM	R93710
Surr: 4-Bromofluorobenzene	111	0	70-130		%Rec	5	1/4/2023 8:38:37 PM	R93710
Surr: Dibromofluoromethane	88.6	0	70-130		%Rec	5	1/4/2023 8:38:37 PM	R93710
Surr: Toluene-d8	105	0	70-130		%Rec	5	1/4/2023 8:38:37 PM	R93710

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-54
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022 11:45:00 AM
Lab ID: 2212E09-005B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	12/30/2022 5:23:44 AM	72358

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-54
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022 11:45:00 AM
Lab ID: 2212E09-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	2.2	0.016	0.064	B	mg/L	1	1/5/2023 4:34:58 PM	72386
Motor Oil Range Organics (MRO)	0.16	0.052	0.080		mg/L	1	1/5/2023 4:34:58 PM	72386
Surr: DNOP	106	0	15.9-177		%Rec	1	1/5/2023 4:34:58 PM	72386
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	1/9/2023 11:29:34 AM	72347
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	1/9/2023 11:29:34 AM	72347
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	1/9/2023 11:29:34 AM	72347
Di-n-octyl phthalate	ND	12	20		µg/L	1	1/9/2023 11:29:34 AM	72347
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	1/9/2023 11:29:34 AM	72347
Diethyl phthalate	ND	6.0	10		µg/L	1	1/9/2023 11:29:34 AM	72347
Dimethyl phthalate	ND	6.0	10		µg/L	1	1/9/2023 11:29:34 AM	72347
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	1/9/2023 11:29:34 AM	72347
2,4-Dinitrophenol	ND	16	20		µg/L	1	1/9/2023 11:29:34 AM	72347
2-Methylphenol	ND	5.0	10		µg/L	1	1/9/2023 11:29:34 AM	72347
3+4-Methylphenol	ND	5.1	10		µg/L	1	1/9/2023 11:29:34 AM	72347
Phenol	ND	18	20		µg/L	1	1/9/2023 11:29:34 AM	72347
Pyridine	ND	14	40		µg/L	1	1/9/2023 11:29:34 AM	72347
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	1/9/2023 11:29:34 AM	72347
Surr: 2-Fluorophenol	45.6	0	15-84.5		%Rec	1	1/9/2023 11:29:34 AM	72347
Surr: Phenol-d5	34.8	0	15-67		%Rec	1	1/9/2023 11:29:34 AM	72347
Surr: 2,4,6-Tribromophenol	79.2	0	15-108		%Rec	1	1/9/2023 11:29:34 AM	72347
Surr: Nitrobenzene-d5	63.0	0	16.8-112		%Rec	1	1/9/2023 11:29:34 AM	72347
Surr: 2-Fluorobiphenyl	52.9	0	15-101		%Rec	1	1/9/2023 11:29:34 AM	72347
Surr: 4-Terphenyl-d14	83.4	0	34.4-134		%Rec	1	1/9/2023 11:29:34 AM	72347
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	0.84	0.11	1.0	J	µg/L	1	1/4/2023 9:14:00 PM	72347
Naphthalene	ND	0.20	0.30		µg/L	1	1/4/2023 9:14:00 PM	72347
1-Methylnaphthalene	0.20	0.15	0.30	J	µg/L	1	1/4/2023 9:14:00 PM	72347
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	1/4/2023 9:14:00 PM	72347
Acenaphthene	ND	0.14	0.30		µg/L	1	1/4/2023 9:14:00 PM	72347
Fluorene	ND	0.095	0.30		µg/L	1	1/4/2023 9:14:00 PM	72347
Phenanthrene	ND	0.16	0.30		µg/L	1	1/4/2023 9:14:00 PM	72347
Anthracene	ND	0.14	0.30		µg/L	1	1/4/2023 9:14:00 PM	72347
Fluoranthene	ND	0.14	0.30		µg/L	1	1/4/2023 9:14:00 PM	72347
Pyrene	ND	0.32	1.0		µg/L	1	1/4/2023 9:14:00 PM	72347
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	1/4/2023 9:14:00 PM	72347
Chrysene	ND	0.25	0.30		µg/L	1	1/4/2023 9:14:00 PM	72347
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	1/4/2023 9:14:00 PM	72347
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	1/4/2023 9:14:00 PM	72347

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-54
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022 11:45:00 AM
Lab ID: 2212E09-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	62.5	0	15-108		%Rec	1	1/4/2023 9:14:00 PM	72347
Surr: 2-Fluorobiphenyl	49.6	0	15-107		%Rec	1	1/4/2023 9:14:00 PM	72347
Surr: 4-Terphenyl-d14	79.7	0	15-166		%Rec	1	1/4/2023 9:14:00 PM	72347

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-54
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022 11:45:00 AM
Lab ID: 2212E09-005D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.55	0.0016	0.0030		mg/L	1	1/9/2023 4:05:28 PM	72409
Beryllium	0.0012	0.00060	0.0020	J	mg/L	1	1/9/2023 9:44:11 AM	72409
Cadmium	0.0027	0.0018	0.0020		mg/L	1	1/9/2023 9:44:11 AM	72409
Chromium	0.0087	0.0020	0.0060		mg/L	1	1/9/2023 9:44:11 AM	72409
Cobalt	0.085	0.0035	0.0060		mg/L	1	1/9/2023 4:05:28 PM	72409
Nickel	0.23	0.0053	0.010	*	mg/L	1	1/9/2023 9:44:11 AM	72409
Silver	ND	0.0018	0.0050		mg/L	1	1/9/2023 9:44:11 AM	72409
Vanadium	0.027	0.0035	0.050	J	mg/L	1	1/9/2023 9:44:11 AM	72409
Zinc	0.023	0.0039	0.010		mg/L	1	1/9/2023 4:05:28 PM	72409
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	1/5/2023 3:41:43 PM	72409
Arsenic	0.0054	0.00022	0.0010		mg/L	1	1/5/2023 3:41:43 PM	72409
Lead	0.039	0.00097	0.0025	*	mg/L	5	1/5/2023 4:26:40 PM	72409
Selenium	0.0028	0.00089	0.0010		mg/L	1	1/5/2023 3:41:43 PM	72409
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00023	0.000091	0.00020		mg/L	1	1/6/2023 9:02:05 AM	72446

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-54
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022 11:45:00 AM
Lab ID: 2212E09-005E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.17	0.0011	0.0020		mg/L	1	1/5/2023 7:58:28 PM	B93766
Beryllium	ND	0.00059	0.0020		mg/L	1	1/5/2023 7:58:28 PM	B93766
Cadmium	ND	0.00098	0.0020		mg/L	1	1/5/2023 7:58:28 PM	B93766
Chromium	ND	0.0020	0.0060		mg/L	1	1/5/2023 7:58:28 PM	B93766
Cobalt	0.073	0.0024	0.0060		mg/L	1	1/5/2023 7:58:28 PM	B93766
Nickel	0.21	0.0033	0.010	*	mg/L	1	1/5/2023 7:58:28 PM	B93766
Silver	ND	0.0013	0.0050		mg/L	1	1/5/2023 7:58:28 PM	B93766
Vanadium	0.0051	0.0017	0.050	J	mg/L	1	1/5/2023 7:58:28 PM	B93766
Zinc	0.0058	0.0032	0.010	J	mg/L	1	1/5/2023 7:58:28 PM	B93766
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00045	0.0010		mg/L	1	1/10/2023 1:31:38 PM	A93855
Arsenic	0.0040	0.00057	0.0010		mg/L	1	1/10/2023 1:31:38 PM	A93855
Lead	0.0050	0.000099	0.00050		mg/L	1	1/10/2023 1:31:38 PM	A93855
Selenium	0.0092	0.00056	0.0010		mg/L	1	1/10/2023 1:31:38 PM	A93855
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.000099	0.000091	0.00020	J	mg/L	1	1/6/2023 9:04:14 AM	72446

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-66
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022 12:05:00 PM
Lab ID: 2212E09-006A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	240	0.45	2.5		mg/L	50	1/3/2023 10:44:30 PM	R93693
Surr: BFB	95.1	0	70-130		%Rec	50	1/3/2023 10:44:30 PM	R93693
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	35000	500	500		µg/L	500	1/4/2023 9:07:08 PM	R93710
Toluene	45000	500	500		µg/L	500	1/4/2023 9:07:08 PM	R93710
Ethylbenzene	1900	50	50		µg/L	50	1/4/2023 9:35:35 PM	R93710
Methyl tert-butyl ether (MTBE)	850	50	50		µg/L	50	1/4/2023 9:35:35 PM	R93710
1,2,4-Trimethylbenzene	1900	50	50		µg/L	50	1/4/2023 9:35:35 PM	R93710
1,3,5-Trimethylbenzene	600	50	50		µg/L	50	1/4/2023 9:35:35 PM	R93710
1,2-Dichloroethane (EDC)	ND	50	50		µg/L	50	1/4/2023 9:35:35 PM	R93710
Acetone	ND	500	500		µg/L	50	1/4/2023 9:35:35 PM	R93710
Bromomethane	ND	150	150		µg/L	50	1/4/2023 9:35:35 PM	R93710
2-Butanone	ND	500	500		µg/L	50	1/4/2023 9:35:35 PM	R93710
Carbon disulfide	ND	500	500		µg/L	50	1/4/2023 9:35:35 PM	R93710
Chlorobenzene	ND	50	50		µg/L	50	1/4/2023 9:35:35 PM	R93710
Chloroform	ND	50	50		µg/L	50	1/4/2023 9:35:35 PM	R93710
Chloromethane	ND	150	150		µg/L	50	1/4/2023 9:35:35 PM	R93710
cis-1,2-DCE	ND	50	50		µg/L	50	1/4/2023 9:35:35 PM	R93710
1,1-Dichloroethane	ND	50	50		µg/L	50	1/4/2023 9:35:35 PM	R93710
1,1-Dichloroethene	ND	50	50		µg/L	50	1/4/2023 9:35:35 PM	R93710
Isopropylbenzene	ND	50	50		µg/L	50	1/4/2023 9:35:35 PM	R93710
4-Isopropyltoluene	ND	50	50		µg/L	50	1/4/2023 9:35:35 PM	R93710
Methylene Chloride	ND	150	150		µg/L	50	1/4/2023 9:35:35 PM	R93710
n-Butylbenzene	ND	150	150		µg/L	50	1/4/2023 9:35:35 PM	R93710
n-Propylbenzene	74	50	50		µg/L	50	1/4/2023 9:35:35 PM	R93710
sec-Butylbenzene	ND	50	50		µg/L	50	1/4/2023 9:35:35 PM	R93710
Styrene	ND	50	50		µg/L	50	1/4/2023 9:35:35 PM	R93710
Tetrachloroethene (PCE)	ND	50	50		µg/L	50	1/4/2023 9:35:35 PM	R93710
1,1,1-Trichloroethane	ND	50	50		µg/L	50	1/4/2023 9:35:35 PM	R93710
Trichloroethene (TCE)	ND	50	50		µg/L	50	1/4/2023 9:35:35 PM	R93710
Vinyl chloride	ND	50	50		µg/L	50	1/4/2023 9:35:35 PM	R93710
Xylenes, Total	20000	750	750		µg/L	500	1/4/2023 9:07:08 PM	R93710
Surr: 1,2-Dichloroethane-d4	94.3	0	70-130		%Rec	50	1/4/2023 9:35:35 PM	R93710
Surr: 4-Bromofluorobenzene	91.8	0	70-130		%Rec	50	1/4/2023 9:35:35 PM	R93710
Surr: Dibromofluoromethane	74.5	0	70-130		%Rec	50	1/4/2023 9:35:35 PM	R93710
Surr: Toluene-d8	109	0	70-130		%Rec	50	1/4/2023 9:35:35 PM	R93710

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-66
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022 12:05:00 PM
Lab ID: 2212E09-006B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	12/30/2022 5:38:38 AM	72358

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-66
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022 12:05:00 PM
Lab ID: 2212E09-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	6.9	0.032	0.13	B	mg/L	2	1/6/2023 3:49:43 PM	72386
Motor Oil Range Organics (MRO)	ND	0.10	0.16	D	mg/L	2	1/6/2023 3:49:43 PM	72386
Surr: DNOP	110	0	15.9-177		%Rec	2	1/6/2023 3:49:43 PM	72386
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	1/9/2023 12:10:48 PM	72347
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	1/9/2023 12:10:48 PM	72347
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	1/9/2023 12:10:48 PM	72347
Di-n-octyl phthalate	ND	12	20		µg/L	1	1/9/2023 12:10:48 PM	72347
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	1/9/2023 12:10:48 PM	72347
Diethyl phthalate	ND	6.0	10		µg/L	1	1/9/2023 12:10:48 PM	72347
Dimethyl phthalate	ND	6.0	10		µg/L	1	1/9/2023 12:10:48 PM	72347
2,4-Dimethylphenol	18	5.8	10		µg/L	1	1/9/2023 12:10:48 PM	72347
2,4-Dinitrophenol	ND	16	20		µg/L	1	1/9/2023 12:10:48 PM	72347
1-Methylnaphthalene	26	4.3	5.0		µg/L	1	1/9/2023 12:10:48 PM	72347
2-Methylnaphthalene	46	4.2	5.0		µg/L	1	1/9/2023 12:10:48 PM	72347
2-Methylphenol	32	5.0	10		µg/L	1	1/9/2023 12:10:48 PM	72347
3+4-Methylphenol	62	5.1	10		µg/L	1	1/9/2023 12:10:48 PM	72347
Naphthalene	190	3.2	5.0		µg/L	1	1/9/2023 12:10:48 PM	72347
Phenol	46	18	20		µg/L	1	1/9/2023 12:10:48 PM	72347
Pyridine	ND	14	40		µg/L	1	1/9/2023 12:10:48 PM	72347
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	1/9/2023 12:10:48 PM	72347
Surr: 2-Fluorophenol	0	0	15-84.5	S	%Rec	1	1/9/2023 12:10:48 PM	72347
Surr: Phenol-d5	40.1	0	15-67		%Rec	1	1/9/2023 12:10:48 PM	72347
Surr: 2,4,6-Tribromophenol	85.7	0	15-108		%Rec	1	1/9/2023 12:10:48 PM	72347
Surr: Nitrobenzene-d5	71.0	0	16.8-112		%Rec	1	1/9/2023 12:10:48 PM	72347
Surr: 2-Fluorobiphenyl	60.7	0	15-101		%Rec	1	1/9/2023 12:10:48 PM	72347
Surr: 4-Terphenyl-d14	86.6	0	34.4-134		%Rec	1	1/9/2023 12:10:48 PM	72347
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	1.4	0.11	1.0		µg/L	1	1/4/2023 10:52:00 PM	72347
Acenaphthene	0.24	0.14	0.30	J	µg/L	1	1/4/2023 10:52:00 PM	72347
Fluorene	0.72	0.095	0.30		µg/L	1	1/4/2023 10:52:00 PM	72347
Phenanthrene	0.84	0.16	0.30		µg/L	1	1/4/2023 10:52:00 PM	72347
Anthracene	ND	0.14	0.30		µg/L	1	1/4/2023 10:52:00 PM	72347
Fluoranthene	ND	0.14	0.30		µg/L	1	1/4/2023 10:52:00 PM	72347
Pyrene	ND	0.32	1.0		µg/L	1	1/4/2023 10:52:00 PM	72347
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	1/4/2023 10:52:00 PM	72347
Chrysene	ND	0.25	0.30		µg/L	1	1/4/2023 10:52:00 PM	72347
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	1/4/2023 10:52:00 PM	72347
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	1/4/2023 10:52:00 PM	72347

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-66
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022 12:05:00 PM
Lab ID: 2212E09-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	70.5	0	15-108		%Rec	1	1/4/2023 10:52:00 PM	72347
Surr: 2-Fluorobiphenyl	56.6	0	15-107		%Rec	1	1/4/2023 10:52:00 PM	72347
Surr: 4-Terphenyl-d14	84.9	0	15-166		%Rec	1	1/4/2023 10:52:00 PM	72347

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-66
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022 12:05:00 PM
Lab ID: 2212E09-006D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	2.7	0.0079	0.015	*	mg/L	5	1/9/2023 4:11:51 PM	72409
Beryllium	0.00076	0.00060	0.0020	J	mg/L	1	1/9/2023 9:47:01 AM	72409
Cadmium	ND	0.0018	0.0020		mg/L	1	1/9/2023 9:47:01 AM	72409
Chromium	0.0061	0.0020	0.0060		mg/L	1	1/9/2023 9:47:01 AM	72409
Cobalt	0.0040	0.0035	0.0060	J	mg/L	1	1/9/2023 4:08:31 PM	72409
Nickel	0.33	0.0053	0.010	*	mg/L	1	1/9/2023 9:47:01 AM	72409
Silver	ND	0.0018	0.0050		mg/L	1	1/9/2023 9:47:01 AM	72409
Vanadium	0.027	0.0035	0.050	J	mg/L	1	1/9/2023 9:47:01 AM	72409
Zinc	0.012	0.0039	0.010		mg/L	1	1/9/2023 4:08:31 PM	72409
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	1/5/2023 3:44:10 PM	72409
Arsenic	0.0098	0.00022	0.0010		mg/L	1	1/5/2023 3:44:10 PM	72409
Lead	0.021	0.00019	0.00050	*	mg/L	1	1/5/2023 3:44:10 PM	72409
Selenium	0.0018	0.00089	0.0010		mg/L	1	1/5/2023 3:44:10 PM	72409
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00012	0.000091	0.00020	J	mg/L	1	1/6/2023 9:06:22 AM	72446

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-66
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022 12:05:00 PM
Lab ID: 2212E09-006E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	2.3	0.0056	0.010	*	mg/L	5	1/5/2023 8:19:10 PM	B93766
Beryllium	ND	0.00059	0.0020		mg/L	1	1/5/2023 8:15:52 PM	B93766
Cadmium	ND	0.00098	0.0020		mg/L	1	1/5/2023 8:15:52 PM	B93766
Chromium	ND	0.0020	0.0060		mg/L	1	1/5/2023 8:15:52 PM	B93766
Cobalt	ND	0.0024	0.0060		mg/L	1	1/5/2023 8:15:52 PM	B93766
Nickel	0.30	0.0033	0.010	*	mg/L	1	1/5/2023 8:15:52 PM	B93766
Silver	ND	0.0013	0.0050		mg/L	1	1/5/2023 8:15:52 PM	B93766
Vanadium	0.0062	0.0017	0.050	J	mg/L	1	1/5/2023 8:15:52 PM	B93766
Zinc	0.0070	0.0032	0.010	J	mg/L	1	1/5/2023 8:15:52 PM	B93766
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00045	0.0010		mg/L	1	1/10/2023 1:36:57 PM	A93855
Arsenic	0.011	0.00057	0.0010	*	mg/L	1	1/10/2023 1:36:57 PM	A93855
Lead	0.00085	0.000099	0.00050		mg/L	1	1/10/2023 1:36:57 PM	A93855
Selenium	0.0059	0.00056	0.0010		mg/L	1	1/10/2023 1:36:57 PM	A93855
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00010	0.000091	0.00020	J	mg/L	1	1/6/2023 9:08:31 AM	72446

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-55
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022 12:30:00 PM
Lab ID: 2212E09-007A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	27	0.45	2.5		mg/L	50	1/3/2023 11:54:45 PM	R93693
Surr: BFB	94.8	0	70-130		%Rec	50	1/3/2023 11:54:45 PM	R93693
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	4800	50	50	D	µg/L	50	1/5/2023 12:25:52 AM	R93710
Toluene	360	50	50	D	µg/L	50	1/5/2023 12:25:52 AM	R93710
Ethylbenzene	420	50	50	D	µg/L	50	1/5/2023 12:25:52 AM	R93710
Methyl tert-butyl ether (MTBE)	790	50	50	D	µg/L	50	1/5/2023 12:25:52 AM	R93710
1,2,4-Trimethylbenzene	250	50	50	D	µg/L	50	1/5/2023 12:25:52 AM	R93710
1,3,5-Trimethylbenzene	76	50	50	D	µg/L	50	1/5/2023 12:25:52 AM	R93710
1,2-Dichloroethane (EDC)	ND	50	50	D	µg/L	50	1/5/2023 12:25:52 AM	R93710
Acetone	ND	500	500	D	µg/L	50	1/5/2023 12:25:52 AM	R93710
Bromomethane	ND	150	150	D	µg/L	50	1/5/2023 12:25:52 AM	R93710
2-Butanone	ND	500	500	D	µg/L	50	1/5/2023 12:25:52 AM	R93710
Carbon disulfide	ND	500	500	D	µg/L	50	1/5/2023 12:25:52 AM	R93710
Chlorobenzene	ND	50	50	D	µg/L	50	1/5/2023 12:25:52 AM	R93710
Chloroform	ND	50	50	D	µg/L	50	1/5/2023 12:25:52 AM	R93710
Chloromethane	ND	150	150	D	µg/L	50	1/5/2023 12:25:52 AM	R93710
cis-1,2-DCE	ND	50	50	D	µg/L	50	1/5/2023 12:25:52 AM	R93710
1,1-Dichloroethane	ND	50	50	D	µg/L	50	1/5/2023 12:25:52 AM	R93710
1,1-Dichloroethene	ND	50	50	D	µg/L	50	1/5/2023 12:25:52 AM	R93710
Isopropylbenzene	ND	50	50	D	µg/L	50	1/5/2023 12:25:52 AM	R93710
4-Isopropyltoluene	ND	50	50	D	µg/L	50	1/5/2023 12:25:52 AM	R93710
Methylene Chloride	ND	150	150	D	µg/L	50	1/5/2023 12:25:52 AM	R93710
n-Butylbenzene	ND	150	150	D	µg/L	50	1/5/2023 12:25:52 AM	R93710
n-Propylbenzene	59	50	50	D	µg/L	50	1/5/2023 12:25:52 AM	R93710
sec-Butylbenzene	ND	50	50	D	µg/L	50	1/5/2023 12:25:52 AM	R93710
Styrene	ND	50	50	D	µg/L	50	1/5/2023 12:25:52 AM	R93710
Tetrachloroethene (PCE)	ND	50	50	D	µg/L	50	1/5/2023 12:25:52 AM	R93710
1,1,1-Trichloroethane	ND	50	50	D	µg/L	50	1/5/2023 12:25:52 AM	R93710
Trichloroethene (TCE)	ND	50	50	D	µg/L	50	1/5/2023 12:25:52 AM	R93710
Vinyl chloride	ND	50	50	D	µg/L	50	1/5/2023 12:25:52 AM	R93710
Xylenes, Total	1000	75	75	D	µg/L	50	1/5/2023 12:25:52 AM	R93710
Surr: 1,2-Dichloroethane-d4	85.9	0	70-130	D	%Rec	50	1/5/2023 12:25:52 AM	R93710
Surr: 4-Bromofluorobenzene	109	0	70-130	D	%Rec	50	1/5/2023 12:25:52 AM	R93710
Surr: Dibromofluoromethane	75.5	0	70-130	D	%Rec	50	1/5/2023 12:25:52 AM	R93710
Surr: Toluene-d8	102	0	70-130	D	%Rec	50	1/5/2023 12:25:52 AM	R93710

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-55
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022 12:30:00 PM
Lab ID: 2212E09-007B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	12/30/2022 5:53:30 AM	72358

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-55
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022 12:30:00 PM
Lab ID: 2212E09-007C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	4.4	0.032	0.13	B	mg/L	2	1/6/2023 4:13:22 PM	72386
Motor Oil Range Organics (MRO)	ND	0.10	0.16	D	mg/L	2	1/6/2023 4:13:22 PM	72386
Surr: DNOP	111	0	15.9-177		%Rec	2	1/6/2023 4:13:22 PM	72386
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	1/9/2023 12:52:16 PM	72347
Bis(2-ethylhexyl)phthalate	10	8.4	10		µg/L	1	1/9/2023 12:52:16 PM	72347
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	1/9/2023 12:52:16 PM	72347
Di-n-octyl phthalate	ND	12	20		µg/L	1	1/9/2023 12:52:16 PM	72347
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	1/9/2023 12:52:16 PM	72347
Diethyl phthalate	ND	6.0	10		µg/L	1	1/9/2023 12:52:16 PM	72347
Dimethyl phthalate	ND	6.0	10		µg/L	1	1/9/2023 12:52:16 PM	72347
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	1/9/2023 12:52:16 PM	72347
2,4-Dinitrophenol	ND	16	20		µg/L	1	1/9/2023 12:52:16 PM	72347
1-Methylnaphthalene	28	4.3	5.0		µg/L	1	1/9/2023 12:52:16 PM	72347
2-Methylphenol	ND	5.0	10		µg/L	1	1/9/2023 12:52:16 PM	72347
3+4-Methylphenol	ND	5.1	10		µg/L	1	1/9/2023 12:52:16 PM	72347
Naphthalene	22	3.2	5.0		µg/L	1	1/9/2023 12:52:16 PM	72347
Phenol	24	18	20		µg/L	1	1/9/2023 12:52:16 PM	72347
Pyridine	ND	14	40		µg/L	1	1/9/2023 12:52:16 PM	72347
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	1/9/2023 12:52:16 PM	72347
Surr: 2-Fluorophenol	44.8	0	15-84.5		%Rec	1	1/9/2023 12:52:16 PM	72347
Surr: Phenol-d5	35.9	0	15-67		%Rec	1	1/9/2023 12:52:16 PM	72347
Surr: 2,4,6-Tribromophenol	75.7	0	15-108		%Rec	1	1/9/2023 12:52:16 PM	72347
Surr: Nitrobenzene-d5	61.3	0	16.8-112		%Rec	1	1/9/2023 12:52:16 PM	72347
Surr: 2-Fluorobiphenyl	55.5	0	15-101		%Rec	1	1/9/2023 12:52:16 PM	72347
Surr: 4-Terphenyl-d14	86.0	0	34.4-134		%Rec	1	1/9/2023 12:52:16 PM	72347
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	1.2	0.11	1.0		µg/L	1	1/4/2023 11:34:00 PM	72347
2-Methylnaphthalene	16	0.14	0.30		µg/L	1	1/4/2023 11:34:00 PM	72347
Acenaphthene	0.68	0.14	0.30		µg/L	1	1/4/2023 11:34:00 PM	72347
Fluorene	2.1	0.095	0.30		µg/L	1	1/4/2023 11:34:00 PM	72347
Phenanthrene	2.0	0.16	0.30		µg/L	1	1/4/2023 11:34:00 PM	72347
Anthracene	0.22	0.14	0.30	J	µg/L	1	1/4/2023 11:34:00 PM	72347
Fluoranthene	ND	0.14	0.30		µg/L	1	1/4/2023 11:34:00 PM	72347
Pyrene	ND	0.32	1.0		µg/L	1	1/4/2023 11:34:00 PM	72347
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	1/4/2023 11:34:00 PM	72347
Chrysene	ND	0.25	0.30		µg/L	1	1/4/2023 11:34:00 PM	72347
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	1/4/2023 11:34:00 PM	72347
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	1/4/2023 11:34:00 PM	72347

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-55
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022 12:30:00 PM
Lab ID: 2212E09-007C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	65.3	0	15-108		%Rec	1	1/4/2023 11:34:00 PM	72347
Surr: 2-Fluorobiphenyl	47.4	0	15-107		%Rec	1	1/4/2023 11:34:00 PM	72347
Surr: 4-Terphenyl-d14	86.4	0	15-166		%Rec	1	1/4/2023 11:34:00 PM	72347

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-55
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022 12:30:00 PM
Lab ID: 2212E09-007D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.80	0.0016	0.0030		mg/L	1	1/9/2023 4:14:24 PM	72409
Beryllium	0.0018	0.00060	0.0020	J	mg/L	1	1/9/2023 9:56:09 AM	72409
Cadmium	ND	0.0018	0.0020		mg/L	1	1/9/2023 9:56:09 AM	72409
Chromium	0.0081	0.0020	0.0060		mg/L	1	1/9/2023 9:56:09 AM	72409
Cobalt	0.036	0.0035	0.0060		mg/L	1	1/9/2023 4:14:24 PM	72409
Nickel	0.25	0.0053	0.010	*	mg/L	1	1/9/2023 9:56:09 AM	72409
Silver	ND	0.0018	0.0050		mg/L	1	1/9/2023 9:56:09 AM	72409
Vanadium	0.036	0.0035	0.050	J	mg/L	1	1/9/2023 9:56:09 AM	72409
Zinc	0.040	0.0039	0.010		mg/L	1	1/9/2023 4:14:24 PM	72409
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	1/5/2023 3:55:00 PM	72409
Arsenic	0.0095	0.00022	0.0010		mg/L	1	1/5/2023 3:55:00 PM	72409
Lead	0.013	0.00019	0.00050		mg/L	1	1/5/2023 3:55:00 PM	72409
Selenium	0.0048	0.00089	0.0010		mg/L	1	1/13/2023 12:39:59 PM	72409
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00011	0.000091	0.00020	J	mg/L	1	1/6/2023 9:10:40 AM	72446

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-55
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022 12:30:00 PM
Lab ID: 2212E09-007E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.56	0.0011	0.0020		mg/L	1	1/5/2023 8:21:56 PM	B93766
Beryllium	ND	0.00059	0.0020		mg/L	1	1/5/2023 8:21:56 PM	B93766
Cadmium	ND	0.00098	0.0020		mg/L	1	1/5/2023 8:21:56 PM	B93766
Chromium	ND	0.0020	0.0060		mg/L	1	1/5/2023 8:21:56 PM	B93766
Cobalt	0.0057	0.0024	0.0060	J	mg/L	1	1/5/2023 8:21:56 PM	B93766
Nickel	0.22	0.0033	0.010	*	mg/L	1	1/5/2023 8:21:56 PM	B93766
Silver	ND	0.0013	0.0050		mg/L	1	1/5/2023 8:21:56 PM	B93766
Vanadium	0.0057	0.0017	0.050	J	mg/L	1	1/5/2023 8:21:56 PM	B93766
Zinc	0.0041	0.0032	0.010	J	mg/L	1	1/5/2023 8:21:56 PM	B93766
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00045	0.0010		mg/L	1	1/10/2023 1:42:15 PM	A93855
Arsenic	0.0059	0.00057	0.0010		mg/L	1	1/10/2023 1:42:15 PM	A93855
Lead	ND	0.000099	0.00050		mg/L	1	1/10/2023 1:42:15 PM	A93855
Selenium	0.0042	0.00056	0.0010		mg/L	1	1/10/2023 1:42:15 PM	A93855
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	1/6/2023 9:12:48 AM	72446

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB-12-27-22
Project: 2022 GW Sampling 4th Quarter
Collection Date:
Lab ID: 2212E09-008A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	1.0	1.0		µg/L	1	1/5/2023 12:54:12 AM	R93710
Toluene	ND	1.0	1.0		µg/L	1	1/5/2023 12:54:12 AM	R93710
Ethylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 12:54:12 AM	R93710
Methyl tert-butyl ether (MTBE)	ND	1.0	1.0		µg/L	1	1/5/2023 12:54:12 AM	R93710
1,2,4-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 12:54:12 AM	R93710
1,3,5-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 12:54:12 AM	R93710
1,2-Dichloroethane (EDC)	ND	1.0	1.0		µg/L	1	1/5/2023 12:54:12 AM	R93710
Acetone	ND	10	10		µg/L	1	1/5/2023 12:54:12 AM	R93710
Bromomethane	ND	3.0	3.0		µg/L	1	1/5/2023 12:54:12 AM	R93710
2-Butanone	ND	10	10		µg/L	1	1/5/2023 12:54:12 AM	R93710
Carbon disulfide	ND	10	10		µg/L	1	1/5/2023 12:54:12 AM	R93710
Chlorobenzene	ND	1.0	1.0		µg/L	1	1/5/2023 12:54:12 AM	R93710
Chloroform	ND	1.0	1.0		µg/L	1	1/5/2023 12:54:12 AM	R93710
Chloromethane	ND	3.0	3.0		µg/L	1	1/5/2023 12:54:12 AM	R93710
cis-1,2-DCE	ND	1.0	1.0		µg/L	1	1/5/2023 12:54:12 AM	R93710
1,1-Dichloroethane	ND	1.0	1.0		µg/L	1	1/5/2023 12:54:12 AM	R93710
1,1-Dichloroethene	ND	1.0	1.0		µg/L	1	1/5/2023 12:54:12 AM	R93710
Isopropylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 12:54:12 AM	R93710
4-Isopropyltoluene	ND	1.0	1.0		µg/L	1	1/5/2023 12:54:12 AM	R93710
Methylene Chloride	ND	3.0	3.0		µg/L	1	1/5/2023 12:54:12 AM	R93710
n-Butylbenzene	ND	3.0	3.0		µg/L	1	1/5/2023 12:54:12 AM	R93710
n-Propylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 12:54:12 AM	R93710
sec-Butylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 12:54:12 AM	R93710
Styrene	ND	1.0	1.0		µg/L	1	1/5/2023 12:54:12 AM	R93710
Tetrachloroethene (PCE)	ND	1.0	1.0		µg/L	1	1/5/2023 12:54:12 AM	R93710
1,1,1-Trichloroethane	ND	1.0	1.0		µg/L	1	1/5/2023 12:54:12 AM	R93710
Trichloroethene (TCE)	ND	1.0	1.0		µg/L	1	1/5/2023 12:54:12 AM	R93710
Vinyl chloride	ND	1.0	1.0		µg/L	1	1/5/2023 12:54:12 AM	R93710
Xylenes, Total	ND	1.5	1.5		µg/L	1	1/5/2023 12:54:12 AM	R93710
Surr: 1,2-Dichloroethane-d4	86.9	0	70-130		%Rec	1	1/5/2023 12:54:12 AM	R93710
Surr: 4-Bromofluorobenzene	116	0	70-130		%Rec	1	1/5/2023 12:54:12 AM	R93710
Surr: Dibromofluoromethane	80.7	0	70-130		%Rec	1	1/5/2023 12:54:12 AM	R93710
Surr: Toluene-d8	102	0	70-130		%Rec	1	1/5/2023 12:54:12 AM	R93710

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Dup-12-27-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022
Lab ID: 2212E09-009A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	0.063	0.0090	0.050		mg/L	1	1/4/2023 12:18:08 AM	R93693
Surr: BFB	91.0	0	70-130		%Rec	1	1/4/2023 12:18:08 AM	R93693
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	1.0	1.0		µg/L	1	1/5/2023 1:22:32 AM	R93710
Toluene	ND	1.0	1.0		µg/L	1	1/5/2023 1:22:32 AM	R93710
Ethylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 1:22:32 AM	R93710
Methyl tert-butyl ether (MTBE)	64	1.0	1.0		µg/L	1	1/5/2023 1:22:32 AM	R93710
1,2,4-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 1:22:32 AM	R93710
1,3,5-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 1:22:32 AM	R93710
1,2-Dichloroethane (EDC)	ND	1.0	1.0		µg/L	1	1/5/2023 1:22:32 AM	R93710
Acetone	ND	10	10		µg/L	1	1/5/2023 1:22:32 AM	R93710
Bromomethane	ND	3.0	3.0		µg/L	1	1/5/2023 1:22:32 AM	R93710
2-Butanone	ND	10	10		µg/L	1	1/5/2023 1:22:32 AM	R93710
Carbon disulfide	ND	10	10		µg/L	1	1/5/2023 1:22:32 AM	R93710
Chlorobenzene	ND	1.0	1.0		µg/L	1	1/5/2023 1:22:32 AM	R93710
Chloroform	ND	1.0	1.0		µg/L	1	1/5/2023 1:22:32 AM	R93710
Chloromethane	ND	3.0	3.0		µg/L	1	1/5/2023 1:22:32 AM	R93710
cis-1,2-DCE	ND	1.0	1.0		µg/L	1	1/5/2023 1:22:32 AM	R93710
1,1-Dichloroethane	ND	1.0	1.0		µg/L	1	1/5/2023 1:22:32 AM	R93710
1,1-Dichloroethene	ND	1.0	1.0		µg/L	1	1/5/2023 1:22:32 AM	R93710
Isopropylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 1:22:32 AM	R93710
4-Isopropyltoluene	ND	1.0	1.0		µg/L	1	1/5/2023 1:22:32 AM	R93710
Methylene Chloride	ND	3.0	3.0		µg/L	1	1/5/2023 1:22:32 AM	R93710
n-Butylbenzene	ND	3.0	3.0		µg/L	1	1/5/2023 1:22:32 AM	R93710
n-Propylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 1:22:32 AM	R93710
sec-Butylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 1:22:32 AM	R93710
Styrene	ND	1.0	1.0		µg/L	1	1/5/2023 1:22:32 AM	R93710
Tetrachloroethene (PCE)	ND	1.0	1.0		µg/L	1	1/5/2023 1:22:32 AM	R93710
1,1,1-Trichloroethane	ND	1.0	1.0		µg/L	1	1/5/2023 1:22:32 AM	R93710
Trichloroethene (TCE)	ND	1.0	1.0		µg/L	1	1/5/2023 1:22:32 AM	R93710
Vinyl chloride	ND	1.0	1.0		µg/L	1	1/5/2023 1:22:32 AM	R93710
Xylenes, Total	ND	1.5	1.5		µg/L	1	1/5/2023 1:22:32 AM	R93710
Surr: 1,2-Dichloroethane-d4	94.3	0	70-130		%Rec	1	1/5/2023 1:22:32 AM	R93710
Surr: 4-Bromofluorobenzene	123	0	70-130		%Rec	1	1/5/2023 1:22:32 AM	R93710
Surr: Dibromofluoromethane	83.0	0	70-130		%Rec	1	1/5/2023 1:22:32 AM	R93710
Surr: Toluene-d8	103	0	70-130		%Rec	1	1/5/2023 1:22:32 AM	R93710

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Dup-12-27-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022
Lab ID: 2212E09-009B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	12/30/2022 6:08:18 AM	72358

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Dup-12-27-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022
Lab ID: 2212E09-009C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.059	0.016	0.064	JB	mg/L	1	1/5/2023 5:46:26 PM	72386
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	1/5/2023 5:46:26 PM	72386
Surr: DNOP	109	0	15.9-177		%Rec	1	1/5/2023 5:46:26 PM	72386
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	1/9/2023 1:33:44 PM	72347
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	1/9/2023 1:33:44 PM	72347
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	1/9/2023 1:33:44 PM	72347
Di-n-octyl phthalate	ND	12	20		µg/L	1	1/9/2023 1:33:44 PM	72347
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	1/9/2023 1:33:44 PM	72347
Diethyl phthalate	ND	6.0	10		µg/L	1	1/9/2023 1:33:44 PM	72347
Dimethyl phthalate	ND	6.0	10		µg/L	1	1/9/2023 1:33:44 PM	72347
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	1/9/2023 1:33:44 PM	72347
2,4-Dinitrophenol	ND	16	20		µg/L	1	1/9/2023 1:33:44 PM	72347
2-Methylphenol	ND	5.0	10		µg/L	1	1/9/2023 1:33:44 PM	72347
3+4-Methylphenol	ND	5.1	10		µg/L	1	1/9/2023 1:33:44 PM	72347
Phenol	ND	18	20		µg/L	1	1/9/2023 1:33:44 PM	72347
Pyridine	ND	14	40		µg/L	1	1/9/2023 1:33:44 PM	72347
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	1/9/2023 1:33:44 PM	72347
Surr: 2-Fluorophenol	47.0	0	15-84.5		%Rec	1	1/9/2023 1:33:44 PM	72347
Surr: Phenol-d5	36.4	0	15-67		%Rec	1	1/9/2023 1:33:44 PM	72347
Surr: 2,4,6-Tribromophenol	68.7	0	15-108		%Rec	1	1/9/2023 1:33:44 PM	72347
Surr: Nitrobenzene-d5	60.7	0	16.8-112		%Rec	1	1/9/2023 1:33:44 PM	72347
Surr: 2-Fluorobiphenyl	55.1	0	15-101		%Rec	1	1/9/2023 1:33:44 PM	72347
Surr: 4-Terphenyl-d14	82.2	0	34.4-134		%Rec	1	1/9/2023 1:33:44 PM	72347
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	1/5/2023 12:17:00 AM	72347
Naphthalene	ND	0.20	0.30		µg/L	1	1/5/2023 12:17:00 AM	72347
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	1/5/2023 12:17:00 AM	72347
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	1/5/2023 12:17:00 AM	72347
Acenaphthene	ND	0.14	0.30		µg/L	1	1/5/2023 12:17:00 AM	72347
Fluorene	ND	0.095	0.30		µg/L	1	1/5/2023 12:17:00 AM	72347
Phenanthrene	ND	0.16	0.30		µg/L	1	1/5/2023 12:17:00 AM	72347
Anthracene	ND	0.14	0.30		µg/L	1	1/5/2023 12:17:00 AM	72347
Fluoranthene	ND	0.14	0.30		µg/L	1	1/5/2023 12:17:00 AM	72347
Pyrene	ND	0.32	1.0		µg/L	1	1/5/2023 12:17:00 AM	72347
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	1/5/2023 12:17:00 AM	72347
Chrysene	ND	0.25	0.30		µg/L	1	1/5/2023 12:17:00 AM	72347
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	1/5/2023 12:17:00 AM	72347
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	1/5/2023 12:17:00 AM	72347

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Dup-12-27-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022
Lab ID: 2212E09-009C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	63.9	0	15-108		%Rec	1	1/5/2023 12:17:00 AM	72347
Surr: 2-Fluorobiphenyl	55.1	0	15-107		%Rec	1	1/5/2023 12:17:00 AM	72347
Surr: 4-Terphenyl-d14	100	0	15-166		%Rec	1	1/5/2023 12:17:00 AM	72347

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Dup-12-27-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022
Lab ID: 2212E09-009D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.049	0.0016	0.0030		mg/L	1	1/9/2023 4:17:41 PM	72409
Beryllium	ND	0.00060	0.0020		mg/L	1	1/9/2023 9:59:04 AM	72409
Cadmium	ND	0.0018	0.0020		mg/L	1	1/9/2023 9:59:04 AM	72409
Chromium	ND	0.0020	0.0060		mg/L	1	1/9/2023 9:59:04 AM	72409
Cobalt	ND	0.0035	0.0060		mg/L	1	1/9/2023 4:17:41 PM	72409
Nickel	ND	0.0053	0.010		mg/L	1	1/9/2023 9:59:04 AM	72409
Silver	ND	0.0018	0.0050		mg/L	1	1/9/2023 9:59:04 AM	72409
Vanadium	ND	0.0035	0.050		mg/L	1	1/9/2023 9:59:04 AM	72409
Zinc	ND	0.0039	0.010		mg/L	1	1/9/2023 9:59:04 AM	72409
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	1/5/2023 3:59:57 PM	72409
Arsenic	0.0021	0.00022	0.0010		mg/L	1	1/5/2023 3:59:57 PM	72409
Lead	ND	0.00019	0.00050		mg/L	1	1/5/2023 3:59:57 PM	72409
Selenium	ND	0.00089	0.0010		mg/L	1	1/13/2023 12:42:26 PM	72409
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00011	0.000091	0.00020	J	mg/L	1	1/6/2023 9:14:57 AM	72446

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Dup-12-27-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/27/2022
Lab ID: 2212E09-009E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.053	0.0011	0.0020		mg/L	1	1/5/2023 8:27:56 PM	B93766
Beryllium	ND	0.00059	0.0020		mg/L	1	1/5/2023 8:27:56 PM	B93766
Cadmium	ND	0.00098	0.0020		mg/L	1	1/5/2023 8:27:56 PM	B93766
Chromium	ND	0.0020	0.0060		mg/L	1	1/5/2023 8:27:56 PM	B93766
Cobalt	ND	0.0024	0.0060		mg/L	1	1/5/2023 8:27:56 PM	B93766
Nickel	ND	0.0033	0.010		mg/L	1	1/5/2023 8:27:56 PM	B93766
Silver	ND	0.0013	0.0050		mg/L	1	1/5/2023 8:27:56 PM	B93766
Vanadium	0.0021	0.0017	0.050	J	mg/L	1	1/5/2023 8:27:56 PM	B93766
Zinc	ND	0.0032	0.010		mg/L	1	1/5/2023 8:27:56 PM	B93766
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00045	0.0010		mg/L	1	1/10/2023 1:47:34 PM	A93855
Arsenic	0.0026	0.00057	0.0010		mg/L	1	1/10/2023 1:47:34 PM	A93855
Lead	ND	0.000099	0.00050		mg/L	1	1/10/2023 1:47:34 PM	A93855
Selenium	0.0017	0.00056	0.0010		mg/L	1	1/10/2023 1:47:34 PM	A93855
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00010	0.000091	0.00020	J	mg/L	1	1/6/2023 9:21:21 AM	72446

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 4th Quarter
Collection Date:
Lab ID: 2212E09-010A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	1.0	1.0		µg/L	1	1/5/2023 1:50:49 AM	R93710
Toluene	ND	1.0	1.0		µg/L	1	1/5/2023 1:50:49 AM	R93710
Ethylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 1:50:49 AM	R93710
Methyl tert-butyl ether (MTBE)	ND	1.0	1.0		µg/L	1	1/5/2023 1:50:49 AM	R93710
1,2,4-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 1:50:49 AM	R93710
1,3,5-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 1:50:49 AM	R93710
1,2-Dichloroethane (EDC)	ND	1.0	1.0		µg/L	1	1/5/2023 1:50:49 AM	R93710
Acetone	ND	10	10		µg/L	1	1/5/2023 1:50:49 AM	R93710
Bromomethane	ND	3.0	3.0		µg/L	1	1/5/2023 1:50:49 AM	R93710
2-Butanone	ND	10	10		µg/L	1	1/5/2023 1:50:49 AM	R93710
Carbon disulfide	ND	10	10		µg/L	1	1/5/2023 1:50:49 AM	R93710
Chlorobenzene	ND	1.0	1.0		µg/L	1	1/5/2023 1:50:49 AM	R93710
Chloroform	ND	1.0	1.0		µg/L	1	1/5/2023 1:50:49 AM	R93710
Chloromethane	ND	3.0	3.0		µg/L	1	1/5/2023 1:50:49 AM	R93710
cis-1,2-DCE	ND	1.0	1.0		µg/L	1	1/5/2023 1:50:49 AM	R93710
1,1-Dichloroethane	ND	1.0	1.0		µg/L	1	1/5/2023 1:50:49 AM	R93710
1,1-Dichloroethene	ND	1.0	1.0		µg/L	1	1/5/2023 1:50:49 AM	R93710
Isopropylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 1:50:49 AM	R93710
4-Isopropyltoluene	ND	1.0	1.0		µg/L	1	1/5/2023 1:50:49 AM	R93710
Methylene Chloride	ND	3.0	3.0		µg/L	1	1/5/2023 1:50:49 AM	R93710
n-Butylbenzene	ND	3.0	3.0		µg/L	1	1/5/2023 1:50:49 AM	R93710
n-Propylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 1:50:49 AM	R93710
sec-Butylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 1:50:49 AM	R93710
Styrene	ND	1.0	1.0		µg/L	1	1/5/2023 1:50:49 AM	R93710
Tetrachloroethene (PCE)	ND	1.0	1.0		µg/L	1	1/5/2023 1:50:49 AM	R93710
1,1,1-Trichloroethane	ND	1.0	1.0		µg/L	1	1/5/2023 1:50:49 AM	R93710
Trichloroethene (TCE)	ND	1.0	1.0		µg/L	1	1/5/2023 1:50:49 AM	R93710
Vinyl chloride	ND	1.0	1.0		µg/L	1	1/5/2023 1:50:49 AM	R93710
Xylenes, Total	ND	1.5	1.5		µg/L	1	1/5/2023 1:50:49 AM	R93710
Surr: 1,2-Dichloroethane-d4	90.7	0	70-130		%Rec	1	1/5/2023 1:50:49 AM	R93710
Surr: 4-Bromofluorobenzene	116	0	70-130		%Rec	1	1/5/2023 1:50:49 AM	R93710
Surr: Dibromofluoromethane	81.4	0	70-130		%Rec	1	1/5/2023 1:50:49 AM	R93710
Surr: Toluene-d8	100	0	70-130		%Rec	1	1/5/2023 1:50:49 AM	R93710

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E09**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 4th Quarter
Collection Date:
Lab ID: 2212E09-010B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **SB**	
1,2-Dibromoethane	ND	0.0027	0.0096		µg/L	1	12/30/2022 6:23:08 AM	72358

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

ANALYTICAL REPORT

January 03, 2023

Hall Environmental Analysis Laboratory

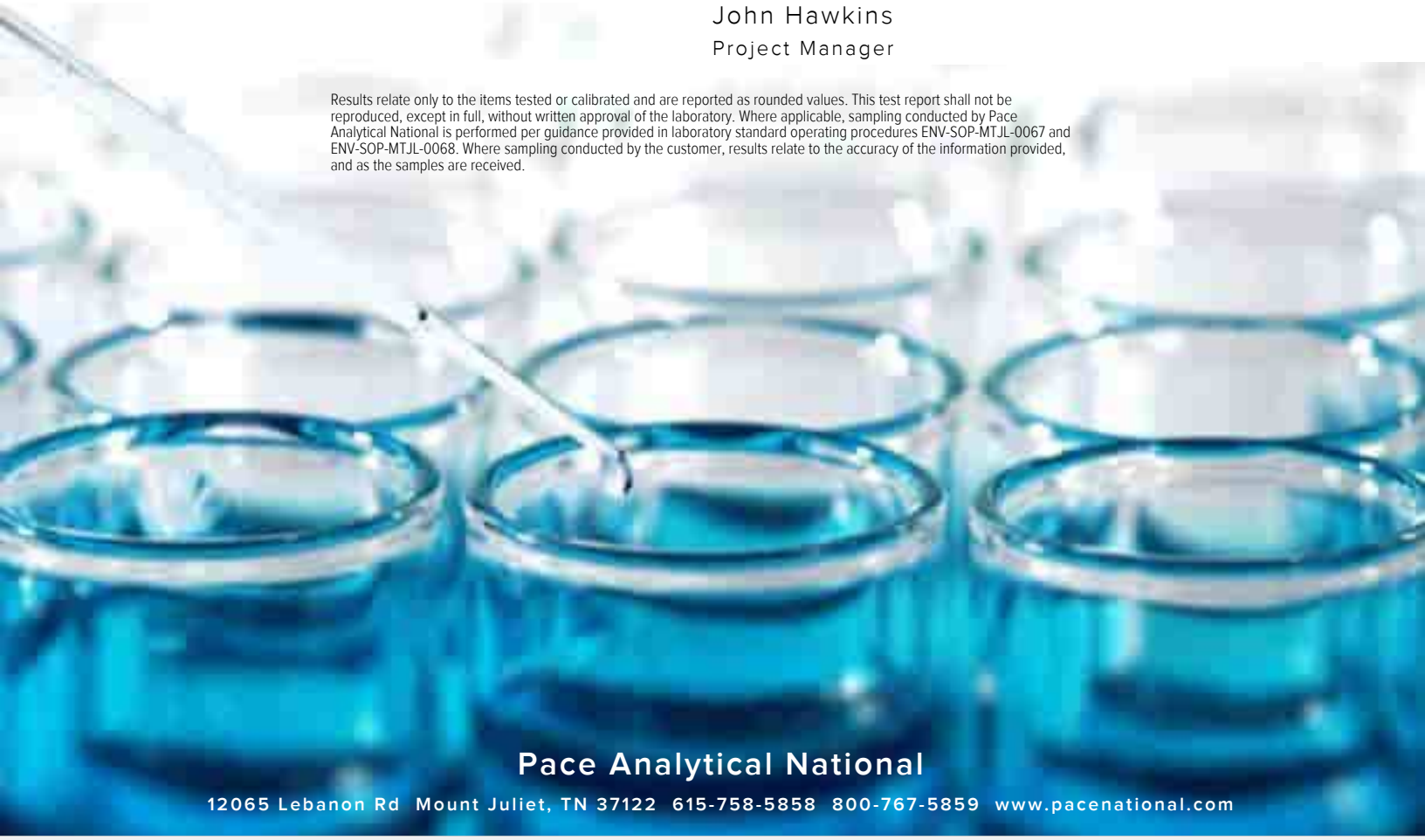
Sample Delivery Group:	L1571459
Samples Received:	12/29/2022
Project Number:	
Description:	

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By:

John Hawkins
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 4

Sr: Sample Results 5

2212E09-001F EB-12-27-22 L1571459-01 5

2212E09-002F OW-50 L1571459-02 6

2212E09-003F OW-52 L1571459-03 7

2212E09-004F OW-29 L1571459-04 8

2212E09-005F OW-54 L1571459-05 9

2212E09-006F OW-66 L1571459-06 10

2212E09-007F OW-55 L1571459-07 11

2212E09-009F DUP-12-27-22 L1571459-08 12

Qc: Quality Control Summary 13

Wet Chemistry by Method 4500CN E-2016 13

Gl: Glossary of Terms 16

Al: Accreditations & Locations 17

Sc: Sample Chain of Custody 18

SAMPLE SUMMARY

2212E09-001F EB-12-27-22 L1571459-01 WW

Collected by | Collected date/time 12/27/22 09:30 | Received date/time 12/29/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1980984	1	12/30/22 08:29	12/30/22 18:04	LDT	Mt. Juliet, TN

2212E09-002F OW-50 L1571459-02 WW

Collected by | Collected date/time 12/27/22 10:00 | Received date/time 12/29/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1980984	1	12/30/22 08:29	12/30/22 18:05	LDT	Mt. Juliet, TN

2212E09-003F OW-52 L1571459-03 WW

Collected by | Collected date/time 12/27/22 10:30 | Received date/time 12/29/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1980984	1	12/30/22 08:29	12/30/22 18:06	LDT	Mt. Juliet, TN

2212E09-004F OW-29 L1571459-04 WW

Collected by | Collected date/time 12/27/22 11:15 | Received date/time 12/29/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1980984	1	12/30/22 08:29	12/30/22 18:07	LDT	Mt. Juliet, TN

2212E09-005F OW-54 L1571459-05 WW

Collected by | Collected date/time 12/27/22 11:45 | Received date/time 12/29/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1980984	1	12/30/22 08:29	12/30/22 18:08	LDT	Mt. Juliet, TN

2212E09-006F OW-66 L1571459-06 WW

Collected by | Collected date/time 12/27/22 12:05 | Received date/time 12/29/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1981929	1	01/01/23 17:23	01/02/23 09:15	JCS	Mt. Juliet, TN

2212E09-007F OW-55 L1571459-07 WW

Collected by | Collected date/time 12/27/22 12:30 | Received date/time 12/29/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1981929	1	01/01/23 17:23	01/02/23 09:18	JCS	Mt. Juliet, TN

2212E09-009F DUP-12-27-22 L1571459-08 WW

Collected by | Collected date/time 12/27/22 00:00 | Received date/time 12/29/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1981929	1	01/01/23 17:23	01/02/23 09:23	JCS	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	12/30/2022 18:04	WG1980984

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	12/30/2022 18:05	WG1980984

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	12/30/2022 18:06	WG1980984

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.00500		0.00500	1	12/30/2022 18:07	WG1980984

Received by OCD: 4/21/2023 9:21:57 AM

22121109-0051-OW-54
Collected date/time: 12/27/22 11:45
L1571459

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.00583		0.00500	1	12/30/2022 18:08	WG1980984

Released to Imaging: 4/21/2023 9:40:26 AM

22121209-0061-UW-66
Collected date/time: 12/27/22 12:05
L1571459

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.0108		0.00500	1	01/02/2023 09:15	WG1981929

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.00645		0.00500	1	01/02/2023 09:18	WG1981929

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	01/02/2023 09:23	WG1981929

Method Blank (MB)

(MB) R3877001-1 12/30/22 17:35

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1571184-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1571184-06 12/30/22 17:50 • (DUP) R3877001-3 12/30/22 17:51

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

L1571184-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1571184-07 12/30/22 17:52 • (DUP) R3877001-4 12/30/22 17:53

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3877001-2 12/30/22 17:36

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.0882	88.2	87.1-120	

L1571184-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1571184-08 12/30/22 17:54 • (MS) R3877001-5 12/30/22 17:55 • (MSD) R3877001-6 12/30/22 17:56

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0910	0.0913	91.0	91.3	1	90.0-110			0.329	20

L1571184-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1571184-09 12/30/22 17:59 • (MS) R3877001-7 12/30/22 18:00 • (MSD) R3877001-8 12/30/22 18:01

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0893	0.0914	89.3	91.4	1	90.0-110	J6		2.32	20

L1571184-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1571184-09 12/30/22 17:59 • (MS) R3877001-7 12/30/22 18:00 • (MSD) R3877001-8 12/30/22 18:01

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %

Sample Narrative:

MS: Matrix spike failure due to matrix.

Method Blank (MB)

(MB) R3877142-1 01/02/23 09:09

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1571459-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1571459-06 01/02/23 09:15 • (DUP) R3877142-3 01/02/23 09:16

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	0.0108	0.0118	1	8.85		20

L1571581-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1571581-02 01/02/23 09:26 • (DUP) R3877142-6 01/02/23 09:27

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3877142-2 01/02/23 09:10

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.0981	98.1	87.1-120	

L1571459-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1571459-07 01/02/23 09:18 • (MS) R3877142-4 01/02/23 09:19 • (MSD) R3877142-5 01/02/23 09:22

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	0.00645	0.0974	0.0983	91.0	91.9	1	90.0-110			0.920	20

L1571740-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1571740-02 01/02/23 09:34 • (MS) R3877142-7 01/02/23 09:35 • (MSD) R3877142-8 01/02/23 09:36

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0977	0.0955	97.7	95.5	1	90.0-110			2.28	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Received by OCD: 4/21/2023 9:21:57 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

J038

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

SUB CONTRATOR:	Pace TN	COMPANY: PACE TN	PHONE: (800) 767-5859	FAX: (615) 758-5859	
ADDRESS:	12065 Lebanon Rd		ACCOUNT #:	EMAIL:	
CITY, STATE, ZIP:	Mt. Juliet, TN 37122				

L1571459

7/2 Rcvd

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS	
1	2212E09-001F	EB-12-27-22	500AMBHDP F-NAOH	Groundwater	12/27/2022 9:30:00 AM	1	Total Cyanide J and MDL	-01
2	2212E09-002F	OW-50	500AMBHDP F-NAOH	Groundwater	12/27/2022 10:00:00 AM	1	Total Cyanide J and MDL	-02
3	2212E09-003F	OW-52	500AMBHDP F-NAOH	Groundwater	12/27/2022 10:30:00 AM	1	Total Cyanide J and MDL	-03
4	2212E09-004F	OW-29	500AMBHDP F-NAOH	Groundwater	12/27/2022 11:15:00 AM	1	Total Cyanide J and MDL	-04
5	2212E09-005F	OW-54	500AMBHDP F-NAOH	Groundwater	12/27/2022 11:45:00 AM	1	Total Cyanide J and MDL	-05
6	2212E09-006F	OW-66	500AMBHDP F-NAOH	Groundwater	12/27/2022 12:05:00 PM	1	Total Cyanide J and MDL	-06
7	2212E09-007F	OW-55	500AMBHDP F-NAOH	Groundwater	12/27/2022 12:30:00 PM	1	Total Cyanide J and MDL	-07
8	2212E09-009F	Dup-12-27-22	500AMBHDP F-NAOH	Groundwater	12/27/2022	1	Total Cyanide J and MDL	-08

0201 7708 9777 3871

Sample Receipt Checklist

COC Seal Present/Intact:	X Y N	If Applicable	
COC Signed/Accurate:	✓ Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	✓ Y N	Pres.Correct/Check:	✓ Y N
Correct bottles used:	✓ Y N		
Sufficient volume sent:	✓ Y N		
RAD Screen <0.5 mR/hr:	✓ Y N		

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By: I-Q	Date: 12/28/2022	Time: 8:18 AM	Received By: [signature]	Date: 12/29/22	Time: 0900
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☒ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:

☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY

Temp of samples 2.5+0-2.5 °C KFAR Attempt to Cool ? _____

Comments: _____

Released to Imaging: 4/21/2023 9:40:26 AM

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212E09**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-72409**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **72409**	RunNo: **93794**
Prep Date: **1/3/2023**	Analysis Date: **1/9/2023**	SeqNo: **3386096** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	0.0045	0.010								J

Sample ID: **LCSLL-72409**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **72409**	RunNo: **93794**
Prep Date: **1/3/2023**	Analysis Date: **1/9/2023**	SeqNo: **3386097** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0025	0.0030	0.002000	0	124	50	150			J
Beryllium	0.0021	0.0020	0.002000	0	107	50	150			
Cadmium	0.0020	0.0020	0.002000	0	102	50	150			
Chromium	0.0072	0.0060	0.006000	0	120	50	150			
Cobalt	0.0084	0.0060	0.006000	0	140	50	150			
Nickel	0.0070	0.010	0.005000	0	139	50	150			J
Silver	0.0053	0.0050	0.005000	0	106	50	150			
Vanadium	0.011	0.050	0.01000	0	108	50	150			J
Zinc	0.013	0.010	0.01000	0	129	50	150			

Sample ID: **LCS-72409**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **72409**	RunNo: **93794**
Prep Date: **1/3/2023**	Analysis Date: **1/9/2023**	SeqNo: **3386098** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.53	0.0030	0.5000	0	106	85	115			
Beryllium	0.55	0.0020	0.5000	0	109	85	115			
Cadmium	0.54	0.0020	0.5000	0	107	85	115			
Chromium	0.52	0.0060	0.5000	0	104	85	115			
Cobalt	0.52	0.0060	0.5000	0	103	85	115			
Nickel	0.51	0.010	0.5000	0	101	85	115			
Silver	0.10	0.0050	0.1000	0	103	85	115			
Vanadium	0.56	0.050	0.5000	0	111	85	115			
Zinc	0.52	0.010	0.5000	0	104	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212E09**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-B**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B93766**	RunNo: **93766**
Prep Date:	Analysis Date: **1/5/2023**	SeqNo: **3384999** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS-B**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B93766**	RunNo: **93766**
Prep Date:	Analysis Date: **1/5/2023**	SeqNo: **3385000** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0018	0.0020	0.002000	0	88.9	50	150			J
Beryllium	0.0019	0.0020	0.002000	0	97.1	50	150			J
Cadmium	0.0022	0.0020	0.002000	0	112	50	150			
Chromium	0.0062	0.0060	0.006000	0	104	50	150			
Cobalt	0.0062	0.0060	0.006000	0	104	50	150			
Nickel	0.0034	0.010	0.005000	0	68.9	50	150			J
Silver	0.0048	0.0050	0.005000	0	97.0	50	150			J
Vanadium	0.0099	0.050	0.01000	0	99.4	50	150			J
Zinc	0.010	0.010	0.01000	0	101	50	150			

Sample ID: **LCS-B**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B93766**	RunNo: **93766**
Prep Date:	Analysis Date: **1/5/2023**	SeqNo: **3385001** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0020	0.5000	0	102	85	115			
Beryllium	0.51	0.0020	0.5000	0	102	85	115			
Cadmium	0.51	0.0020	0.5000	0	101	85	115			
Chromium	0.50	0.0060	0.5000	0	99.2	85	115			
Cobalt	0.48	0.0060	0.5000	0	95.1	85	115			
Nickel	0.49	0.010	0.5000	0	98.1	85	115			
Silver	0.10	0.0050	0.1000	0	105	85	115			
Vanadium	0.52	0.050	0.5000	0	104	85	115			
Zinc	0.49	0.010	0.5000	0	97.8	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212E09**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-A**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A93838**	RunNo: **93838**
Prep Date:	Analysis Date: **1/9/2023**	SeqNo: **3387404** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	ND	0.010								

Sample ID: **LCSLL-A**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A93838**	RunNo: **93838**
Prep Date:	Analysis Date: **1/9/2023**	SeqNo: **3387405** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	0.011	0.010	0.01000	0	112	50	150			

Sample ID: **LCS-A**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A93838**	RunNo: **93838**
Prep Date:	Analysis Date: **1/9/2023**	SeqNo: **3387406** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	0.48	0.010	0.5000	0	95.7	85	115			

Sample ID: **2212E09-003EMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **OW-52**	Batch ID: **A93838**	RunNo: **93838**
Prep Date:	Analysis Date: **1/9/2023**	SeqNo: **3387418** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	0.49	0.010	0.5000	0.01381	94.6	70	130			

Sample ID: **2212E09-003EMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **OW-52**	Batch ID: **A93838**	RunNo: **93838**
Prep Date:	Analysis Date: **1/9/2023**	SeqNo: **3387419** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	0.48	0.010	0.5000	0.01381	93.3	70	130	1.30	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212E09**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-72409**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **72409**	RunNo: **93754**
Prep Date: **1/3/2023**	Analysis Date: **1/5/2023**	SeqNo: **3384108** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00062	0.0010								J
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **MSLCSLL-72409**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **72409**	RunNo: **93754**
Prep Date: **1/3/2023**	Analysis Date: **1/5/2023**	SeqNo: **3384109** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0012	0.0010	0.001000	0	119	50	150			
Arsenic	0.0011	0.0010	0.001000	0	105	50	150			
Lead	0.00050	0.00050	0.0005000	0	100	50	150			J

Sample ID: **MSLCS-72409**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **72409**	RunNo: **93754**
Prep Date: **1/3/2023**	Analysis Date: **1/5/2023**	SeqNo: **3384110** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.4	85	115			
Arsenic	0.023	0.0010	0.02500	0	93.9	85	115			
Lead	0.012	0.00050	0.01250	0	94.7	85	115			
Selenium	0.023	0.0010	0.02500	0	92.3	85	115			

Sample ID: **MSLCSLL-72409**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **72409**	RunNo: **93754**
Prep Date: **1/3/2023**	Analysis Date: **1/5/2023**	SeqNo: **3384115** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.00069	0.0010	0.001000	0	69.0	50	150			J

Sample ID: **2212E09-002DMSLL**	SampType: **MSD**	TestCode: **EPA 200.8: Metals**
Client ID: **OW-50**	Batch ID: **72409**	RunNo: **93754**
Prep Date: **1/3/2023**	Analysis Date: **1/5/2023**	SeqNo: **3384159** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	98.4	70	130			
Arsenic	0.027	0.0010	0.02500	0.002268	100	70	130			
Lead	0.012	0.00050	0.01250	0	98.3	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212E09**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **2212E09-001DMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Metals**
Client ID: **EB-12-27-22**	Batch ID: **72409**	RunNo: **93754**
Prep Date: **1/3/2023**	Analysis Date: **1/5/2023**	SeqNo: **3384161** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	99.5	70	130			
Arsenic	0.025	0.0010	0.02500	0	98.4	70	130			
Lead	0.013	0.00050	0.01250	0	102	70	130			

Sample ID: **2212E09-001DMSDL**	SampType: **MSD**	TestCode: **EPA 200.8: Metals**
Client ID: **EB-12-27-22**	Batch ID: **72409**	RunNo: **93754**
Prep Date: **1/3/2023**	Analysis Date: **1/5/2023**	SeqNo: **3384162** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	98.9	70	130	0.615	20	
Arsenic	0.023	0.0010	0.02500	0	93.3	70	130	5.31	20	
Lead	0.012	0.00050	0.01250	0	99.7	70	130	2.37	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212E09**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **A93855**	RunNo: **93855**
Prep Date:	Analysis Date: **1/10/2023**	SeqNo: **3387949** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **A93855**	RunNo: **93855**
Prep Date:	Analysis Date: **1/10/2023**	SeqNo: **3387950** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0010	0.0010	0.001000	0	102	50	150			
Arsenic	0.0012	0.0010	0.001000	0	120	50	150			
Lead	0.00050	0.00050	0.0005000	0	99.3	50	150			J
Selenium	0.00097	0.0010	0.001000	0	96.8	50	150			J

Sample ID: **LCSD**	SampType: **LCSD**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSS02**	Batch ID: **A93855**	RunNo: **93855**
Prep Date:	Analysis Date: **1/10/2023**	SeqNo: **3387952** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	104	85	115	2.62	20	
Arsenic	0.026	0.0010	0.02500	0	104	85	115	1.89	20	
Lead	0.013	0.00050	0.01250	0	106	85	115	3.90	20	
Selenium	0.026	0.0010	0.02500	0	103	85	115	1.01	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212E09**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-72446**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW**	Batch ID: **72446**	RunNo: **93761**
Prep Date: **1/4/2023**	Analysis Date: **1/6/2023**	SeqNo: **3384455** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.000099	0.00020								J

Sample ID: **LCSLL-72446**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC**	Batch ID: **72446**	RunNo: **93761**
Prep Date: **1/4/2023**	Analysis Date: **1/6/2023**	SeqNo: **3384456** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00022	0.00020	0.0001500	0	144	50	150			

Sample ID: **LCS-72446**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW**	Batch ID: **72446**	RunNo: **93761**
Prep Date: **1/4/2023**	Analysis Date: **1/6/2023**	SeqNo: **3384457** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0053	0.00020	0.005000	0	107	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212E09**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-72358**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **72358**	RunNo: **93623**							
Prep Date: **12/29/2022**	Analysis Date: **12/29/2022**	SeqNo: **3379045**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **MB-72358**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **72358**	RunNo: **93623**							
Prep Date: **12/29/2022**	Analysis Date: **12/29/2022**	SeqNo: **3379050**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-72358**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **LCSW**	Batch ID: **72358**	RunNo: **93623**							
Prep Date: **12/29/2022**	Analysis Date: **12/29/2022**	SeqNo: **3379931**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	106	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212E09**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-72386**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **PBW**	Batch ID: **72386**	RunNo: **93783**
Prep Date: **12/30/2022**	Analysis Date: **1/5/2023**	SeqNo: **3386219** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.10	0.064								
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.033		0.03750		87.3	15.9	177			

Sample ID: **LCS-72386**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSW**	Batch ID: **72386**	RunNo: **93783**
Prep Date: **12/30/2022**	Analysis Date: **1/5/2023**	SeqNo: **3386220** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.19	0.064	0.1875	0	100	31.2	125			B
Surr: DNOP	0.021		0.01875		110	15.9	177			

Sample ID: **LCSD-72386**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02**	Batch ID: **72386**	RunNo: **93783**
Prep Date: **12/30/2022**	Analysis Date: **1/5/2023**	SeqNo: **3386224** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.22	0.064	0.1875	0	115	31.2	125	13.9	20	B
Surr: DNOP	0.019		0.01875		102	15.9	177	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212E09**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **R93693**	RunNo: **93693**
Prep Date:	Analysis Date: **1/3/2023**	SeqNo: **3382018** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.50	0.050	0.5000	0	99.4	80	120			
Surr: BFB	37		20.00		183	70	130			S

Sample ID: **2212e09-006a msd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **OW-66**	Batch ID: **R93693**	RunNo: **93693**
Prep Date:	Analysis Date: **1/3/2023**	SeqNo: **3382026** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	260	2.5	25.00	244.1	79.5	70	130	3.51	20	
Surr: BFB	1900		1000		191	70	130	0	0	S

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **R93693**	RunNo: **93693**
Prep Date:	Analysis Date: **1/3/2023**	SeqNo: **3382038** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	18		20.00		88.2	70	130			

Sample ID: **2212e09-006a ms**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **OW-66**	Batch ID: **R93693**	RunNo: **93693**
Prep Date:	Analysis Date: **1/3/2023**	SeqNo: **3382039** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	250	2.5	25.00	244.1	43.0	70	130			S
Surr: BFB	1900		1000		192	70	130			S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212E09**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R93710**	RunNo: **93710**
Prep Date:	Analysis Date: **1/4/2023**	SeqNo: **3382555** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	101	70	130			
Toluene	21	1.0	20.00	0	105	70	130			
Chlorobenzene	20	1.0	20.00	0	98.3	70	130			
1,1-Dichloroethene	19	1.0	20.00	0	96.7	70	130			
Trichloroethene (TCE)	19	1.0	20.00	0	96.6	70	130			
Surr: 1,2-Dichloroethane-d4	9.1		10.00		91.4	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		110	70	130			
Surr: Dibromofluoromethane	8.1		10.00		81.0	70	130			
Surr: Toluene-d8	9.9		10.00		99.2	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R93710**	RunNo: **93710**
Prep Date:	Analysis Date: **1/4/2023**	SeqNo: **3382584** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212E09**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R93710**	RunNo: **93710**
Prep Date:	Analysis Date: **1/4/2023**	SeqNo: **3382584** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	8.6		10.00		85.8	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		114	70	130			
Surr: Dibromofluoromethane	8.2		10.00		81.8	70	130			
Surr: Toluene-d8	10		10.00		104	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212E09**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb-72347**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **72347**	RunNo: **93784**
Prep Date: **12/28/2022**	Analysis Date: **1/6/2023**	SeqNo: **3385641** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Anthracene	ND	10								
Benz(a)anthracene	ND	5.0								
Benzo(b)fluoranthene	ND	10								
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	10								
2,4-Dinitrophenol	ND	20								
Fluoranthene	ND	10								
Fluorene	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
1-Methylnaphthalene	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
Naphthalene	ND	5.0								
Phenanthrene	ND	10								
Phenol	ND	20								
Pyrene	ND	10								
Pyridine	ND	40								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	99		200.0		49.6	15	84.5			
Surr: Phenol-d5	78		200.0		38.9	15	67			
Surr: 2,4,6-Tribromophenol	130		200.0		67.3	15	108			
Surr: Nitrobenzene-d5	64		100.0		63.7	16.8	112			
Surr: 2-Fluorobiphenyl	53		100.0		53.1	15	101			
Surr: 4-Terphenyl-d14	93		100.0		92.5	34.4	134			

Sample ID: **lcs-72347**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **72347**	RunNo: **93784**
Prep Date: **12/28/2022**	Analysis Date: **1/6/2023**	SeqNo: **3385642** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212E09**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **lcs-72347**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **72347**	RunNo: **93784**
Prep Date: **12/28/2022**	Analysis Date: **1/6/2023**	SeqNo: **3385642** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	54	10	100.0	0	54.0	21.3	104			
1,4-Dichlorobenzene	38	5.0	100.0	0	37.9	15	89.8			
Phenol	78	20	200.0	0	39.0	17	61.1			
Pyrene	87	10	100.0	0	87.3	61	123			
Surr: 2-Fluorophenol	92		200.0		46.0	15	84.5			
Surr: Phenol-d5	70		200.0		35.2	15	67			
Surr: 2,4,6-Tribromophenol	130		200.0		63.0	15	108			
Surr: Nitrobenzene-d5	59		100.0		59.3	16.8	112			
Surr: 2-Fluorobiphenyl	51		100.0		50.8	15	101			
Surr: 4-Terphenyl-d14	92		100.0		92.1	34.4	134			

Sample ID: **lcsd-72347**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **72347**	RunNo: **93784**
Prep Date: **12/28/2022**	Analysis Date: **1/6/2023**	SeqNo: **3385643** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	65	10	100.0	0	64.6	21.3	104	17.8	45.3	
1,4-Dichlorobenzene	51	5.0	100.0	0	51.4	15	89.8	30.2	39.6	
Phenol	89	20	200.0	0	44.4	17	61.1	13.0	42.5	
Pyrene	94	10	100.0	0	93.9	61	123	7.24	11.8	
Surr: 2-Fluorophenol	110		200.0		53.5	15	84.5	0	0	
Surr: Phenol-d5	84		200.0		41.9	15	67	0	0	
Surr: 2,4,6-Tribromophenol	170		200.0		85.6	15	108	0	0	
Surr: Nitrobenzene-d5	75		100.0		74.6	16.8	112	0	0	
Surr: 2-Fluorobiphenyl	63		100.0		62.5	15	101	0	0	
Surr: 4-Terphenyl-d14	100		100.0		103	34.4	134	0	0	

Sample ID: **mb-72406**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **72406**	RunNo: **93814**
Prep Date: **1/3/2023**	Analysis Date: **1/9/2023**	SeqNo: **3386698** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorophenol	87		200.0		43.6	15	84.5			
Surr: Phenol-d5	70		200.0		35.0	15	67			
Surr: 2,4,6-Tribromophenol	120		200.0		58.8	15	108			
Surr: Nitrobenzene-d5	55		100.0		55.3	16.8	112			
Surr: 2-Fluorobiphenyl	46		100.0		45.9	15	101			
Surr: 4-Terphenyl-d14	89		100.0		88.6	34.4	134			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212E09**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **lcs-72406**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **72406**	RunNo: **93814**
Prep Date: **1/3/2023**	Analysis Date: **1/9/2023**	SeqNo: **3386699** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorophenol	94		200.0		46.8	15	84.5			
Surr: Phenol-d5	76		200.0		37.8	15	67			
Surr: 2,4,6-Tribromophenol	140		200.0		70.6	15	108			
Surr: Nitrobenzene-d5	64		100.0		64.0	16.8	112			
Surr: 2-Fluorobiphenyl	58		100.0		57.6	15	101			
Surr: 4-Terphenyl-d14	86		100.0		86.3	34.4	134			

Sample ID: **lcsd-72406**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **72406**	RunNo: **93814**
Prep Date: **1/3/2023**	Analysis Date: **1/9/2023**	SeqNo: **3386700** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorophenol	91		200.0		45.4	15	84.5	0	0	
Surr: Phenol-d5	72		200.0		35.9	15	67	0	0	
Surr: 2,4,6-Tribromophenol	140		200.0		72.1	15	108	0	0	
Surr: Nitrobenzene-d5	58		100.0		58.4	16.8	112	0	0	
Surr: 2-Fluorobiphenyl	49		100.0		49.1	15	101	0	0	
Surr: 4-Terphenyl-d14	86		100.0		86.2	34.4	134	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212E09**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb-72347**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **72347**	RunNo: **93725**
Prep Date: **12/28/2022**	Analysis Date: **1/4/2023**	SeqNo: **3383316** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.30								
1-Methylnaphthalene	ND	0.30								
2-Methylnaphthalene	ND	0.30								
Acenaphthene	ND	0.30								
Fluorene	ND	0.30								
Phenanthrene	ND	0.30								
Anthracene	ND	0.30								
Fluoranthene	ND	0.30								
Pyrene	ND	1.0								
Benz(a)anthracene	ND	0.30								
Chrysene	ND	0.30								
Benzo(b)fluoranthene	ND	0.40								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	64		100.0		63.9	15	108			
Surr: 2,4,6-Tribromophenol	100		200.0		51.3	15	112			
Surr: 2-Fluorobiphenyl	53		100.0		53.5	15	107			
Surr: 4-Terphenyl-d14	100		100.0		104	15	166			

Sample ID: **lcs-72347-lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **72347**	RunNo: **93725**
Prep Date: **12/28/2022**	Analysis Date: **1/4/2023**	SeqNo: **3383317** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.62	1.0	2.000	0	31.0	15	60.5			J
Naphthalene	0.56	0.30	2.000	0	28.0	15	78.3			
1-Methylnaphthalene	0.50	0.30	2.000	0	25.0	15	79.6			
2-Methylnaphthalene	0.48	0.30	2.000	0	24.0	15	78.6			
Acenaphthene	0.56	0.30	2.000	0	28.0	15	92			
Fluorene	0.78	0.30	2.000	0	39.0	15	96			
Phenanthrene	1.2	0.30	2.000	0	58.0	21	103			
Anthracene	1.4	0.30	2.000	0	69.0	21.1	106			
Fluoranthene	1.7	0.30	2.000	0	84.0	32.8	119			
Pyrene	1.5	1.0	2.000	0	74.0	34.1	110			
Benz(a)anthracene	1.9	0.30	2.000	0	95.0	32	132			
Chrysene	1.6	0.30	2.000	0	80.0	31.3	112			
Benzo(b)fluoranthene	1.7	0.40	2.000	0	85.0	34.1	119			
Indeno(1,2,3-cd)pyrene	2.4	0.30	2.000	0	121	24.7	152			
Surr: Nitrobenzene-d5	59		102.0		57.8	15	108			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212E09**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **lcs-72347-lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **72347**	RunNo: **93725**
Prep Date: **12/28/2022**	Analysis Date: **1/4/2023**	SeqNo: **3383317** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	97		204.0		47.7	15	112			
Surr: 2-Fluorobiphenyl	49		102.0		48.5	15	107			
Surr: 4-Terphenyl-d14	71		102.0		69.3	15	166			

Sample ID: **lcsd-72347-lf**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02**	Batch ID: **72347**	RunNo: **93725**
Prep Date: **12/28/2022**	Analysis Date: **1/4/2023**	SeqNo: **3383318** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.72	1.0	2.000	0	36.0	15	60.5	14.9	29.7	J
Naphthalene	0.76	0.30	2.000	0	38.0	15	78.3	30.3	31.7	
1-Methylnaphthalene	0.68	0.30	2.000	0	34.0	15	79.6	30.5	31.4	
2-Methylnaphthalene	0.64	0.30	2.000	0	32.0	15	78.6	28.6	30.5	
Acenaphthene	0.74	0.30	2.000	0	37.0	15	92	27.7	30.5	
Fluorene	0.98	0.30	2.000	0	49.0	15	96	22.7	25.1	
Phenanthrene	1.4	0.30	2.000	0	69.0	21	103	17.3	26.4	
Anthracene	1.6	0.30	2.000	0	78.0	21.1	106	12.2	14.4	
Fluoranthene	1.9	0.30	2.000	0	93.0	32.8	119	10.2	14.8	
Pyrene	1.6	1.0	2.000	0	82.0	34.1	110	10.3	19.2	
Benz(a)anthracene	2.1	0.30	2.000	0	104	32	132	9.05	29.3	
Chrysene	1.7	0.30	2.000	0	87.0	31.3	112	8.38	19	
Benzo(b)fluoranthene	1.8	0.40	2.000	0	91.0	34.1	119	6.82	31.6	
Indeno(1,2,3-cd)pyrene	2.5	0.30	2.000	0	126	24.7	152	4.05	21.3	
Surr: Nitrobenzene-d5	71		102.0		69.9	15	108	0	0	
Surr: 2,4,6-Tribromophenol	110		204.0		53.0	15	112	0	0	
Surr: 2-Fluorobiphenyl	61		102.0		59.4	15	107	0	0	
Surr: 4-Terphenyl-d14	82		102.0		80.4	15	166	0	0	

Sample ID: **mb-72406**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **72406**	RunNo: **93725**
Prep Date: **1/3/2023**	Analysis Date: **1/5/2023**	SeqNo: **3383328** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	54		100.0		54.1	15	108			
Surr: 2,4,6-Tribromophenol	100		200.0		49.9	15	112			
Surr: 2-Fluorobiphenyl	45		100.0		45.1	15	107			
Surr: 4-Terphenyl-d14	100		100.0		103	15	166			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212E09**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **lcs-72406-lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **72406**	RunNo: **93725**
Prep Date: **1/3/2023**	Analysis Date: **1/5/2023**	SeqNo: **3383329** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	67		102.0		65.7	15	108			
Surr: 2,4,6-Tribromophenol	110		204.0		55.4	15	112			
Surr: 2-Fluorobiphenyl	57		102.0		56.1	15	107			
Surr: 4-Terphenyl-d14	100		102.0		100	15	166			

Sample ID: **lcsd-72406-lf**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02**	Batch ID: **72406**	RunNo: **93725**
Prep Date: **1/3/2023**	Analysis Date: **1/5/2023**	SeqNo: **3383330** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	76		102.0		74.7	15	108	0	0	
Surr: 2,4,6-Tribromophenol	120		204.0		57.9	15	112	0	0	
Surr: 2-Fluorobiphenyl	65		102.0		64.1	15	107	0	0	
Surr: 4-Terphenyl-d14	97		102.0		95.1	15	166	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 3239 of 3808

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Marathon | Work Order Number: 2212E69 | RcptNo: 1

Received By: Cheyenne Cason 12/28/2022 8:00:00 AM

Completed By: Isaiah Ortiz 12/28/2022 8:12:42 AM

Reviewed By: TMC 12/28/22

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐ JN 12/28/22	
8. Was preservative added to bottles?	Yes ☑	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☑	No ☐	NA ☐
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: 16 (<2 or >12 unless noted)
Adjusted? yes
Checked by: JN 12/28/22

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: ____ Date: ____
By Whom: ____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: ____
Client Instructions: ____

16. Additional remarks: 6 uml of HNO3 (70%) was added to sample 006E for pH<2. JN 12/28/22.

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.6	Good	Yes			
2	1.4	Good	Yes			
3	0.2	Good	Yes			
4	1.6	Good	Yes			

Received by OCD: 4/21/2023 9:21:57 AM

Released to Imaging: 4/21/2023 9:40:26 AM

HALL ENVIRONMENTAL
ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Client: Marathon Gallup Refinery

Mailing Address: 92 Giant Crossing Road, Jamestown NM 87301

Phone #: 505-640-1823

email or Fax#:

QA/QC Package: X Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance ☐ NELAC ☐ Other

X EDD (Type)

X Standard Rush

Project Name: 2022 GW Sampling 4th Quarter

Project #: 697-080-001

Project Manager: Lesli Alexander

Sampler:

On Ice: ☑ Yes ☐ No

# of Coolers: 4

Cooler Temp(including CF): See Remarks

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2212E09	See Analyte	8260B VOC	8270C:SVOC	8270CSIM: PAH, 1,4 Dioxane	8015: TPH:GRO/DRO/MRO	E200.7: Metals	E200.7: Dissolved Metals	E245.1 Mercury	E504.1 EDB	E335.4: Cyanide Subbed	537.1:PFAS	SM 5210B: BOD	410.4: COD	
12/27	9:30		EB-12-27-22	13		001		X	X	X	X	X	X	X	X	X				
12/27	10:00		OW-50	13		002		X	X	X	X	X	X	X	X	X				
12/27	10:30		OW-52	13		003		X	X	X	X	X	X	X	X	X				
12/27	11:15		OW-29	13		004		X	X	X	X	X	X	X	X	X				
12/27	11:45		OW-54	13		005		X	X	X	X	X	X	X	X	X				
12/27	12:05		OW-66	13		006		X	X	X	X	X	X	X	X	X				
12/27	12:30		OW-55	13		007		X	X	X	X	X	X	X	X	X				
12/27	12:30		FB-12-27-22	3		008		X	X	X										
12/27	—		DUP-12-27-22	13		009		X	X	X	X	X	X	X	X	X				
			Trip Blank			010														

Date	Time	Relinquished by	Received by	Via	Date	Time
12/27	1:30	Allana Tapia	[signature]	[signature]	12/28/22	0802
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

4.6 - 0:46 1.6 - 0:46 (On Ice)
1.4 - 0:44
0.2 - 0:20.2

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

January 19, 2023

Emily Conkling

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX (505) 632-3911

RE: 2022 GW Sampling 4th Quarter OrderNo.: 2212E57

Dear Emily Conkling:

Hall Environmental Analysis Laboratory received 10 sample(s) on 12/29/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **2212E57**
Date: **1/19/2023**

CLIENT: Marathon
Project: 2022 GW Sampling 4th Quarter

Analytical Notes Regarding EPA Method 8015D DRO/MRO:
The method blank had a low level detection for DRO. Samples with detections are flagged with a "B". The laboratory control spike for DRO/MRO had an elevated recovery for OW-67, OW-68, OW60, Dup 12-28-22.

"S" flagged surrogates/spikes denote that the analyte recovery was outstide of the standard limits.

Analytical Notes Regarding EPA Method 8015 GRO:
The surrogate recoveries for OW-56, OW59, OW67, OW 68 and OW60 all had elevated surrogate recoveries because of matrix interference. A large peak was detected at the same retetion time as the surrogate.

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-28-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022 8:30:00 AM
Lab ID: 2212E57-001A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	1/4/2023 12:41:32 AM	R93693
Surr: BFB	87.4	0	70-130		%Rec	1	1/4/2023 12:41:32 AM	R93693
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	1.0	1.0		µg/L	1	1/4/2023 6:04:17 PM	R93727
Toluene	ND	1.0	1.0		µg/L	1	1/4/2023 6:04:17 PM	R93727
Ethylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 6:04:17 PM	R93727
Methyl tert-butyl ether (MTBE)	ND	1.0	1.0		µg/L	1	1/4/2023 6:04:17 PM	R93727
1,2,4-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 6:04:17 PM	R93727
1,3,5-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 6:04:17 PM	R93727
1,2-Dichloroethane (EDC)	ND	1.0	1.0		µg/L	1	1/4/2023 6:04:17 PM	R93727
Acetone	ND	10	10		µg/L	1	1/4/2023 6:04:17 PM	R93727
Bromomethane	ND	3.0	3.0		µg/L	1	1/4/2023 6:04:17 PM	R93727
2-Butanone	ND	10	10		µg/L	1	1/4/2023 6:04:17 PM	R93727
Carbon disulfide	ND	10	10		µg/L	1	1/4/2023 6:04:17 PM	R93727
Chlorobenzene	ND	1.0	1.0		µg/L	1	1/4/2023 6:04:17 PM	R93727
Chloroform	ND	1.0	1.0		µg/L	1	1/4/2023 6:04:17 PM	R93727
Chloromethane	ND	3.0	3.0		µg/L	1	1/4/2023 6:04:17 PM	R93727
cis-1,2-DCE	ND	1.0	1.0		µg/L	1	1/4/2023 6:04:17 PM	R93727
1,1-Dichloroethane	ND	1.0	1.0		µg/L	1	1/4/2023 6:04:17 PM	R93727
1,1-Dichloroethene	ND	1.0	1.0		µg/L	1	1/4/2023 6:04:17 PM	R93727
Isopropylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 6:04:17 PM	R93727
4-Isopropyltoluene	ND	1.0	1.0		µg/L	1	1/4/2023 6:04:17 PM	R93727
Methylene Chloride	ND	3.0	3.0		µg/L	1	1/4/2023 6:04:17 PM	R93727
n-Butylbenzene	ND	3.0	3.0		µg/L	1	1/4/2023 6:04:17 PM	R93727
n-Propylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 6:04:17 PM	R93727
sec-Butylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 6:04:17 PM	R93727
Styrene	ND	1.0	1.0		µg/L	1	1/4/2023 6:04:17 PM	R93727
Tetrachloroethene (PCE)	ND	1.0	1.0		µg/L	1	1/4/2023 6:04:17 PM	R93727
1,1,1-Trichloroethane	ND	1.0	1.0		µg/L	1	1/4/2023 6:04:17 PM	R93727
Trichloroethene (TCE)	ND	1.0	1.0		µg/L	1	1/4/2023 6:04:17 PM	R93727
Vinyl chloride	ND	1.0	1.0		µg/L	1	1/4/2023 6:04:17 PM	R93727
Xylenes, Total	ND	1.5	1.5		µg/L	1	1/4/2023 6:04:17 PM	R93727
Surr: 1,2-Dichloroethane-d4	96.8	0	70-130		%Rec	1	1/4/2023 6:04:17 PM	R93727
Surr: 4-Bromofluorobenzene	94.0	0	70-130		%Rec	1	1/4/2023 6:04:17 PM	R93727
Surr: Dibromofluoromethane	100	0	70-130		%Rec	1	1/4/2023 6:04:17 PM	R93727
Surr: Toluene-d8	93.7	0	70-130		%Rec	1	1/4/2023 6:04:17 PM	R93727

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Project: 2022 GW Sampling 4th Quarter
Lab ID: 2212E57-001B

Client Sample ID: EB-12-28-22
Collection Date: 12/28/2022 8:30:00 AM
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0093		µg/L	1	1/4/2023 10:55:42 AM	72430

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-28-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022 8:30:00 AM
Lab ID: 2212E57-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.025	0.016	0.064	JB	mg/L	1	1/5/2023 6:10:00 PM	72386
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	1/5/2023 6:10:00 PM	72386
Surr: DNOP	102	0	15.9-177		%Rec	1	1/5/2023 6:10:00 PM	72386
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	1/9/2023 4:19:47 PM	72406
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	1/9/2023 4:19:47 PM	72406
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	1/9/2023 4:19:47 PM	72406
Di-n-octyl phthalate	ND	12	20		µg/L	1	1/9/2023 4:19:47 PM	72406
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	1/9/2023 4:19:47 PM	72406
Diethyl phthalate	ND	6.0	10		µg/L	1	1/9/2023 4:19:47 PM	72406
Dimethyl phthalate	ND	6.0	10		µg/L	1	1/9/2023 4:19:47 PM	72406
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	1/9/2023 4:19:47 PM	72406
2,4-Dinitrophenol	ND	16	20		µg/L	1	1/9/2023 4:19:47 PM	72406
2-Methylphenol	ND	5.0	10		µg/L	1	1/9/2023 4:19:47 PM	72406
3+4-Methylphenol	ND	5.1	10		µg/L	1	1/9/2023 4:19:47 PM	72406
Phenol	ND	18	20		µg/L	1	1/9/2023 4:19:47 PM	72406
Pyridine	ND	14	40		µg/L	1	1/9/2023 4:19:47 PM	72406
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	1/9/2023 4:19:47 PM	72406
Surr: 2-Fluorophenol	37.4	0	15-84.5		%Rec	1	1/9/2023 4:19:47 PM	72406
Surr: Phenol-d5	28.1	0	15-67		%Rec	1	1/9/2023 4:19:47 PM	72406
Surr: 2,4,6-Tribromophenol	62.0	0	15-108		%Rec	1	1/9/2023 4:19:47 PM	72406
Surr: Nitrobenzene-d5	48.1	0	16.8-112		%Rec	1	1/9/2023 4:19:47 PM	72406
Surr: 2-Fluorobiphenyl	40.7	0	15-101		%Rec	1	1/9/2023 4:19:47 PM	72406
Surr: 4-Terphenyl-d14	87.4	0	34.4-134		%Rec	1	1/9/2023 4:19:47 PM	72406
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	1/5/2023 3:08:00 AM	72406
Naphthalene	ND	0.20	0.30		µg/L	1	1/5/2023 3:08:00 AM	72406
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	1/5/2023 3:08:00 AM	72406
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	1/5/2023 3:08:00 AM	72406
Acenaphthene	ND	0.14	0.30		µg/L	1	1/5/2023 3:08:00 AM	72406
Fluorene	ND	0.095	0.30		µg/L	1	1/5/2023 3:08:00 AM	72406
Phenanthrene	ND	0.16	0.30		µg/L	1	1/5/2023 3:08:00 AM	72406
Anthracene	ND	0.14	0.30		µg/L	1	1/5/2023 3:08:00 AM	72406
Fluoranthene	ND	0.14	0.30		µg/L	1	1/5/2023 3:08:00 AM	72406
Pyrene	ND	0.32	1.0		µg/L	1	1/5/2023 3:08:00 AM	72406
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	1/5/2023 3:08:00 AM	72406
Chrysene	ND	0.25	0.30		µg/L	1	1/5/2023 3:08:00 AM	72406
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	1/5/2023 3:08:00 AM	72406
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	1/5/2023 3:08:00 AM	72406

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-28-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022 8:30:00 AM
Lab ID: 2212E57-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	48.0	0	15-108		%Rec	1	1/5/2023 3:08:00 AM	72406
Surr: 2-Fluorobiphenyl	41.8	0	15-107		%Rec	1	1/5/2023 3:08:00 AM	72406
Surr: 4-Terphenyl-d14	104	0	15-166		%Rec	1	1/5/2023 3:08:00 AM	72406

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-28-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022 8:30:00 AM
Lab ID: 2212E57-001D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	ND	0.0016	0.0030		mg/L	1	1/10/2023 10:21:30 AM	72409
Beryllium	ND	0.00060	0.0020		mg/L	1	1/9/2023 10:02:05 AM	72409
Cadmium	ND	0.0018	0.0020		mg/L	1	1/9/2023 10:02:05 AM	72409
Chromium	ND	0.0020	0.0060		mg/L	1	1/9/2023 10:02:05 AM	72409
Cobalt	ND	0.0035	0.0060		mg/L	1	1/10/2023 10:21:30 AM	72409
Nickel	ND	0.0053	0.010		mg/L	1	1/9/2023 10:02:05 AM	72409
Silver	ND	0.0018	0.0050		mg/L	1	1/9/2023 10:02:05 AM	72409
Vanadium	ND	0.0035	0.050		mg/L	1	1/9/2023 10:02:05 AM	72409
Zinc	ND	0.0039	0.010		mg/L	1	1/9/2023 10:02:05 AM	72409
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	1/6/2023 9:48:21 AM	72409
Arsenic	ND	0.00022	0.0010		mg/L	1	1/6/2023 9:48:21 AM	72409
Lead	ND	0.00019	0.00050		mg/L	1	1/6/2023 9:48:21 AM	72409
Selenium	ND	0.00089	0.0010		mg/L	1	1/6/2023 9:48:21 AM	72409
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00018	0.000091	0.00020	J	mg/L	1	1/11/2023 5:32:55 PM	72553

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-28-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022 8:30:00 AM
Lab ID: 2212E57-001E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	ND	0.0011	0.0020		mg/L	1	1/5/2023 8:33:43 PM	B93766
Beryllium	ND	0.00059	0.0020		mg/L	1	1/5/2023 8:33:43 PM	B93766
Cadmium	ND	0.00098	0.0020		mg/L	1	1/5/2023 8:33:43 PM	B93766
Chromium	ND	0.0020	0.0060		mg/L	1	1/5/2023 8:33:43 PM	B93766
Cobalt	ND	0.0024	0.0060		mg/L	1	1/5/2023 8:33:43 PM	B93766
Nickel	ND	0.0033	0.010		mg/L	1	1/5/2023 8:33:43 PM	B93766
Silver	ND	0.0013	0.0050		mg/L	1	1/5/2023 8:33:43 PM	B93766
Vanadium	0.0020	0.0017	0.050	J	mg/L	1	1/5/2023 8:33:43 PM	B93766
Zinc	ND	0.0032	0.010		mg/L	1	1/5/2023 8:33:43 PM	B93766
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00045	0.0010		mg/L	1	1/10/2023 2:03:34 PM	B93855
Arsenic	ND	0.00057	0.0010		mg/L	1	1/10/2023 2:03:34 PM	B93855
Lead	ND	0.000099	0.00050		mg/L	1	1/10/2023 2:03:34 PM	B93855
Selenium	ND	0.00056	0.0010		mg/L	1	1/10/2023 2:03:34 PM	B93855
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.000091	0.000091	0.00020	J	mg/L	1	1/11/2023 7:11:06 PM	72553

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-13
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022 9:00:00 AM
Lab ID: 2212E57-002A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	0.098	0.0090	0.050		mg/L	1	1/4/2023 1:04:55 AM	R93693
Surr: BFB	86.8	0	70-130		%Rec	1	1/4/2023 1:04:55 AM	R93693
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	1.0	1.0		µg/L	1	1/4/2023 6:31:19 PM	R93727
Toluene	ND	1.0	1.0		µg/L	1	1/4/2023 6:31:19 PM	R93727
Ethylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 6:31:19 PM	R93727
Methyl tert-butyl ether (MTBE)	97	1.0	1.0		µg/L	1	1/4/2023 6:31:19 PM	R93727
1,2,4-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 6:31:19 PM	R93727
1,3,5-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 6:31:19 PM	R93727
1,2-Dichloroethane (EDC)	ND	1.0	1.0		µg/L	1	1/4/2023 6:31:19 PM	R93727
Acetone	ND	10	10		µg/L	1	1/4/2023 6:31:19 PM	R93727
Bromomethane	ND	3.0	3.0		µg/L	1	1/4/2023 6:31:19 PM	R93727
2-Butanone	ND	10	10		µg/L	1	1/4/2023 6:31:19 PM	R93727
Carbon disulfide	ND	10	10		µg/L	1	1/4/2023 6:31:19 PM	R93727
Chlorobenzene	ND	1.0	1.0		µg/L	1	1/4/2023 6:31:19 PM	R93727
Chloroform	ND	1.0	1.0		µg/L	1	1/4/2023 6:31:19 PM	R93727
Chloromethane	ND	3.0	3.0		µg/L	1	1/4/2023 6:31:19 PM	R93727
cis-1,2-DCE	ND	1.0	1.0		µg/L	1	1/4/2023 6:31:19 PM	R93727
1,1-Dichloroethane	ND	1.0	1.0		µg/L	1	1/4/2023 6:31:19 PM	R93727
1,1-Dichloroethene	ND	1.0	1.0		µg/L	1	1/4/2023 6:31:19 PM	R93727
Isopropylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 6:31:19 PM	R93727
4-Isopropyltoluene	ND	1.0	1.0		µg/L	1	1/4/2023 6:31:19 PM	R93727
Methylene Chloride	ND	3.0	3.0		µg/L	1	1/4/2023 6:31:19 PM	R93727
n-Butylbenzene	ND	3.0	3.0		µg/L	1	1/4/2023 6:31:19 PM	R93727
n-Propylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 6:31:19 PM	R93727
sec-Butylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 6:31:19 PM	R93727
Styrene	ND	1.0	1.0		µg/L	1	1/4/2023 6:31:19 PM	R93727
Tetrachloroethene (PCE)	ND	1.0	1.0		µg/L	1	1/4/2023 6:31:19 PM	R93727
1,1,1-Trichloroethane	ND	1.0	1.0		µg/L	1	1/4/2023 6:31:19 PM	R93727
Trichloroethene (TCE)	ND	1.0	1.0		µg/L	1	1/4/2023 6:31:19 PM	R93727
Vinyl chloride	ND	1.0	1.0		µg/L	1	1/4/2023 6:31:19 PM	R93727
Xylenes, Total	ND	1.5	1.5		µg/L	1	1/4/2023 6:31:19 PM	R93727
Surr: 1,2-Dichloroethane-d4	90.1	0	70-130		%Rec	1	1/4/2023 6:31:19 PM	R93727
Surr: 4-Bromofluorobenzene	96.5	0	70-130		%Rec	1	1/4/2023 6:31:19 PM	R93727
Surr: Dibromofluoromethane	91.7	0	70-130		%Rec	1	1/4/2023 6:31:19 PM	R93727
Surr: Toluene-d8	91.3	0	70-130		%Rec	1	1/4/2023 6:31:19 PM	R93727

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-13
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022 9:00:00 AM
Lab ID: 2212E57-002B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	1/4/2023 11:10:35 AM	72430

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-13
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022 9:00:00 AM
Lab ID: 2212E57-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.061	0.016	0.064	JB	mg/L	1	1/5/2023 6:33:29 PM	72386
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	1/5/2023 6:33:29 PM	72386
Surr: DNOP	110	0	15.9-177		%Rec	1	1/5/2023 6:33:29 PM	72386
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	1/9/2023 5:01:29 PM	72406
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	1/9/2023 5:01:29 PM	72406
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	1/9/2023 5:01:29 PM	72406
Di-n-octyl phthalate	ND	12	20		µg/L	1	1/9/2023 5:01:29 PM	72406
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	1/9/2023 5:01:29 PM	72406
Diethyl phthalate	ND	6.0	10		µg/L	1	1/9/2023 5:01:29 PM	72406
Dimethyl phthalate	ND	6.0	10		µg/L	1	1/9/2023 5:01:29 PM	72406
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	1/9/2023 5:01:29 PM	72406
2,4-Dinitrophenol	ND	16	20		µg/L	1	1/9/2023 5:01:29 PM	72406
2-Methylphenol	ND	5.0	10		µg/L	1	1/9/2023 5:01:29 PM	72406
3+4-Methylphenol	ND	5.1	10		µg/L	1	1/9/2023 5:01:29 PM	72406
Phenol	ND	18	20		µg/L	1	1/9/2023 5:01:29 PM	72406
Pyridine	ND	14	40		µg/L	1	1/9/2023 5:01:29 PM	72406
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	1/9/2023 5:01:29 PM	72406
Surr: 2-Fluorophenol	50.3	0	15-84.5		%Rec	1	1/9/2023 5:01:29 PM	72406
Surr: Phenol-d5	38.5	0	15-67		%Rec	1	1/9/2023 5:01:29 PM	72406
Surr: 2,4,6-Tribromophenol	69.1	0	15-108		%Rec	1	1/9/2023 5:01:29 PM	72406
Surr: Nitrobenzene-d5	66.3	0	16.8-112		%Rec	1	1/9/2023 5:01:29 PM	72406
Surr: 2-Fluorobiphenyl	57.1	0	15-101		%Rec	1	1/9/2023 5:01:29 PM	72406
Surr: 4-Terphenyl-d14	86.6	0	34.4-134		%Rec	1	1/9/2023 5:01:29 PM	72406
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	1/5/2023 3:51:00 AM	R93725
Naphthalene	ND	0.20	0.30		µg/L	1	1/5/2023 3:51:00 AM	R93725
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	1/5/2023 3:51:00 AM	R93725
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	1/5/2023 3:51:00 AM	R93725
Acenaphthene	ND	0.14	0.30		µg/L	1	1/5/2023 3:51:00 AM	R93725
Fluorene	ND	0.095	0.30		µg/L	1	1/5/2023 3:51:00 AM	R93725
Phenanthrene	ND	0.16	0.30		µg/L	1	1/5/2023 3:51:00 AM	R93725
Anthracene	ND	0.14	0.30		µg/L	1	1/5/2023 3:51:00 AM	R93725
Fluoranthene	ND	0.14	0.30		µg/L	1	1/5/2023 3:51:00 AM	R93725
Pyrene	ND	0.32	1.0		µg/L	1	1/5/2023 3:51:00 AM	R93725
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	1/5/2023 3:51:00 AM	R93725
Chrysene	ND	0.25	0.30		µg/L	1	1/5/2023 3:51:00 AM	R93725
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	1/5/2023 3:51:00 AM	R93725
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	1/5/2023 3:51:00 AM	R93725

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-13
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022 9:00:00 AM
Lab ID: 2212E57-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	71.4	0	15-108		%Rec	1	1/5/2023 3:51:00 AM	R93725
Surr: 2-Fluorobiphenyl	64.0	0	15-107		%Rec	1	1/5/2023 3:51:00 AM	R93725
Surr: 4-Terphenyl-d14	121	0	15-166		%Rec	1	1/5/2023 3:51:00 AM	R93725

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-13
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022 9:00:00 AM
Lab ID: 2212E57-002D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.019	0.0016	0.0030		mg/L	1	1/10/2023 10:31:21 AM	72409
Beryllium	ND	0.00060	0.0020		mg/L	1	1/9/2023 10:07:09 AM	72409
Cadmium	ND	0.0018	0.0020		mg/L	1	1/9/2023 10:07:09 AM	72409
Chromium	ND	0.0020	0.0060		mg/L	1	1/9/2023 10:07:09 AM	72409
Cobalt	ND	0.0035	0.0060		mg/L	1	1/10/2023 10:31:21 AM	72409
Nickel	ND	0.0053	0.010		mg/L	1	1/9/2023 10:07:09 AM	72409
Silver	ND	0.0018	0.0050		mg/L	1	1/9/2023 10:07:09 AM	72409
Vanadium	ND	0.0035	0.050		mg/L	1	1/9/2023 10:07:09 AM	72409
Zinc	ND	0.0039	0.010		mg/L	1	1/9/2023 10:07:09 AM	72409
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	1/6/2023 10:32:19 AM	72409
Arsenic	0.00061	0.00022	0.0010	J	mg/L	1	1/6/2023 10:32:19 AM	72409
Lead	ND	0.00019	0.00050		mg/L	1	1/6/2023 10:32:19 AM	72409
Selenium	ND	0.00089	0.0010		mg/L	1	1/6/2023 10:32:19 AM	72409
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00017	0.000091	0.00020	J	mg/L	1	1/11/2023 7:13:15 PM	72553

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-13
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022 9:00:00 AM
Lab ID: 2212E57-002E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.020	0.0011	0.0020		mg/L	1	1/5/2023 8:38:16 PM	C93766
Beryllium	ND	0.00059	0.0020		mg/L	1	1/5/2023 8:38:16 PM	C93766
Cadmium	ND	0.00098	0.0020		mg/L	1	1/5/2023 8:38:16 PM	C93766
Chromium	ND	0.0020	0.0060		mg/L	1	1/5/2023 8:38:16 PM	C93766
Cobalt	ND	0.0024	0.0060		mg/L	1	1/5/2023 8:38:16 PM	C93766
Nickel	ND	0.0033	0.010		mg/L	1	1/5/2023 8:38:16 PM	C93766
Silver	ND	0.0013	0.0050		mg/L	1	1/5/2023 8:38:16 PM	C93766
Vanadium	0.0040	0.0017	0.050	J	mg/L	1	1/5/2023 8:38:16 PM	C93766
Zinc	0.016	0.0032	0.010		mg/L	1	1/5/2023 8:38:16 PM	C93766
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00045	0.0010		mg/L	1	1/10/2023 2:19:32 PM	B93855
Arsenic	0.0013	0.00057	0.0010		mg/L	1	1/10/2023 2:19:32 PM	B93855
Lead	ND	0.000099	0.00050		mg/L	1	1/10/2023 2:19:32 PM	B93855
Selenium	0.0022	0.00056	0.0010		mg/L	1	1/10/2023 2:19:32 PM	B93855
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00020	0.000091	0.00020	J	mg/L	1	1/11/2023 7:15:23 PM	72553

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-56
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022 9:45:00 AM
Lab ID: 2212E57-003A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	0.22	0.0090	0.050		mg/L	1	1/4/2023 1:28:12 AM	R93693
Surr: BFB	551	0	70-130	S	%Rec	1	1/4/2023 1:28:12 AM	R93693
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	1.9	1.0	1.0		µg/L	1	1/4/2023 6:58:21 PM	R93727
Toluene	ND	1.0	1.0		µg/L	1	1/4/2023 6:58:21 PM	R93727
Ethylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 6:58:21 PM	R93727
Methyl tert-butyl ether (MTBE)	14	1.0	1.0		µg/L	1	1/4/2023 6:58:21 PM	R93727
1,2,4-Trimethylbenzene	1.4	1.0	1.0		µg/L	1	1/4/2023 6:58:21 PM	R93727
1,3,5-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 6:58:21 PM	R93727
1,2-Dichloroethane (EDC)	5.2	1.0	1.0		µg/L	1	1/4/2023 6:58:21 PM	R93727
Acetone	ND	10	10		µg/L	1	1/4/2023 6:58:21 PM	R93727
Bromomethane	ND	3.0	3.0		µg/L	1	1/4/2023 6:58:21 PM	R93727
2-Butanone	ND	10	10		µg/L	1	1/4/2023 6:58:21 PM	R93727
Carbon disulfide	ND	10	10		µg/L	1	1/4/2023 6:58:21 PM	R93727
Chlorobenzene	ND	1.0	1.0		µg/L	1	1/4/2023 6:58:21 PM	R93727
Chloroform	ND	1.0	1.0		µg/L	1	1/4/2023 6:58:21 PM	R93727
Chloromethane	ND	3.0	3.0		µg/L	1	1/4/2023 6:58:21 PM	R93727
cis-1,2-DCE	ND	1.0	1.0		µg/L	1	1/4/2023 6:58:21 PM	R93727
1,1-Dichloroethane	ND	1.0	1.0		µg/L	1	1/4/2023 6:58:21 PM	R93727
1,1-Dichloroethene	ND	1.0	1.0		µg/L	1	1/4/2023 6:58:21 PM	R93727
Isopropylbenzene	3.0	1.0	1.0		µg/L	1	1/4/2023 6:58:21 PM	R93727
4-Isopropyltoluene	ND	1.0	1.0		µg/L	1	1/4/2023 6:58:21 PM	R93727
Methylene Chloride	ND	3.0	3.0		µg/L	1	1/4/2023 6:58:21 PM	R93727
n-Butylbenzene	ND	3.0	3.0		µg/L	1	1/4/2023 6:58:21 PM	R93727
n-Propylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 6:58:21 PM	R93727
sec-Butylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 6:58:21 PM	R93727
Styrene	ND	1.0	1.0		µg/L	1	1/4/2023 6:58:21 PM	R93727
Tetrachloroethene (PCE)	ND	1.0	1.0		µg/L	1	1/4/2023 6:58:21 PM	R93727
1,1,1-Trichloroethane	ND	1.0	1.0		µg/L	1	1/4/2023 6:58:21 PM	R93727
Trichloroethene (TCE)	ND	1.0	1.0		µg/L	1	1/4/2023 6:58:21 PM	R93727
Vinyl chloride	ND	1.0	1.0		µg/L	1	1/4/2023 6:58:21 PM	R93727
Xylenes, Total	2.1	1.5	1.5		µg/L	1	1/4/2023 6:58:21 PM	R93727
Surr: 1,2-Dichloroethane-d4	124	0	70-130		%Rec	1	1/4/2023 6:58:21 PM	R93727
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	1	1/4/2023 6:58:21 PM	R93727
Surr: Dibromofluoromethane	144	0	70-130	S	%Rec	1	1/4/2023 6:58:21 PM	R93727
Surr: Toluene-d8	93.0	0	70-130		%Rec	1	1/4/2023 6:58:21 PM	R93727

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-56
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022 9:45:00 AM
Lab ID: 2212E57-003B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	1/4/2023 11:25:27 AM	72430

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-56
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022 9:45:00 AM
Lab ID: 2212E57-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.82	0.016	0.064	B	mg/L	1	1/5/2023 6:56:56 PM	72386
Motor Oil Range Organics (MRO)	0.15	0.052	0.080		mg/L	1	1/5/2023 6:56:56 PM	72386
Surr: DNOP	111	0	15.9-177		%Rec	1	1/5/2023 6:56:56 PM	72386
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	1/9/2023 5:42:53 PM	72406
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	1/9/2023 5:42:53 PM	72406
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	1/9/2023 5:42:53 PM	72406
Di-n-octyl phthalate	ND	12	20		µg/L	1	1/9/2023 5:42:53 PM	72406
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	1/9/2023 5:42:53 PM	72406
Diethyl phthalate	ND	6.0	10		µg/L	1	1/9/2023 5:42:53 PM	72406
Dimethyl phthalate	ND	6.0	10		µg/L	1	1/9/2023 5:42:53 PM	72406
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	1/9/2023 5:42:53 PM	72406
2,4-Dinitrophenol	ND	16	20		µg/L	1	1/9/2023 5:42:53 PM	72406
2-Methylphenol	ND	5.0	10		µg/L	1	1/9/2023 5:42:53 PM	72406
3+4-Methylphenol	ND	5.1	10		µg/L	1	1/9/2023 5:42:53 PM	72406
Phenol	ND	18	20		µg/L	1	1/9/2023 5:42:53 PM	72406
Pyridine	ND	14	40		µg/L	1	1/9/2023 5:42:53 PM	72406
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	1/9/2023 5:42:53 PM	72406
Surr: 2-Fluorophenol	49.7	0	15-84.5		%Rec	1	1/9/2023 5:42:53 PM	72406
Surr: Phenol-d5	39.5	0	15-67		%Rec	1	1/9/2023 5:42:53 PM	72406
Surr: 2,4,6-Tribromophenol	70.7	0	15-108		%Rec	1	1/9/2023 5:42:53 PM	72406
Surr: Nitrobenzene-d5	61.2	0	16.8-112		%Rec	1	1/9/2023 5:42:53 PM	72406
Surr: 2-Fluorobiphenyl	55.9	0	15-101		%Rec	1	1/9/2023 5:42:53 PM	72406
Surr: 4-Terphenyl-d14	87.5	0	34.4-134		%Rec	1	1/9/2023 5:42:53 PM	72406
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	0.22	0.11	1.0	J	µg/L	1	1/5/2023 4:35:00 AM	72406
Naphthalene	ND	0.20	0.30		µg/L	1	1/5/2023 4:35:00 AM	72406
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	1/5/2023 4:35:00 AM	72406
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	1/5/2023 4:35:00 AM	72406
Acenaphthene	ND	0.14	0.30		µg/L	1	1/5/2023 4:35:00 AM	72406
Fluorene	ND	0.095	0.30		µg/L	1	1/5/2023 4:35:00 AM	72406
Phenanthrene	ND	0.16	0.30		µg/L	1	1/5/2023 4:35:00 AM	72406
Anthracene	ND	0.14	0.30		µg/L	1	1/5/2023 4:35:00 AM	72406
Fluoranthene	ND	0.14	0.30		µg/L	1	1/5/2023 4:35:00 AM	72406
Pyrene	ND	0.32	1.0		µg/L	1	1/5/2023 4:35:00 AM	72406
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	1/5/2023 4:35:00 AM	72406
Chrysene	ND	0.25	0.30		µg/L	1	1/5/2023 4:35:00 AM	72406
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	1/5/2023 4:35:00 AM	72406
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	1/5/2023 4:35:00 AM	72406

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-56
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022 9:45:00 AM
Lab ID: 2212E57-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	59.9	0	15-108		%Rec	1	1/5/2023 4:35:00 AM	72406
Surr: 2-Fluorobiphenyl	50.8	0	15-107		%Rec	1	1/5/2023 4:35:00 AM	72406
Surr: 4-Terphenyl-d14	87.3	0	15-166		%Rec	1	1/5/2023 4:35:00 AM	72406

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-56
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022 9:45:00 AM
Lab ID: 2212E57-003D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.46	0.0016	0.0030		mg/L	1	1/10/2023 10:36:22 AM	72409
Beryllium	ND	0.00060	0.0020		mg/L	1	1/9/2023 10:19:48 AM	72409
Cadmium	ND	0.0018	0.0020		mg/L	1	1/9/2023 10:19:48 AM	72409
Chromium	ND	0.0020	0.0060		mg/L	1	1/9/2023 10:19:48 AM	72409
Cobalt	0.0073	0.0035	0.0060		mg/L	1	1/10/2023 10:36:22 AM	72409
Nickel	0.078	0.0053	0.010		mg/L	1	1/9/2023 10:19:48 AM	72409
Silver	ND	0.0018	0.0050		mg/L	1	1/9/2023 10:19:48 AM	72409
Vanadium	0.0057	0.0035	0.050	J	mg/L	1	1/9/2023 10:19:48 AM	72409
Zinc	0.011	0.0039	0.010		mg/L	1	1/9/2023 10:19:48 AM	72409
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	1/6/2023 9:53:15 AM	72409
Arsenic	0.0048	0.00022	0.0010		mg/L	1	1/6/2023 9:53:15 AM	72409
Lead	0.0015	0.00019	0.00050		mg/L	1	1/6/2023 9:53:15 AM	72409
Selenium	0.0023	0.00089	0.0010		mg/L	1	1/6/2023 9:53:15 AM	72409
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00029	0.000091	0.00020		mg/L	1	1/11/2023 7:17:32 PM	72553

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-56
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022 9:45:00 AM
Lab ID: 2212E57-003E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.39	0.0011	0.0020		mg/L	1	1/5/2023 8:55:35 PM	C93766
Beryllium	ND	0.00059	0.0020		mg/L	1	1/5/2023 8:55:35 PM	C93766
Cadmium	ND	0.00098	0.0020		mg/L	1	1/5/2023 8:55:35 PM	C93766
Chromium	ND	0.0020	0.0060		mg/L	1	1/5/2023 8:55:35 PM	C93766
Cobalt	ND	0.0024	0.0060		mg/L	1	1/5/2023 8:55:35 PM	C93766
Nickel	0.074	0.0033	0.010		mg/L	1	1/5/2023 8:55:35 PM	C93766
Silver	ND	0.0013	0.0050		mg/L	1	1/5/2023 8:55:35 PM	C93766
Vanadium	0.0034	0.0017	0.050	J	mg/L	1	1/5/2023 8:55:35 PM	C93766
Zinc	0.0033	0.0032	0.010	J	mg/L	1	1/5/2023 8:55:35 PM	C93766
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00045	0.0010		mg/L	1	1/10/2023 2:30:10 PM	B93855
Arsenic	0.0042	0.00057	0.0010		mg/L	1	1/10/2023 2:30:10 PM	B93855
Lead	0.00022	0.000099	0.00050	J	mg/L	1	1/10/2023 2:30:10 PM	B93855
Selenium	0.0075	0.00056	0.0010		mg/L	1	1/10/2023 2:30:10 PM	B93855
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00022	0.000091	0.00020		mg/L	1	1/11/2023 7:19:40 PM	72553

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-59
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022 10:10:00 AM
Lab ID: 2212E57-004A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	0.26	0.0090	0.050		mg/L	1	1/4/2023 1:51:29 AM	R93693
Surr: BFB	5320	0	70-130	S	%Rec	1	1/4/2023 1:51:29 AM	R93693
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	1.0	1.0		µg/L	1	1/4/2023 7:25:22 PM	R93727
Toluene	ND	1.0	1.0		µg/L	1	1/4/2023 7:25:22 PM	R93727
Ethylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 7:25:22 PM	R93727
Methyl tert-butyl ether (MTBE)	12	1.0	1.0		µg/L	1	1/4/2023 7:25:22 PM	R93727
1,2,4-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 7:25:22 PM	R93727
1,3,5-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 7:25:22 PM	R93727
1,2-Dichloroethane (EDC)	ND	1.0	1.0		µg/L	1	1/4/2023 7:25:22 PM	R93727
Acetone	ND	10	10		µg/L	1	1/4/2023 7:25:22 PM	R93727
Bromomethane	ND	3.0	3.0		µg/L	1	1/4/2023 7:25:22 PM	R93727
2-Butanone	ND	10	10		µg/L	1	1/4/2023 7:25:22 PM	R93727
Carbon disulfide	ND	10	10		µg/L	1	1/4/2023 7:25:22 PM	R93727
Chlorobenzene	ND	1.0	1.0		µg/L	1	1/4/2023 7:25:22 PM	R93727
Chloroform	ND	1.0	1.0		µg/L	1	1/4/2023 7:25:22 PM	R93727
Chloromethane	ND	3.0	3.0		µg/L	1	1/4/2023 7:25:22 PM	R93727
cis-1,2-DCE	ND	1.0	1.0		µg/L	1	1/4/2023 7:25:22 PM	R93727
1,1-Dichloroethane	ND	1.0	1.0		µg/L	1	1/4/2023 7:25:22 PM	R93727
1,1-Dichloroethene	ND	1.0	1.0		µg/L	1	1/4/2023 7:25:22 PM	R93727
Isopropylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 7:25:22 PM	R93727
4-Isopropyltoluene	ND	1.0	1.0		µg/L	1	1/4/2023 7:25:22 PM	R93727
Methylene Chloride	ND	3.0	3.0		µg/L	1	1/4/2023 7:25:22 PM	R93727
n-Butylbenzene	ND	3.0	3.0		µg/L	1	1/4/2023 7:25:22 PM	R93727
n-Propylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 7:25:22 PM	R93727
sec-Butylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 7:25:22 PM	R93727
Styrene	ND	1.0	1.0		µg/L	1	1/4/2023 7:25:22 PM	R93727
Tetrachloroethene (PCE)	ND	1.0	1.0		µg/L	1	1/4/2023 7:25:22 PM	R93727
1,1,1-Trichloroethane	ND	1.0	1.0		µg/L	1	1/4/2023 7:25:22 PM	R93727
Trichloroethene (TCE)	ND	1.0	1.0		µg/L	1	1/4/2023 7:25:22 PM	R93727
Vinyl chloride	ND	1.0	1.0		µg/L	1	1/4/2023 7:25:22 PM	R93727
Xylenes, Total	ND	1.5	1.5		µg/L	1	1/4/2023 7:25:22 PM	R93727
Surr: 1,2-Dichloroethane-d4	104	0	70-130		%Rec	1	1/4/2023 7:25:22 PM	R93727
Surr: 4-Bromofluorobenzene	97.5	0	70-130		%Rec	1	1/4/2023 7:25:22 PM	R93727
Surr: Dibromofluoromethane	110	0	70-130		%Rec	1	1/4/2023 7:25:22 PM	R93727
Surr: Toluene-d8	97.1	0	70-130		%Rec	1	1/4/2023 7:25:22 PM	R93727

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-59
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022 10:10:00 AM
Lab ID: 2212E57-004B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0026	0.0092		µg/L	1	1/4/2023 11:40:18 AM	72430

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-59
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022 10:10:00 AM
Lab ID: 2212E57-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.50	0.016	0.064	B	mg/L	1	1/5/2023 7:20:21 PM	72386
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	1/5/2023 7:20:21 PM	72386
Surr: DNOP	101	0	15.9-177		%Rec	1	1/5/2023 7:20:21 PM	72386
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	1/9/2023 6:24:12 PM	72406
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	1/9/2023 6:24:12 PM	72406
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	1/9/2023 6:24:12 PM	72406
Di-n-octyl phthalate	ND	12	20		µg/L	1	1/9/2023 6:24:12 PM	72406
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	1/9/2023 6:24:12 PM	72406
Diethyl phthalate	ND	6.0	10		µg/L	1	1/9/2023 6:24:12 PM	72406
Dimethyl phthalate	ND	6.0	10		µg/L	1	1/9/2023 6:24:12 PM	72406
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	1/9/2023 6:24:12 PM	72406
2,4-Dinitrophenol	ND	16	20		µg/L	1	1/9/2023 6:24:12 PM	72406
2-Methylphenol	ND	5.0	10		µg/L	1	1/9/2023 6:24:12 PM	72406
3+4-Methylphenol	ND	5.1	10		µg/L	1	1/9/2023 6:24:12 PM	72406
Phenol	ND	18	20		µg/L	1	1/9/2023 6:24:12 PM	72406
Pyridine	ND	14	40		µg/L	1	1/9/2023 6:24:12 PM	72406
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	1/9/2023 6:24:12 PM	72406
Surr: 2-Fluorophenol	9.65	0	15-84.5	S	%Rec	1	1/9/2023 6:24:12 PM	72406
Surr: Phenol-d5	26.4	0	15-67		%Rec	1	1/9/2023 6:24:12 PM	72406
Surr: 2,4,6-Tribromophenol	5.51	0	15-108	S	%Rec	1	1/9/2023 6:24:12 PM	72406
Surr: Nitrobenzene-d5	59.0	0	16.8-112		%Rec	1	1/9/2023 6:24:12 PM	72406
Surr: 2-Fluorobiphenyl	51.7	0	15-101		%Rec	1	1/9/2023 6:24:12 PM	72406
Surr: 4-Terphenyl-d14	86.1	0	34.4-134		%Rec	1	1/9/2023 6:24:12 PM	72406
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	5.4	0.11	1.0		µg/L	1	1/5/2023 5:19:00 AM	R93725
Naphthalene	ND	0.20	0.30		µg/L	1	1/5/2023 5:19:00 AM	R93725
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	1/5/2023 5:19:00 AM	R93725
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	1/5/2023 5:19:00 AM	R93725
Acenaphthene	ND	0.14	0.30		µg/L	1	1/5/2023 5:19:00 AM	R93725
Fluorene	ND	0.095	0.30		µg/L	1	1/5/2023 5:19:00 AM	R93725
Phenanthrene	ND	0.16	0.30		µg/L	1	1/5/2023 5:19:00 AM	R93725
Anthracene	ND	0.14	0.30		µg/L	1	1/5/2023 5:19:00 AM	R93725
Fluoranthene	0.14	0.14	0.30	J	µg/L	1	1/5/2023 5:19:00 AM	R93725
Pyrene	ND	0.32	1.0		µg/L	1	1/5/2023 5:19:00 AM	R93725
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	1/5/2023 5:19:00 AM	R93725
Chrysene	ND	0.25	0.30		µg/L	1	1/5/2023 5:19:00 AM	R93725
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	1/5/2023 5:19:00 AM	R93725
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	1/5/2023 5:19:00 AM	R93725

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-59
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022 10:10:00 AM
Lab ID: 2212E57-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	65.3	0	15-108		%Rec	1	1/5/2023 5:19:00 AM	R93725
Surr: 2-Fluorobiphenyl	57.1	0	15-107		%Rec	1	1/5/2023 5:19:00 AM	R93725
Surr: 4-Terphenyl-d14	107	0	15-166		%Rec	1	1/5/2023 5:19:00 AM	R93725

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-59
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022 10:10:00 AM
Lab ID: 2212E57-004D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.066	0.0016	0.0030		mg/L	1	1/10/2023 10:37:48 AM	72409
Beryllium	ND	0.00060	0.0020		mg/L	1	1/9/2023 10:21:14 AM	72409
Cadmium	ND	0.0018	0.0020		mg/L	1	1/9/2023 10:21:14 AM	72409
Chromium	ND	0.0020	0.0060		mg/L	1	1/9/2023 10:21:14 AM	72409
Cobalt	0.0087	0.0035	0.0060		mg/L	1	1/10/2023 10:37:48 AM	72409
Nickel	0.044	0.0053	0.010		mg/L	1	1/9/2023 10:21:14 AM	72409
Silver	ND	0.0018	0.0050		mg/L	1	1/9/2023 10:21:14 AM	72409
Vanadium	0.0094	0.0035	0.050	J	mg/L	1	1/9/2023 10:21:14 AM	72409
Zinc	0.011	0.0039	0.010		mg/L	1	1/9/2023 10:21:14 AM	72409
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	1/6/2023 10:34:47 AM	72409
Arsenic	0.0048	0.0011	0.0050	J	mg/L	5	1/6/2023 10:34:47 AM	72409
Lead	0.0013	0.00097	0.0025	J	mg/L	5	1/6/2023 10:34:47 AM	72409
Selenium	0.0069	0.0044	0.0050		mg/L	5	1/6/2023 10:34:47 AM	72409
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	1/11/2023 7:21:49 PM	72553

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-59
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022 10:10:00 AM
Lab ID: 2212E57-004E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.0079	0.0011	0.0020		mg/L	1	1/5/2023 9:13:27 PM	C93766
Beryllium	0.00072	0.00059	0.0020	J	mg/L	1	1/5/2023 9:13:27 PM	C93766
Cadmium	ND	0.00098	0.0020		mg/L	1	1/5/2023 9:13:27 PM	C93766
Chromium	ND	0.0020	0.0060		mg/L	1	1/5/2023 9:13:27 PM	C93766
Cobalt	ND	0.0024	0.0060		mg/L	1	1/5/2023 9:13:27 PM	C93766
Nickel	0.031	0.0033	0.010		mg/L	1	1/5/2023 9:13:27 PM	C93766
Silver	0.0028	0.0013	0.0050	J	mg/L	1	1/5/2023 9:13:27 PM	C93766
Vanadium	0.0061	0.0017	0.050	J	mg/L	1	1/5/2023 9:13:27 PM	C93766
Zinc	ND	0.0032	0.010		mg/L	1	1/5/2023 9:13:27 PM	C93766
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00045	0.0010		mg/L	1	1/10/2023 2:35:30 PM	B93855
Arsenic	0.0044	0.00057	0.0010		mg/L	1	1/10/2023 2:35:30 PM	B93855
Lead	ND	0.000099	0.00050		mg/L	1	1/10/2023 2:35:30 PM	B93855
Selenium	0.019	0.00056	0.0010		mg/L	1	1/10/2023 2:35:30 PM	B93855
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	1/11/2023 7:23:57 PM	72553

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-67
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022 10:30:00 AM
Lab ID: 2212E57-005A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	0.077	0.0090	0.050		mg/L	1	1/4/2023 2:14:44 AM	R93693
Surr: BFB	607	0	70-130	S	%Rec	1	1/4/2023 2:14:44 AM	R93693
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	1.0	1.0		µg/L	1	1/4/2023 7:52:20 PM	R93727
Toluene	ND	1.0	1.0		µg/L	1	1/4/2023 7:52:20 PM	R93727
Ethylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 7:52:20 PM	R93727
Methyl tert-butyl ether (MTBE)	26	1.0	1.0		µg/L	1	1/4/2023 7:52:20 PM	R93727
1,2,4-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 7:52:20 PM	R93727
1,3,5-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 7:52:20 PM	R93727
1,2-Dichloroethane (EDC)	ND	1.0	1.0		µg/L	1	1/4/2023 7:52:20 PM	R93727
Acetone	ND	10	10		µg/L	1	1/4/2023 7:52:20 PM	R93727
Bromomethane	ND	3.0	3.0		µg/L	1	1/4/2023 7:52:20 PM	R93727
2-Butanone	ND	10	10		µg/L	1	1/4/2023 7:52:20 PM	R93727
Carbon disulfide	ND	10	10		µg/L	1	1/4/2023 7:52:20 PM	R93727
Chlorobenzene	ND	1.0	1.0		µg/L	1	1/4/2023 7:52:20 PM	R93727
Chloroform	ND	1.0	1.0		µg/L	1	1/4/2023 7:52:20 PM	R93727
Chloromethane	ND	3.0	3.0		µg/L	1	1/4/2023 7:52:20 PM	R93727
cis-1,2-DCE	ND	1.0	1.0		µg/L	1	1/4/2023 7:52:20 PM	R93727
1,1-Dichloroethane	ND	1.0	1.0		µg/L	1	1/4/2023 7:52:20 PM	R93727
1,1-Dichloroethene	ND	1.0	1.0		µg/L	1	1/4/2023 7:52:20 PM	R93727
Isopropylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 7:52:20 PM	R93727
4-Isopropyltoluene	ND	1.0	1.0		µg/L	1	1/4/2023 7:52:20 PM	R93727
Methylene Chloride	ND	3.0	3.0		µg/L	1	1/4/2023 7:52:20 PM	R93727
n-Butylbenzene	ND	3.0	3.0		µg/L	1	1/4/2023 7:52:20 PM	R93727
n-Propylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 7:52:20 PM	R93727
sec-Butylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 7:52:20 PM	R93727
Styrene	ND	1.0	1.0		µg/L	1	1/4/2023 7:52:20 PM	R93727
Tetrachloroethene (PCE)	ND	1.0	1.0		µg/L	1	1/4/2023 7:52:20 PM	R93727
1,1,1-Trichloroethane	ND	1.0	1.0		µg/L	1	1/4/2023 7:52:20 PM	R93727
Trichloroethene (TCE)	ND	1.0	1.0		µg/L	1	1/4/2023 7:52:20 PM	R93727
Vinyl chloride	ND	1.0	1.0		µg/L	1	1/4/2023 7:52:20 PM	R93727
Xylenes, Total	ND	1.5	1.5		µg/L	1	1/4/2023 7:52:20 PM	R93727
Surr: 1,2-Dichloroethane-d4	108	0	70-130		%Rec	1	1/4/2023 7:52:20 PM	R93727
Surr: 4-Bromofluorobenzene	106	0	70-130		%Rec	1	1/4/2023 7:52:20 PM	R93727
Surr: Dibromofluoromethane	97.3	0	70-130		%Rec	1	1/4/2023 7:52:20 PM	R93727
Surr: Toluene-d8	89.9	0	70-130		%Rec	1	1/4/2023 7:52:20 PM	R93727

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-67
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022 10:30:00 AM
Lab ID: 2212E57-005B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	1/4/2023 11:55:13 AM	72430

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-67
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022 10:30:00 AM
Lab ID: 2212E57-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.67	0.016	0.064	BE	mg/L	1	1/9/2023 12:27:42 PM	72395
Motor Oil Range Organics (MRO)	0.060	0.052	0.080	J	mg/L	1	1/9/2023 12:27:42 PM	72395
Surr: DNOP	103	0	15.9-177		%Rec	1	1/9/2023 12:27:42 PM	72395
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	1/10/2023 10:16:55 AM	72406
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	1/10/2023 10:16:55 AM	72406
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	1/10/2023 10:16:55 AM	72406
Di-n-octyl phthalate	ND	12	20		µg/L	1	1/10/2023 10:16:55 AM	72406
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	1/10/2023 10:16:55 AM	72406
Diethyl phthalate	ND	6.0	10		µg/L	1	1/10/2023 10:16:55 AM	72406
Dimethyl phthalate	ND	6.0	10		µg/L	1	1/10/2023 10:16:55 AM	72406
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	1/10/2023 10:16:55 AM	72406
2,4-Dinitrophenol	ND	16	20		µg/L	1	1/10/2023 10:16:55 AM	72406
2-Methylphenol	ND	5.0	10		µg/L	1	1/10/2023 10:16:55 AM	72406
3+4-Methylphenol	ND	5.1	10		µg/L	1	1/10/2023 10:16:55 AM	72406
Phenol	ND	18	20		µg/L	1	1/10/2023 10:16:55 AM	72406
Pyridine	ND	14	40		µg/L	1	1/10/2023 10:16:55 AM	72406
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	1/10/2023 10:16:55 AM	72406
Surr: 2-Fluorophenol	1.92	0	15-84.5	S	%Rec	1	1/10/2023 10:16:55 AM	72406
Surr: Phenol-d5	6.32	0	15-67	S	%Rec	1	1/10/2023 10:16:55 AM	72406
Surr: 2,4,6-Tribromophenol	2.88	0	15-108	S	%Rec	1	1/10/2023 10:16:55 AM	72406
Surr: Nitrobenzene-d5	59.3	0	16.8-112		%Rec	1	1/10/2023 10:16:55 AM	72406
Surr: 2-Fluorobiphenyl	51.2	0	15-101		%Rec	1	1/10/2023 10:16:55 AM	72406
Surr: 4-Terphenyl-d14	87.2	0	34.4-134		%Rec	1	1/10/2023 10:16:55 AM	72406
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	4.1	0.11	1.0		µg/L	1	1/5/2023 6:03:00 AM	72406
Naphthalene	ND	0.20	0.30		µg/L	1	1/5/2023 6:03:00 AM	72406
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	1/5/2023 6:03:00 AM	72406
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	1/5/2023 6:03:00 AM	72406
Acenaphthene	ND	0.14	0.30		µg/L	1	1/5/2023 6:03:00 AM	72406
Fluorene	ND	0.095	0.30		µg/L	1	1/5/2023 6:03:00 AM	72406
Phenanthrene	ND	0.16	0.30		µg/L	1	1/5/2023 6:03:00 AM	72406
Anthracene	ND	0.14	0.30		µg/L	1	1/5/2023 6:03:00 AM	72406
Fluoranthene	ND	0.14	0.30		µg/L	1	1/5/2023 6:03:00 AM	72406
Pyrene	ND	0.32	1.0		µg/L	1	1/5/2023 6:03:00 AM	72406
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	1/5/2023 6:03:00 AM	72406
Chrysene	ND	0.25	0.30		µg/L	1	1/5/2023 6:03:00 AM	72406
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	1/5/2023 6:03:00 AM	72406
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	1/5/2023 6:03:00 AM	72406

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-67
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022 10:30:00 AM
Lab ID: 2212E57-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	63.5	0	15-108		%Rec	1	1/5/2023 6:03:00 AM	72406
Surr: 2-Fluorobiphenyl	53.6	0	15-107		%Rec	1	1/5/2023 6:03:00 AM	72406
Surr: 4-Terphenyl-d14	104	0	15-166		%Rec	1	1/5/2023 6:03:00 AM	72406

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-67
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022 10:30:00 AM
Lab ID: 2212E57-005D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.24	0.0016	0.0030		mg/L	1	1/11/2023 8:46:47 AM	72409
Beryllium	ND	0.00060	0.0020		mg/L	1	1/9/2023 10:22:42 AM	72409
Cadmium	ND	0.0018	0.0020		mg/L	1	1/9/2023 10:22:42 AM	72409
Chromium	ND	0.0020	0.0060		mg/L	1	1/9/2023 10:22:42 AM	72409
Cobalt	0.032	0.0035	0.0060		mg/L	1	1/11/2023 8:46:47 AM	72409
Nickel	0.12	0.0053	0.010	*	mg/L	1	1/9/2023 10:22:42 AM	72409
Silver	ND	0.0018	0.0050		mg/L	1	1/9/2023 10:22:42 AM	72409
Vanadium	0.016	0.0035	0.050	J	mg/L	1	1/9/2023 10:22:42 AM	72409
Zinc	0.0073	0.0039	0.010	J	mg/L	1	1/9/2023 10:22:42 AM	72409
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	1/6/2023 10:37:13 AM	72409
Arsenic	0.0034	0.0011	0.0050	J	mg/L	5	1/6/2023 10:37:13 AM	72409
Lead	0.0059	0.00097	0.0025		mg/L	5	1/6/2023 10:37:13 AM	72409
Selenium	0.0067	0.0044	0.0050		mg/L	5	1/6/2023 10:37:13 AM	72409
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	1/11/2023 7:26:06 PM	72553

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-67
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022 10:30:00 AM
Lab ID: 2212E57-005E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.042	0.0011	0.0020		mg/L	1	1/5/2023 9:20:09 PM	C93766
Beryllium	ND	0.00059	0.0020		mg/L	1	1/5/2023 9:20:09 PM	C93766
Cadmium	ND	0.00098	0.0020		mg/L	1	1/5/2023 9:20:09 PM	C93766
Chromium	ND	0.0020	0.0060		mg/L	1	1/5/2023 9:20:09 PM	C93766
Cobalt	ND	0.0024	0.0060		mg/L	1	1/5/2023 9:20:09 PM	C93766
Nickel	0.085	0.0033	0.010		mg/L	1	1/5/2023 9:20:09 PM	C93766
Silver	0.014	0.0013	0.0050		mg/L	1	1/5/2023 9:20:09 PM	C93766
Vanadium	0.0063	0.0017	0.050	J	mg/L	1	1/5/2023 9:20:09 PM	C93766
Zinc	ND	0.0032	0.010		mg/L	1	1/5/2023 9:20:09 PM	C93766
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0023	0.0050		mg/L	5	1/11/2023 1:10:17 PM	A93877
Arsenic	ND	0.0029	0.0050		mg/L	5	1/11/2023 1:10:17 PM	A93877
Lead	0.00053	0.000099	0.00050		mg/L	1	1/10/2023 2:40:49 PM	B93855
Selenium	0.031	0.0028	0.0050		mg/L	5	1/11/2023 1:10:17 PM	A93877
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	1/11/2023 7:28:16 PM	72553

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-68
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022 11:00:00 AM
Lab ID: 2212E57-006A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	0.85	0.0090	0.050		mg/L	1	1/4/2023 2:38:04 AM	R93693
Surr: BFB	2720	0	70-130	S	%Rec	1	1/4/2023 2:38:04 AM	R93693
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	6.8	1.0	1.0		µg/L	1	1/4/2023 8:19:17 PM	R93727
Toluene	ND	1.0	1.0		µg/L	1	1/4/2023 8:19:17 PM	R93727
Ethylbenzene	3.9	1.0	1.0		µg/L	1	1/4/2023 8:19:17 PM	R93727
Methyl tert-butyl ether (MTBE)	ND	1.0	1.0		µg/L	1	1/4/2023 8:19:17 PM	R93727
1,2,4-Trimethylbenzene	1.4	1.0	1.0		µg/L	1	1/4/2023 8:19:17 PM	R93727
1,3,5-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 8:19:17 PM	R93727
1,2-Dichloroethane (EDC)	ND	1.0	1.0		µg/L	1	1/4/2023 8:19:17 PM	R93727
Acetone	ND	10	10		µg/L	1	1/4/2023 8:19:17 PM	R93727
Bromomethane	ND	3.0	3.0		µg/L	1	1/4/2023 8:19:17 PM	R93727
2-Butanone	ND	10	10		µg/L	1	1/4/2023 8:19:17 PM	R93727
Carbon disulfide	ND	10	10		µg/L	1	1/4/2023 8:19:17 PM	R93727
Chlorobenzene	ND	1.0	1.0		µg/L	1	1/4/2023 8:19:17 PM	R93727
Chloroform	ND	1.0	1.0		µg/L	1	1/4/2023 8:19:17 PM	R93727
Chloromethane	ND	3.0	3.0		µg/L	1	1/4/2023 8:19:17 PM	R93727
cis-1,2-DCE	ND	1.0	1.0		µg/L	1	1/4/2023 8:19:17 PM	R93727
1,1-Dichloroethane	ND	1.0	1.0		µg/L	1	1/4/2023 8:19:17 PM	R93727
1,1-Dichloroethene	ND	1.0	1.0		µg/L	1	1/4/2023 8:19:17 PM	R93727
Isopropylbenzene	1.4	1.0	1.0		µg/L	1	1/4/2023 8:19:17 PM	R93727
4-Isopropyltoluene	ND	1.0	1.0		µg/L	1	1/4/2023 8:19:17 PM	R93727
Methylene Chloride	ND	3.0	3.0		µg/L	1	1/4/2023 8:19:17 PM	R93727
n-Butylbenzene	ND	3.0	3.0		µg/L	1	1/4/2023 8:19:17 PM	R93727
n-Propylbenzene	2.2	1.0	1.0		µg/L	1	1/4/2023 8:19:17 PM	R93727
sec-Butylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 8:19:17 PM	R93727
Styrene	ND	1.0	1.0		µg/L	1	1/4/2023 8:19:17 PM	R93727
Tetrachloroethene (PCE)	ND	1.0	1.0		µg/L	1	1/4/2023 8:19:17 PM	R93727
1,1,1-Trichloroethane	ND	1.0	1.0		µg/L	1	1/4/2023 8:19:17 PM	R93727
Trichloroethene (TCE)	ND	1.0	1.0		µg/L	1	1/4/2023 8:19:17 PM	R93727
Vinyl chloride	ND	1.0	1.0		µg/L	1	1/4/2023 8:19:17 PM	R93727
Xylenes, Total	4.0	1.5	1.5		µg/L	1	1/4/2023 8:19:17 PM	R93727
Surr: 1,2-Dichloroethane-d4	107	0	70-130		%Rec	1	1/4/2023 8:19:17 PM	R93727
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	1/4/2023 8:19:17 PM	R93727
Surr: Dibromofluoromethane	96.1	0	70-130		%Rec	1	1/4/2023 8:19:17 PM	R93727
Surr: Toluene-d8	97.0	0	70-130		%Rec	1	1/4/2023 8:19:17 PM	R93727

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-68
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022 11:00:00 AM
Lab ID: 2212E57-006B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	1/4/2023 12:10:04 PM	72430

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-68
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022 11:00:00 AM
Lab ID: 2212E57-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	1.7	0.016	0.064	BE	mg/L	1	1/9/2023 12:51:45 PM	72395
Motor Oil Range Organics (MRO)	0.12	0.052	0.080		mg/L	1	1/9/2023 12:51:45 PM	72395
Surr: DNOP	111	0	15.9-177		%Rec	1	1/9/2023 12:51:45 PM	72395
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	1/10/2023 10:58:05 AM	72406
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	1/10/2023 10:58:05 AM	72406
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	1/10/2023 10:58:05 AM	72406
Di-n-octyl phthalate	ND	12	20		µg/L	1	1/10/2023 10:58:05 AM	72406
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	1/10/2023 10:58:05 AM	72406
Diethyl phthalate	ND	6.0	10		µg/L	1	1/10/2023 10:58:05 AM	72406
Dimethyl phthalate	ND	6.0	10		µg/L	1	1/10/2023 10:58:05 AM	72406
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	1/10/2023 10:58:05 AM	72406
2,4-Dinitrophenol	ND	16	20		µg/L	1	1/10/2023 10:58:05 AM	72406
2-Methylphenol	ND	5.0	10		µg/L	1	1/10/2023 10:58:05 AM	72406
3+4-Methylphenol	ND	5.1	10		µg/L	1	1/10/2023 10:58:05 AM	72406
Phenol	ND	18	20		µg/L	1	1/10/2023 10:58:05 AM	72406
Pyridine	ND	14	40		µg/L	1	1/10/2023 10:58:05 AM	72406
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	1/10/2023 10:58:05 AM	72406
Surr: 2-Fluorophenol	3.37	0	15-84.5	S	%Rec	1	1/10/2023 10:58:05 AM	72406
Surr: Phenol-d5	10.7	0	15-67	S	%Rec	1	1/10/2023 10:58:05 AM	72406
Surr: 2,4,6-Tribromophenol	5.87	0	15-108	S	%Rec	1	1/10/2023 10:58:05 AM	72406
Surr: Nitrobenzene-d5	64.8	0	16.8-112		%Rec	1	1/10/2023 10:58:05 AM	72406
Surr: 2-Fluorobiphenyl	57.6	0	15-101		%Rec	1	1/10/2023 10:58:05 AM	72406
Surr: 4-Terphenyl-d14	88.3	0	34.4-134		%Rec	1	1/10/2023 10:58:05 AM	72406
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	4.1	0.11	1.0		µg/L	1	1/5/2023 6:47:00 AM	72406
Naphthalene	ND	0.20	0.30		µg/L	1	1/5/2023 6:47:00 AM	72406
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	1/5/2023 6:47:00 AM	72406
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	1/5/2023 6:47:00 AM	72406
Acenaphthene	0.46	0.14	0.30		µg/L	1	1/5/2023 6:47:00 AM	72406
Fluorene	0.12	0.095	0.30	J	µg/L	1	1/5/2023 6:47:00 AM	72406
Phenanthrene	ND	0.16	0.30		µg/L	1	1/5/2023 6:47:00 AM	72406
Anthracene	ND	0.14	0.30		µg/L	1	1/5/2023 6:47:00 AM	72406
Fluoranthene	ND	0.14	0.30		µg/L	1	1/5/2023 6:47:00 AM	72406
Pyrene	ND	0.32	1.0		µg/L	1	1/5/2023 6:47:00 AM	72406
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	1/5/2023 6:47:00 AM	72406
Chrysene	ND	0.25	0.30		µg/L	1	1/5/2023 6:47:00 AM	72406
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	1/5/2023 6:47:00 AM	72406
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	1/5/2023 6:47:00 AM	72406

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-68
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022 11:00:00 AM
Lab ID: 2212E57-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	52.3	0	15-108		%Rec	1	1/5/2023 6:47:00 AM	72406
Surr: 2-Fluorobiphenyl	42.5	0	15-107		%Rec	1	1/5/2023 6:47:00 AM	72406
Surr: 4-Terphenyl-d14	69.8	0	15-166		%Rec	1	1/5/2023 6:47:00 AM	72406

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-68
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022 11:00:00 AM
Lab ID: 2212E57-006D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.43	0.0016	0.0030		mg/L	1	1/10/2023 10:40:40 AM	72409
Beryllium	ND	0.00060	0.0020		mg/L	1	1/9/2023 10:24:09 AM	72409
Cadmium	ND	0.0018	0.0020		mg/L	1	1/9/2023 10:24:09 AM	72409
Chromium	0.0060	0.0020	0.0060	J	mg/L	1	1/9/2023 10:24:09 AM	72409
Cobalt	0.086	0.0035	0.0060		mg/L	1	1/10/2023 10:40:40 AM	72409
Nickel	0.20	0.0053	0.010	*	mg/L	1	1/9/2023 10:24:09 AM	72409
Silver	ND	0.0018	0.0050		mg/L	1	1/9/2023 10:24:09 AM	72409
Vanadium	0.045	0.0035	0.050	J	mg/L	1	1/9/2023 10:24:09 AM	72409
Zinc	0.045	0.0039	0.010		mg/L	1	1/9/2023 10:24:09 AM	72409
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	1/6/2023 10:39:40 AM	72409
Arsenic	0.019	0.0011	0.0050	*	mg/L	5	1/6/2023 10:39:40 AM	72409
Lead	0.013	0.00097	0.0025		mg/L	5	1/6/2023 10:39:40 AM	72409
Selenium	0.0065	0.0044	0.0050		mg/L	5	1/6/2023 10:39:40 AM	72409
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	1/11/2023 7:30:26 PM	72553

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-68
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022 11:00:00 AM
Lab ID: 2212E57-006E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.046	0.0011	0.0020		mg/L	1	1/5/2023 9:38:55 PM	C93766
Beryllium	ND	0.00059	0.0020		mg/L	1	1/5/2023 9:38:55 PM	C93766
Cadmium	ND	0.00098	0.0020		mg/L	1	1/5/2023 9:38:55 PM	C93766
Chromium	ND	0.0020	0.0060		mg/L	1	1/5/2023 9:38:55 PM	C93766
Cobalt	0.068	0.0024	0.0060		mg/L	1	1/17/2023 3:20:16 PM	A94009
Nickel	0.15	0.0033	0.010	*	mg/L	1	1/5/2023 9:38:55 PM	C93766
Silver	0.0065	0.0013	0.0050		mg/L	1	1/5/2023 9:38:55 PM	C93766
Vanadium	0.012	0.0017	0.050	J	mg/L	1	1/5/2023 9:38:55 PM	C93766
Zinc	0.0069	0.0032	0.010	J	mg/L	1	1/5/2023 9:38:55 PM	C93766
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00045	0.0010		mg/L	1	1/10/2023 2:46:09 PM	B93855
Arsenic	0.019	0.00057	0.0010	*	mg/L	1	1/10/2023 2:46:09 PM	B93855
Lead	0.0029	0.000099	0.00050		mg/L	1	1/10/2023 2:46:09 PM	B93855
Selenium	0.017	0.00056	0.0010		mg/L	1	1/10/2023 2:46:09 PM	B93855
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	1/11/2023 7:41:06 PM	72553

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-60
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022 11:30:00 AM
Lab ID: 2212E57-007A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	1/4/2023 3:01:20 AM	R93693
Surr: BFB	134	0	70-130	S	%Rec	1	1/4/2023 3:01:20 AM	R93693
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	1.0	1.0		µg/L	1	1/4/2023 8:46:17 PM	R93727
Toluene	ND	1.0	1.0		µg/L	1	1/4/2023 8:46:17 PM	R93727
Ethylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 8:46:17 PM	R93727
Methyl tert-butyl ether (MTBE)	ND	1.0	1.0		µg/L	1	1/4/2023 8:46:17 PM	R93727
1,2,4-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 8:46:17 PM	R93727
1,3,5-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 8:46:17 PM	R93727
1,2-Dichloroethane (EDC)	ND	1.0	1.0		µg/L	1	1/4/2023 8:46:17 PM	R93727
Acetone	ND	10	10		µg/L	1	1/4/2023 8:46:17 PM	R93727
Bromomethane	ND	3.0	3.0		µg/L	1	1/4/2023 8:46:17 PM	R93727
2-Butanone	ND	10	10		µg/L	1	1/4/2023 8:46:17 PM	R93727
Carbon disulfide	ND	10	10		µg/L	1	1/4/2023 8:46:17 PM	R93727
Chlorobenzene	ND	1.0	1.0		µg/L	1	1/4/2023 8:46:17 PM	R93727
Chloroform	ND	1.0	1.0		µg/L	1	1/4/2023 8:46:17 PM	R93727
Chloromethane	ND	3.0	3.0		µg/L	1	1/4/2023 8:46:17 PM	R93727
cis-1,2-DCE	ND	1.0	1.0		µg/L	1	1/4/2023 8:46:17 PM	R93727
1,1-Dichloroethane	ND	1.0	1.0		µg/L	1	1/4/2023 8:46:17 PM	R93727
1,1-Dichloroethene	ND	1.0	1.0		µg/L	1	1/4/2023 8:46:17 PM	R93727
Isopropylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 8:46:17 PM	R93727
4-Isopropyltoluene	ND	1.0	1.0		µg/L	1	1/4/2023 8:46:17 PM	R93727
Methylene Chloride	ND	3.0	3.0		µg/L	1	1/4/2023 8:46:17 PM	R93727
n-Butylbenzene	ND	3.0	3.0		µg/L	1	1/4/2023 8:46:17 PM	R93727
n-Propylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 8:46:17 PM	R93727
sec-Butylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 8:46:17 PM	R93727
Styrene	ND	1.0	1.0		µg/L	1	1/4/2023 8:46:17 PM	R93727
Tetrachloroethene (PCE)	ND	1.0	1.0		µg/L	1	1/4/2023 8:46:17 PM	R93727
1,1,1-Trichloroethane	ND	1.0	1.0		µg/L	1	1/4/2023 8:46:17 PM	R93727
Trichloroethene (TCE)	ND	1.0	1.0		µg/L	1	1/4/2023 8:46:17 PM	R93727
Vinyl chloride	ND	1.0	1.0		µg/L	1	1/4/2023 8:46:17 PM	R93727
Xylenes, Total	ND	1.5	1.5		µg/L	1	1/4/2023 8:46:17 PM	R93727
Surr: 1,2-Dichloroethane-d4	96.0	0	70-130		%Rec	1	1/4/2023 8:46:17 PM	R93727
Surr: 4-Bromofluorobenzene	110	0	70-130		%Rec	1	1/4/2023 8:46:17 PM	R93727
Surr: Dibromofluoromethane	95.8	0	70-130		%Rec	1	1/4/2023 8:46:17 PM	R93727
Surr: Toluene-d8	94.0	0	70-130		%Rec	1	1/4/2023 8:46:17 PM	R93727

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-60
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022 11:30:00 AM
Lab ID: 2212E57-007B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	1/4/2023 12:24:59 PM	72430

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-60
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022 11:30:00 AM
Lab ID: 2212E57-007C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.15	0.016	0.064	BE	mg/L	1	1/9/2023 1:15:34 PM	72395
Motor Oil Range Organics (MRO)	0.12	0.052	0.080		mg/L	1	1/9/2023 1:15:34 PM	72395
Surr: DNOP	116	0	15.9-177		%Rec	1	1/9/2023 1:15:34 PM	72395
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	1/10/2023 11:39:12 AM	72406
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	1/10/2023 11:39:12 AM	72406
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	1/10/2023 11:39:12 AM	72406
Di-n-octyl phthalate	ND	12	20		µg/L	1	1/10/2023 11:39:12 AM	72406
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	1/10/2023 11:39:12 AM	72406
Diethyl phthalate	ND	6.0	10		µg/L	1	1/10/2023 11:39:12 AM	72406
Dimethyl phthalate	ND	6.0	10		µg/L	1	1/10/2023 11:39:12 AM	72406
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	1/10/2023 11:39:12 AM	72406
2,4-Dinitrophenol	ND	16	20		µg/L	1	1/10/2023 11:39:12 AM	72406
2-Methylphenol	ND	5.0	10		µg/L	1	1/10/2023 11:39:12 AM	72406
3+4-Methylphenol	ND	5.1	10		µg/L	1	1/10/2023 11:39:12 AM	72406
Phenol	ND	18	20		µg/L	1	1/10/2023 11:39:12 AM	72406
Pyridine	ND	14	40		µg/L	1	1/10/2023 11:39:12 AM	72406
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	1/10/2023 11:39:12 AM	72406
Surr: 2-Fluorophenol	12.2	0	15-84.5	S	%Rec	1	1/10/2023 11:39:12 AM	72406
Surr: Phenol-d5	20.8	0	15-67		%Rec	1	1/10/2023 11:39:12 AM	72406
Surr: 2,4,6-Tribromophenol	7.99	0	15-108	S	%Rec	1	1/10/2023 11:39:12 AM	72406
Surr: Nitrobenzene-d5	40.8	0	16.8-112		%Rec	1	1/10/2023 11:39:12 AM	72406
Surr: 2-Fluorobiphenyl	33.2	0	15-101		%Rec	1	1/10/2023 11:39:12 AM	72406
Surr: 4-Terphenyl-d14	70.6	0	34.4-134		%Rec	1	1/10/2023 11:39:12 AM	72406
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	1/5/2023 7:32:00 AM	72406
Naphthalene	ND	0.20	0.30		µg/L	1	1/5/2023 7:32:00 AM	72406
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	1/5/2023 7:32:00 AM	72406
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	1/5/2023 7:32:00 AM	72406
Acenaphthene	ND	0.14	0.30		µg/L	1	1/5/2023 7:32:00 AM	72406
Fluorene	ND	0.095	0.30		µg/L	1	1/5/2023 7:32:00 AM	72406
Phenanthrene	ND	0.16	0.30		µg/L	1	1/5/2023 7:32:00 AM	72406
Anthracene	ND	0.14	0.30		µg/L	1	1/5/2023 7:32:00 AM	72406
Fluoranthene	ND	0.14	0.30		µg/L	1	1/5/2023 7:32:00 AM	72406
Pyrene	ND	0.32	1.0		µg/L	1	1/5/2023 7:32:00 AM	72406
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	1/5/2023 7:32:00 AM	72406
Chrysene	ND	0.25	0.30		µg/L	1	1/5/2023 7:32:00 AM	72406
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	1/5/2023 7:32:00 AM	72406
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	1/5/2023 7:32:00 AM	72406

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-60
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022 11:30:00 AM
Lab ID: 2212E57-007C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	33.4	0	15-108		%Rec	1	1/5/2023 7:32:00 AM	72406
Surr: 2-Fluorobiphenyl	27.1	0	15-107		%Rec	1	1/5/2023 7:32:00 AM	72406
Surr: 4-Terphenyl-d14	60.6	0	15-166		%Rec	1	1/5/2023 7:32:00 AM	72406

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-60
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022 11:30:00 AM
Lab ID: 2212E57-007D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.036	0.0016	0.0030		mg/L	1	1/10/2023 10:42:04 AM	72409
Beryllium	ND	0.00060	0.0020		mg/L	1	1/9/2023 10:25:34 AM	72409
Cadmium	ND	0.0018	0.0020		mg/L	1	1/9/2023 10:25:34 AM	72409
Chromium	ND	0.0020	0.0060		mg/L	1	1/9/2023 10:25:34 AM	72409
Cobalt	0.0054	0.0035	0.0060	J	mg/L	1	1/10/2023 10:42:04 AM	72409
Nickel	ND	0.0053	0.010		mg/L	1	1/9/2023 10:25:34 AM	72409
Silver	ND	0.0018	0.0050		mg/L	1	1/9/2023 10:25:34 AM	72409
Vanadium	0.011	0.0035	0.050	J	mg/L	1	1/9/2023 10:25:34 AM	72409
Zinc	0.012	0.0039	0.010		mg/L	1	1/9/2023 10:25:34 AM	72409
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	1/6/2023 10:03:01 AM	72409
Arsenic	0.0015	0.00022	0.0010		mg/L	1	1/6/2023 10:03:01 AM	72409
Lead	ND	0.00019	0.00050		mg/L	1	1/6/2023 10:03:01 AM	72409
Selenium	0.016	0.00089	0.0010		mg/L	1	1/6/2023 10:03:01 AM	72409
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	1/11/2023 7:43:16 PM	72553

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-60
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022 11:30:00 AM
Lab ID: 2212E57-007E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.028	0.0056	0.010		mg/L	5	1/5/2023 9:48:44 PM	C93766
Beryllium	ND	0.0029	0.010		mg/L	5	1/5/2023 9:48:44 PM	C93766
Cadmium	ND	0.0049	0.010		mg/L	5	1/5/2023 9:48:44 PM	C93766
Chromium	ND	0.0098	0.030		mg/L	5	1/5/2023 9:48:44 PM	C93766
Cobalt	ND	0.012	0.030		mg/L	5	1/5/2023 9:48:44 PM	C93766
Nickel	ND	0.016	0.050		mg/L	5	1/5/2023 9:48:44 PM	C93766
Silver	ND	0.0063	0.025		mg/L	5	1/5/2023 9:48:44 PM	C93766
Vanadium	0.015	0.0086	0.25	J	mg/L	5	1/5/2023 9:48:44 PM	C93766
Zinc	ND	0.016	0.050		mg/L	5	1/5/2023 9:48:44 PM	C93766
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00045	0.0010		mg/L	1	1/10/2023 3:02:11 PM	B93855
Arsenic	ND	0.00057	0.0010		mg/L	1	1/10/2023 3:02:11 PM	B93855
Lead	ND	0.000099	0.00050		mg/L	1	1/10/2023 3:02:11 PM	B93855
Selenium	0.034	0.00056	0.0010		mg/L	1	1/10/2023 3:02:11 PM	B93855
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	1/11/2023 7:45:25 PM	72553

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB-12-28-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022 11:30:00 AM
Lab ID: 2212E57-008A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	1.0	1.0		µg/L	1	1/4/2023 9:13:13 PM	R93727
Toluene	ND	1.0	1.0		µg/L	1	1/4/2023 9:13:13 PM	R93727
Ethylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 9:13:13 PM	R93727
Methyl tert-butyl ether (MTBE)	ND	1.0	1.0		µg/L	1	1/4/2023 9:13:13 PM	R93727
1,2,4-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 9:13:13 PM	R93727
1,3,5-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 9:13:13 PM	R93727
1,2-Dichloroethane (EDC)	ND	1.0	1.0		µg/L	1	1/4/2023 9:13:13 PM	R93727
Acetone	ND	10	10		µg/L	1	1/4/2023 9:13:13 PM	R93727
Bromomethane	ND	3.0	3.0		µg/L	1	1/4/2023 9:13:13 PM	R93727
2-Butanone	ND	10	10		µg/L	1	1/4/2023 9:13:13 PM	R93727
Carbon disulfide	ND	10	10		µg/L	1	1/4/2023 9:13:13 PM	R93727
Chlorobenzene	ND	1.0	1.0		µg/L	1	1/4/2023 9:13:13 PM	R93727
Chloroform	ND	1.0	1.0		µg/L	1	1/4/2023 9:13:13 PM	R93727
Chloromethane	ND	3.0	3.0		µg/L	1	1/4/2023 9:13:13 PM	R93727
cis-1,2-DCE	ND	1.0	1.0		µg/L	1	1/4/2023 9:13:13 PM	R93727
1,1-Dichloroethane	ND	1.0	1.0		µg/L	1	1/4/2023 9:13:13 PM	R93727
1,1-Dichloroethene	ND	1.0	1.0		µg/L	1	1/4/2023 9:13:13 PM	R93727
Isopropylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 9:13:13 PM	R93727
4-Isopropyltoluene	ND	1.0	1.0		µg/L	1	1/4/2023 9:13:13 PM	R93727
Methylene Chloride	ND	3.0	3.0		µg/L	1	1/4/2023 9:13:13 PM	R93727
n-Butylbenzene	ND	3.0	3.0		µg/L	1	1/4/2023 9:13:13 PM	R93727
n-Propylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 9:13:13 PM	R93727
sec-Butylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 9:13:13 PM	R93727
Styrene	ND	1.0	1.0		µg/L	1	1/4/2023 9:13:13 PM	R93727
Tetrachloroethene (PCE)	ND	1.0	1.0		µg/L	1	1/4/2023 9:13:13 PM	R93727
1,1,1-Trichloroethane	ND	1.0	1.0		µg/L	1	1/4/2023 9:13:13 PM	R93727
Trichloroethene (TCE)	ND	1.0	1.0		µg/L	1	1/4/2023 9:13:13 PM	R93727
Vinyl chloride	ND	1.0	1.0		µg/L	1	1/4/2023 9:13:13 PM	R93727
Xylenes, Total	ND	1.5	1.5		µg/L	1	1/4/2023 9:13:13 PM	R93727
Surr: 1,2-Dichloroethane-d4	89.6	0	70-130		%Rec	1	1/4/2023 9:13:13 PM	R93727
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	1/4/2023 9:13:13 PM	R93727
Surr: Dibromofluoromethane	96.0	0	70-130		%Rec	1	1/4/2023 9:13:13 PM	R93727
Surr: Toluene-d8	95.3	0	70-130		%Rec	1	1/4/2023 9:13:13 PM	R93727

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Dup-12-28-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022
Lab ID: 2212E57-009A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	0.094	0.0090	0.050		mg/L	1	1/4/2023 3:24:37 AM	R93693
Surr: BFB	87.5	0	70-130		%Rec	1	1/4/2023 3:24:37 AM	R93693
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	1.0	1.0		µg/L	1	1/4/2023 9:40:08 PM	R93727
Toluene	ND	1.0	1.0		µg/L	1	1/4/2023 9:40:08 PM	R93727
Ethylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 9:40:08 PM	R93727
Methyl tert-butyl ether (MTBE)	99	1.0	1.0		µg/L	1	1/4/2023 9:40:08 PM	R93727
1,2,4-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 9:40:08 PM	R93727
1,3,5-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 9:40:08 PM	R93727
1,2-Dichloroethane (EDC)	ND	1.0	1.0		µg/L	1	1/4/2023 9:40:08 PM	R93727
Acetone	ND	10	10		µg/L	1	1/4/2023 9:40:08 PM	R93727
Bromomethane	ND	3.0	3.0		µg/L	1	1/4/2023 9:40:08 PM	R93727
2-Butanone	ND	10	10		µg/L	1	1/4/2023 9:40:08 PM	R93727
Carbon disulfide	ND	10	10		µg/L	1	1/4/2023 9:40:08 PM	R93727
Chlorobenzene	ND	1.0	1.0		µg/L	1	1/4/2023 9:40:08 PM	R93727
Chloroform	ND	1.0	1.0		µg/L	1	1/4/2023 9:40:08 PM	R93727
Chloromethane	ND	3.0	3.0		µg/L	1	1/4/2023 9:40:08 PM	R93727
cis-1,2-DCE	ND	1.0	1.0		µg/L	1	1/4/2023 9:40:08 PM	R93727
1,1-Dichloroethane	ND	1.0	1.0		µg/L	1	1/4/2023 9:40:08 PM	R93727
1,1-Dichloroethene	ND	1.0	1.0		µg/L	1	1/4/2023 9:40:08 PM	R93727
Isopropylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 9:40:08 PM	R93727
4-Isopropyltoluene	ND	1.0	1.0		µg/L	1	1/4/2023 9:40:08 PM	R93727
Methylene Chloride	ND	3.0	3.0		µg/L	1	1/4/2023 9:40:08 PM	R93727
n-Butylbenzene	ND	3.0	3.0		µg/L	1	1/4/2023 9:40:08 PM	R93727
n-Propylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 9:40:08 PM	R93727
sec-Butylbenzene	ND	1.0	1.0		µg/L	1	1/4/2023 9:40:08 PM	R93727
Styrene	ND	1.0	1.0		µg/L	1	1/4/2023 9:40:08 PM	R93727
Tetrachloroethene (PCE)	ND	1.0	1.0		µg/L	1	1/4/2023 9:40:08 PM	R93727
1,1,1-Trichloroethane	ND	1.0	1.0		µg/L	1	1/4/2023 9:40:08 PM	R93727
Trichloroethene (TCE)	ND	1.0	1.0		µg/L	1	1/4/2023 9:40:08 PM	R93727
Vinyl chloride	ND	1.0	1.0		µg/L	1	1/4/2023 9:40:08 PM	R93727
Xylenes, Total	ND	1.5	1.5		µg/L	1	1/4/2023 9:40:08 PM	R93727
Surr: 1,2-Dichloroethane-d4	109	0	70-130		%Rec	1	1/4/2023 9:40:08 PM	R93727
Surr: 4-Bromofluorobenzene	97.2	0	70-130		%Rec	1	1/4/2023 9:40:08 PM	R93727
Surr: Dibromofluoromethane	100	0	70-130		%Rec	1	1/4/2023 9:40:08 PM	R93727
Surr: Toluene-d8	86.5	0	70-130		%Rec	1	1/4/2023 9:40:08 PM	R93727

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Dup-12-28-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022
Lab ID: 2212E57-009B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	1/4/2023 12:39:44 PM	72430

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Dup-12-28-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022
Lab ID: 2212E57-009C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.059	0.016	0.064	JBE	mg/L	1	1/9/2023 1:39:24 PM	72395
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	1/9/2023 1:39:24 PM	72395
Surr: DNOP	110	0	15.9-177		%Rec	1	1/9/2023 1:39:24 PM	72395
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	1/10/2023 12:20:33 PM	72406
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	1/10/2023 12:20:33 PM	72406
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	1/10/2023 12:20:33 PM	72406
Di-n-octyl phthalate	ND	12	20		µg/L	1	1/10/2023 12:20:33 PM	72406
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	1/10/2023 12:20:33 PM	72406
Diethyl phthalate	ND	6.0	10		µg/L	1	1/10/2023 12:20:33 PM	72406
Dimethyl phthalate	ND	6.0	10		µg/L	1	1/10/2023 12:20:33 PM	72406
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	1/10/2023 12:20:33 PM	72406
2,4-Dinitrophenol	ND	16	20		µg/L	1	1/10/2023 12:20:33 PM	72406
2-Methylphenol	ND	5.0	10		µg/L	1	1/10/2023 12:20:33 PM	72406
3+4-Methylphenol	ND	5.1	10		µg/L	1	1/10/2023 12:20:33 PM	72406
Phenol	ND	18	20		µg/L	1	1/10/2023 12:20:33 PM	72406
Pyridine	ND	14	40		µg/L	1	1/10/2023 12:20:33 PM	72406
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	1/10/2023 12:20:33 PM	72406
Surr: 2-Fluorophenol	36.9	0	15-84.5		%Rec	1	1/10/2023 12:20:33 PM	72406
Surr: Phenol-d5	29.9	0	15-67		%Rec	1	1/10/2023 12:20:33 PM	72406
Surr: 2,4,6-Tribromophenol	62.6	0	15-108		%Rec	1	1/10/2023 12:20:33 PM	72406
Surr: Nitrobenzene-d5	50.7	0	16.8-112		%Rec	1	1/10/2023 12:20:33 PM	72406
Surr: 2-Fluorobiphenyl	42.3	0	15-101		%Rec	1	1/10/2023 12:20:33 PM	72406
Surr: 4-Terphenyl-d14	88.1	0	34.4-134		%Rec	1	1/10/2023 12:20:33 PM	72406
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	1/5/2023 8:16:00 AM	72406
Naphthalene	ND	0.20	0.30		µg/L	1	1/5/2023 8:16:00 AM	72406
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	1/5/2023 8:16:00 AM	72406
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	1/5/2023 8:16:00 AM	72406
Acenaphthene	ND	0.14	0.30		µg/L	1	1/5/2023 8:16:00 AM	72406
Fluorene	ND	0.095	0.30		µg/L	1	1/5/2023 8:16:00 AM	72406
Phenanthrene	ND	0.16	0.30		µg/L	1	1/5/2023 8:16:00 AM	72406
Anthracene	ND	0.14	0.30		µg/L	1	1/5/2023 8:16:00 AM	72406
Fluoranthene	ND	0.14	0.30		µg/L	1	1/5/2023 8:16:00 AM	72406
Pyrene	ND	0.32	1.0		µg/L	1	1/5/2023 8:16:00 AM	72406
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	1/5/2023 8:16:00 AM	72406
Chrysene	ND	0.25	0.30		µg/L	1	1/5/2023 8:16:00 AM	72406
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	1/5/2023 8:16:00 AM	72406
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	1/5/2023 8:16:00 AM	72406

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Dup-12-28-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022
Lab ID: 2212E57-009C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	45.5	0	15-108		%Rec	1	1/5/2023 8:16:00 AM	72406
Surr: 2-Fluorobiphenyl	37.1	0	15-107		%Rec	1	1/5/2023 8:16:00 AM	72406
Surr: 4-Terphenyl-d14	83.5	0	15-166		%Rec	1	1/5/2023 8:16:00 AM	72406

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Dup-12-28-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022
Lab ID: 2212E57-009D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.019	0.0016	0.0030		mg/L	1	1/10/2023 10:43:43 AM	72409
Beryllium	ND	0.00060	0.0020		mg/L	1	1/9/2023 10:27:12 AM	72409
Cadmium	ND	0.0018	0.0020		mg/L	1	1/9/2023 10:27:12 AM	72409
Chromium	ND	0.0020	0.0060		mg/L	1	1/9/2023 10:27:12 AM	72409
Cobalt	ND	0.0035	0.0060		mg/L	1	1/10/2023 10:43:43 AM	72409
Nickel	ND	0.0053	0.010		mg/L	1	1/9/2023 10:27:12 AM	72409
Silver	ND	0.0018	0.0050		mg/L	1	1/9/2023 10:27:12 AM	72409
Vanadium	ND	0.0035	0.050		mg/L	1	1/9/2023 10:27:12 AM	72409
Zinc	0.0068	0.0039	0.010	J	mg/L	1	1/9/2023 10:27:12 AM	72409
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	1/6/2023 10:05:27 AM	72409
Arsenic	0.00067	0.00022	0.0010	J	mg/L	1	1/6/2023 10:05:27 AM	72409
Lead	ND	0.00019	0.00050		mg/L	1	1/6/2023 10:05:27 AM	72409
Selenium	0.0011	0.00089	0.0010		mg/L	1	1/6/2023 10:05:27 AM	72409
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	1/11/2023 7:47:33 PM	72553

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Dup-12-28-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/28/2022
Lab ID: 2212E57-009E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.022	0.011	0.020		mg/L	10	1/9/2023 11:53:28 AM	A93838
Beryllium	ND	0.0059	0.020		mg/L	10	1/9/2023 11:53:28 AM	A93838
Cadmium	ND	0.0098	0.020		mg/L	10	1/9/2023 11:53:28 AM	A93838
Chromium	ND	0.020	0.060		mg/L	10	1/9/2023 11:53:28 AM	A93838
Cobalt	ND	0.024	0.060		mg/L	10	1/9/2023 11:53:28 AM	A93838
Nickel	ND	0.033	0.10		mg/L	10	1/9/2023 11:53:28 AM	A93838
Silver	ND	0.013	0.050		mg/L	10	1/9/2023 11:53:28 AM	A93838
Vanadium	ND	0.017	0.50		mg/L	10	1/9/2023 11:53:28 AM	A93838
Zinc	ND	0.032	0.10		mg/L	10	1/9/2023 11:53:28 AM	A93838
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00045	0.0010		mg/L	1	1/10/2023 3:07:30 PM	B93855
Arsenic	0.0010	0.00057	0.0010		mg/L	1	1/10/2023 3:07:30 PM	B93855
Lead	ND	0.000099	0.00050		mg/L	1	1/10/2023 3:07:30 PM	B93855
Selenium	0.0022	0.00056	0.0010		mg/L	1	1/10/2023 3:07:30 PM	B93855
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	1/11/2023 7:53:59 PM	72553

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 4th Quarter
Collection Date:
Lab ID: 2212E57-010A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	1.0	1.0		µg/L	1	1/5/2023 1:49:47 PM	R93747
Toluene	ND	1.0	1.0		µg/L	1	1/5/2023 1:49:47 PM	R93747
Ethylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 1:49:47 PM	R93747
Methyl tert-butyl ether (MTBE)	ND	1.0	1.0		µg/L	1	1/5/2023 1:49:47 PM	R93747
1,2,4-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 1:49:47 PM	R93747
1,3,5-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 1:49:47 PM	R93747
1,2-Dichloroethane (EDC)	ND	1.0	1.0		µg/L	1	1/5/2023 1:49:47 PM	R93747
Acetone	ND	10	10		µg/L	1	1/5/2023 1:49:47 PM	R93747
Bromomethane	ND	3.0	3.0		µg/L	1	1/5/2023 1:49:47 PM	R93747
2-Butanone	ND	10	10		µg/L	1	1/5/2023 1:49:47 PM	R93747
Carbon disulfide	ND	10	10		µg/L	1	1/5/2023 1:49:47 PM	R93747
Chlorobenzene	ND	1.0	1.0		µg/L	1	1/5/2023 1:49:47 PM	R93747
Chloroform	ND	1.0	1.0		µg/L	1	1/5/2023 1:49:47 PM	R93747
Chloromethane	ND	3.0	3.0		µg/L	1	1/5/2023 1:49:47 PM	R93747
cis-1,2-DCE	ND	1.0	1.0		µg/L	1	1/5/2023 1:49:47 PM	R93747
1,1-Dichloroethane	ND	1.0	1.0		µg/L	1	1/5/2023 1:49:47 PM	R93747
1,1-Dichloroethene	ND	1.0	1.0		µg/L	1	1/5/2023 1:49:47 PM	R93747
Isopropylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 1:49:47 PM	R93747
4-Isopropyltoluene	ND	1.0	1.0		µg/L	1	1/5/2023 1:49:47 PM	R93747
Methylene Chloride	ND	3.0	3.0		µg/L	1	1/5/2023 1:49:47 PM	R93747
n-Butylbenzene	ND	3.0	3.0		µg/L	1	1/5/2023 1:49:47 PM	R93747
n-Propylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 1:49:47 PM	R93747
sec-Butylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 1:49:47 PM	R93747
Styrene	ND	1.0	1.0		µg/L	1	1/5/2023 1:49:47 PM	R93747
Tetrachloroethene (PCE)	ND	1.0	1.0		µg/L	1	1/5/2023 1:49:47 PM	R93747
1,1,1-Trichloroethane	ND	1.0	1.0		µg/L	1	1/5/2023 1:49:47 PM	R93747
Trichloroethene (TCE)	ND	1.0	1.0		µg/L	1	1/5/2023 1:49:47 PM	R93747
Vinyl chloride	ND	1.0	1.0		µg/L	1	1/5/2023 1:49:47 PM	R93747
Xylenes, Total	ND	1.5	1.5		µg/L	1	1/5/2023 1:49:47 PM	R93747
Surr: 1,2-Dichloroethane-d4	103	0	70-130		%Rec	1	1/5/2023 1:49:47 PM	R93747
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	1/5/2023 1:49:47 PM	R93747
Surr: Dibromofluoromethane	94.1	0	70-130		%Rec	1	1/5/2023 1:49:47 PM	R93747
Surr: Toluene-d8	96.1	0	70-130		%Rec	1	1/5/2023 1:49:47 PM	R93747

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212E57**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 4th Quarter
Collection Date:
Lab ID: 2212E57-010B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0096		µg/L	1	1/4/2023 1:09:25 PM	72430

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

ANALYTICAL REPORT

January 03, 2023

Hall Environmental Analysis Laboratory

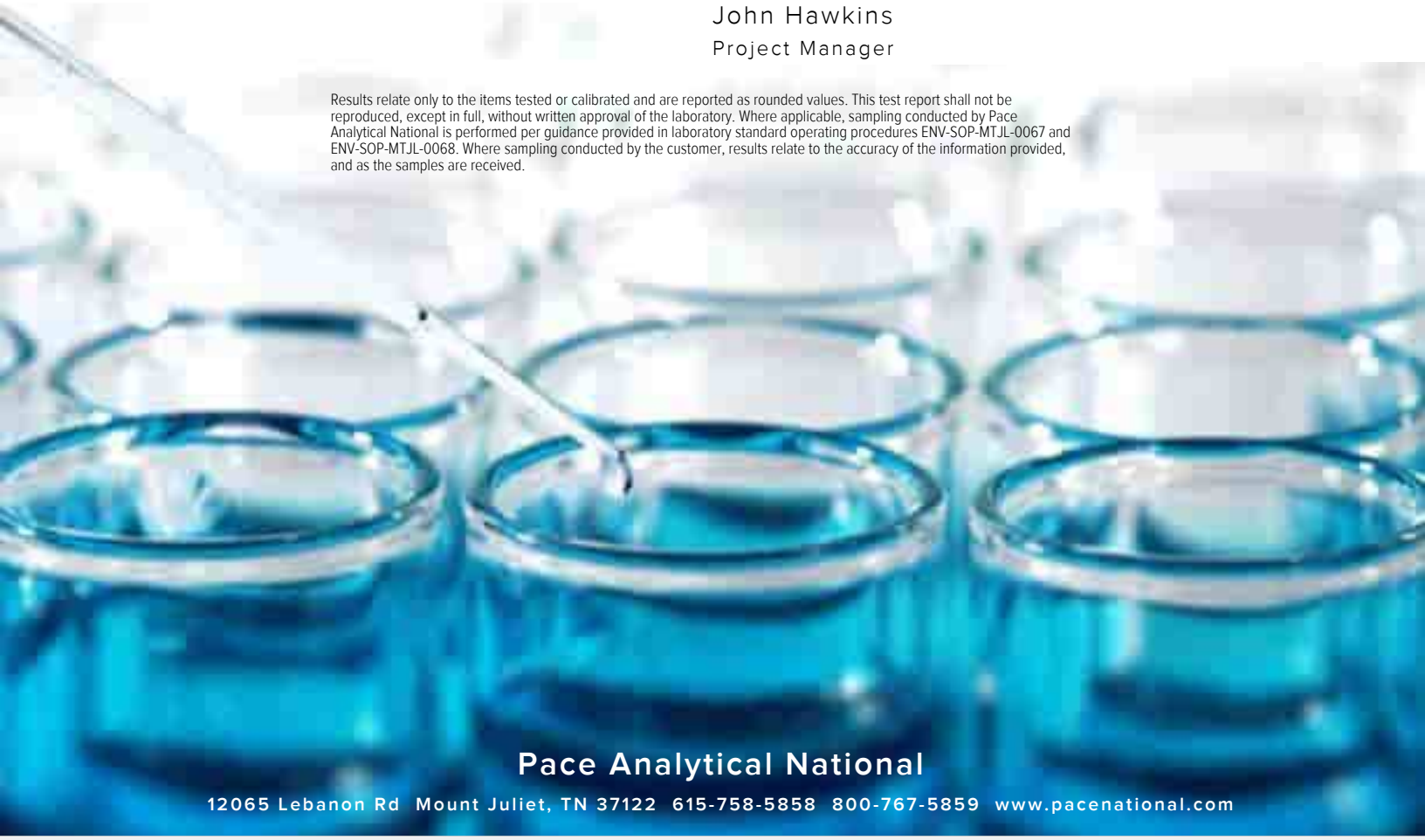
Sample Delivery Group:	L1571740
Samples Received:	12/30/2022
Project Number:	
Description:	

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By:

John Hawkins
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 4

Sr: Sample Results 5

2212E57-001F EB-12-28-22 L1571740-01 5

2212E57-002F OW-13 L1571740-02 6

2212E57-003F OW-56 L1571740-03 7

2212E57-004F OW-59 L1571740-04 8

2212E57-005F OW-67 L1571740-05 9

2212E57-006F OW-68 L1571740-06 10

2212E57-007F OW-60 L1571740-07 11

2212E57-008F DUP-12-28-22 L1571740-08 12

Qc: Quality Control Summary 13

Wet Chemistry by Method 4500CN E-2016 13

Gl: Glossary of Terms 14

Al: Accreditations & Locations 15

Sc: Sample Chain of Custody 16

SAMPLE SUMMARY

2212E57-001F EB-12-28-22 L1571740-01 WW

Collected by	Collected date/time	Received date/time
	12/28/22 08:30	12/30/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1981929	1	01/01/23 17:23	01/02/23 09:31	JCS	Mt. Juliet, TN

2212E57-002F OW-13 L1571740-02 WW

Collected by	Collected date/time	Received date/time
	12/28/22 09:00	12/30/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1981929	1	01/01/23 17:23	01/02/23 09:34	JCS	Mt. Juliet, TN

2212E57-003F OW-56 L1571740-03 WW

Collected by	Collected date/time	Received date/time
	12/28/22 09:45	12/30/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1981929	1	01/01/23 17:23	01/02/23 09:37	JCS	Mt. Juliet, TN

2212E57-004F OW-59 L1571740-04 WW

Collected by	Collected date/time	Received date/time
	12/28/22 10:10	12/30/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1981929	1	01/01/23 17:23	01/02/23 09:38	JCS	Mt. Juliet, TN

2212E57-005F OW-67 L1571740-05 WW

Collected by	Collected date/time	Received date/time
	12/28/22 10:30	12/30/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1981929	1	01/01/23 17:23	01/02/23 09:39	JCS	Mt. Juliet, TN

2212E57-006F OW-68 L1571740-06 WW

Collected by	Collected date/time	Received date/time
	12/28/22 11:00	12/30/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1981929	1	01/01/23 17:23	01/02/23 09:40	JCS	Mt. Juliet, TN

2212E57-007F OW-60 L1571740-07 WW

Collected by	Collected date/time	Received date/time
	12/28/22 11:30	12/30/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1981929	1	01/01/23 17:23	01/02/23 09:41	JCS	Mt. Juliet, TN

2212E57-008F DUP-12-28-22 L1571740-08 WW

Collected by	Collected date/time	Received date/time
	12/28/22 00:00	12/30/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1981929	1	01/01/23 17:23	01/02/23 09:42	JCS	Mt. Juliet, TN

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	01/02/2023 09:31	WG1981929

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	01/02/2023 09:34	WG1981929

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.00584		0.00500	1	01/02/2023 09:37	WG1981929

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.0194		0.00500	1	01/02/2023 09:38	WG1981929

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.0314		0.00500	1	01/02/2023 09:39	WG1981929

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.0119		0.00500	1	01/02/2023 09:40	WG1981929

221237-007 GW-30
Collected date/time: 12/28/22 11:30
L1571740

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.00710		0.00500	1	01/02/2023 09:41	WG1981929

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	01/02/2023 09:42	WG1981929

Method Blank (MB)

(MB) R3877142-1 01/02/23 09:09

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1571459-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1571459-06 01/02/23 09:15 • (DUP) R3877142-3 01/02/23 09:16

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	0.0108	0.0118	1	8.85		20

L1571581-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1571581-02 01/02/23 09:26 • (DUP) R3877142-6 01/02/23 09:27

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3877142-2 01/02/23 09:10

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.0981	98.1	87.1-120	

L1571459-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1571459-07 01/02/23 09:18 • (MS) R3877142-4 01/02/23 09:19 • (MSD) R3877142-5 01/02/23 09:22

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	0.00645	0.0974	0.0983	91.0	91.9	1	90.0-110			0.920	20

L1571740-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1571740-02 01/02/23 09:34 • (MS) R3877142-7 01/02/23 09:35 • (MSD) R3877142-8 01/02/23 09:36

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0977	0.0955	97.7	95.5	1	90.0-110			2.28	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
	The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Received by OCD: 4/21/2023 9:21:57 AM

ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

SUB CONTRATOR: Pace TN	COMPANY: PACE TN	PHONE: (800) 767-5859	FAX: (615) 758-5859
ADDRESS: 12065 Lebanon Rd		ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: Mt. Juliet, TN 37122			

US71740

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS	
1	2212E57-001F	EB-12-28-22	500AMBHDP F-NAOH	Groundwater	12/28/2022 8:30:00 AM	1	Total Cyanide J and MDL	-01
2	2212E57-002F	OW-13	500AMBHDP F-NAOH	Groundwater	12/28/2022 9:00:00 AM	1	Total Cyanide J and MDL	-02
3	2212E57-003F	OW-56	500AMBHDP F-NAOH	Groundwater	12/28/2022 9:45:00 AM	1	Total Cyanide J and MDL	-03
4	2212E57-004F	OW-59	500AMBHDP F-NAOH	Groundwater	12/28/2022 10:10:00 AM	1	Total Cyanide J and MDL	-04
5	2212E57-005F	OW-67	500AMBHDP F-NAOH	Groundwater	12/28/2022 10:30:00 AM	1	Total Cyanide J and MDL	-05
6	2212E57-006F	OW-68	500AMBHDP F-NAOH	Groundwater	12/28/2022 11:00:00 AM	1	Total Cyanide J and MDL	-06
7	2212E57-007F	OW-60	500AMBHDP F-NAOH	Groundwater	12/28/2022 11:30:00 AM	1	Total Cyanide J and MDL	-07
8	2212E57-009F	Dup-12-28-22	500AMBHDP F-NAOH	Groundwater	12/28/2022	1	Total Cyanide J and MDL	-08

F086

Sample Receipt Checklist

COC Seal Present/Intact: __Y__N
COC Signed/Accurate: __Y__N
Bottles arrive intact: __Y__N
Correct bottles used: __Y__N
Sufficient volume sent: __Y__N
RAD Screen <0.5 mR/hr: __Y__N

If Applicable
VOA Zero Headspace: __Y__N
Pres.Correct/Check: __Y__N

Fedex
770907423891
8 received
NO TB

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By:	Date: 12/29/2022	Time: 8:03 AM	Received By:	Date: 12/30	Time: 0900
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☒ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY
Temp of samples KRA2 1.6+0=1.6 °C Attempt to Cool ?
Comments:

Released to Imaging: 4/21/2023 9:40:26 AM

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212E57**

19-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-72409**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **72409**	RunNo: **93794**
Prep Date: **1/3/2023**	Analysis Date: **1/9/2023**	SeqNo: **3386096** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	0.0045	0.010								J

Sample ID: **LCSLL-72409**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **72409**	RunNo: **93794**
Prep Date: **1/3/2023**	Analysis Date: **1/9/2023**	SeqNo: **3386097** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0025	0.0030	0.002000	0	124	50	150			J
Beryllium	0.0021	0.0020	0.002000	0	107	50	150			
Cadmium	0.0020	0.0020	0.002000	0	102	50	150			
Chromium	0.0072	0.0060	0.006000	0	120	50	150			
Cobalt	0.0084	0.0060	0.006000	0	140	50	150			
Nickel	0.0070	0.010	0.005000	0	139	50	150			J
Silver	0.0053	0.0050	0.005000	0	106	50	150			
Vanadium	0.011	0.050	0.01000	0	108	50	150			J
Zinc	0.013	0.010	0.01000	0	129	50	150			

Sample ID: **LCS-72409**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **72409**	RunNo: **93794**
Prep Date: **1/3/2023**	Analysis Date: **1/9/2023**	SeqNo: **3386098** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.53	0.0030	0.5000	0	106	85	115			
Beryllium	0.55	0.0020	0.5000	0	109	85	115			
Cadmium	0.54	0.0020	0.5000	0	107	85	115			
Chromium	0.52	0.0060	0.5000	0	104	85	115			
Cobalt	0.52	0.0060	0.5000	0	103	85	115			
Nickel	0.51	0.010	0.5000	0	101	85	115			
Silver	0.10	0.0050	0.1000	0	103	85	115			
Vanadium	0.56	0.050	0.5000	0	111	85	115			
Zinc	0.52	0.010	0.5000	0	104	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212E57**

19-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **2212E57-001DMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **EB-12-28-22**	Batch ID: **72409**	RunNo: **93794**
Prep Date: **1/3/2023**	Analysis Date: **1/9/2023**	SeqNo: **3386134** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.57	0.0020	0.5000	0	114	70	130			
Cadmium	0.56	0.0020	0.5000	0	112	70	130			
Chromium	0.53	0.0060	0.5000	0	106	70	130			
Nickel	0.56	0.010	0.5000	0	111	70	130			
Silver	0.11	0.0050	0.1000	0	109	70	130			
Vanadium	0.56	0.050	0.5000	0	112	70	130			
Zinc	0.64	0.010	0.5000	0	127	70	130			

Sample ID: **2212E57-001DMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Metals**
Client ID: **EB-12-28-22**	Batch ID: **72409**	RunNo: **93794**
Prep Date: **1/3/2023**	Analysis Date: **1/9/2023**	SeqNo: **3386135** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.56	0.0020	0.5000	0	112	70	130	1.10	20	
Cadmium	0.55	0.0020	0.5000	0	109	70	130	1.95	20	
Chromium	0.52	0.0060	0.5000	0	105	70	130	1.71	20	
Nickel	0.54	0.010	0.5000	0	109	70	130	2.30	20	
Silver	0.11	0.0050	0.1000	0	107	70	130	1.46	20	
Vanadium	0.54	0.050	0.5000	0	108	70	130	3.09	20	
Zinc	0.62	0.010	0.5000	0	125	70	130	1.82	20	

Sample ID: **2212E57-002DMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **OW-13**	Batch ID: **72409**	RunNo: **93794**
Prep Date: **1/3/2023**	Analysis Date: **1/9/2023**	SeqNo: **3386137** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.60	0.0030	0.5000	0.02348	115	70	130			
Cadmium	0.52	0.0020	0.5000	0	105	70	130			
Chromium	0.51	0.0060	0.5000	0	103	70	130			
Nickel	0.53	0.010	0.5000	0	105	70	130			
Silver	0.11	0.0050	0.1000	0	107	70	130			
Vanadium	0.53	0.050	0.5000	0	107	70	130			
Zinc	0.61	0.010	0.5000	0	122	70	130			

Sample ID: **2212E57-002DMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Metals**
Client ID: **OW-13**	Batch ID: **72409**	RunNo: **93794**
Prep Date: **1/3/2023**	Analysis Date: **1/9/2023**	SeqNo: **3386138** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.60	0.0030	0.5000	0.02348	114	70	130	0.799	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212E57**

19-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **2212E57-002DMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Metals**
Client ID: **OW-13**	Batch ID: **72409**	RunNo: **93794**
Prep Date: **1/3/2023**	Analysis Date: **1/9/2023**	SeqNo: **3386138** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.52	0.0020	0.5000	0	103	70	130	1.24	20	
Chromium	0.50	0.0060	0.5000	0	101	70	130	1.99	20	
Nickel	0.52	0.010	0.5000	0	104	70	130	1.65	20	
Silver	0.11	0.0050	0.1000	0	105	70	130	1.77	20	
Vanadium	0.54	0.050	0.5000	0	107	70	130	0.491	20	
Zinc	0.60	0.010	0.5000	0	119	70	130	2.35	20	

Sample ID: **2212E57-001DMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **EB-12-28-22**	Batch ID: **72409**	RunNo: **93841**
Prep Date: **1/3/2023**	Analysis Date: **1/10/2023**	SeqNo: **3387491** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.53	0.0030	0.5000	0	106	70	130			
Cobalt	0.49	0.0060	0.5000	0	98.4	70	130			

Sample ID: **2212E57-001DMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Metals**
Client ID: **EB-12-28-22**	Batch ID: **72409**	RunNo: **93841**
Prep Date: **1/3/2023**	Analysis Date: **1/10/2023**	SeqNo: **3387492** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.52	0.0030	0.5000	0	103	70	130	2.42	20	
Cobalt	0.48	0.0060	0.5000	0	96.0	70	130	2.51	20	

Sample ID: **2212E57-002DMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **OW-13**	Batch ID: **72409**	RunNo: **93841**
Prep Date: **1/3/2023**	Analysis Date: **1/10/2023**	SeqNo: **3387497** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.54	0.0030	0.5000	0.01949	104	70	130			
Cobalt	0.49	0.0060	0.5000	0	97.0	70	130			

Sample ID: **2212E57-002DMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Metals**
Client ID: **OW-13**	Batch ID: **72409**	RunNo: **93841**
Prep Date: **1/3/2023**	Analysis Date: **1/10/2023**	SeqNo: **3387498** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.55	0.0030	0.5000	0.01949	107	70	130	2.47	20	
Cobalt	0.49	0.0060	0.5000	0	98.8	70	130	1.81	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212E57**

19-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-B** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**

Client ID: **PBW** Batch ID: **B93766** RunNo: **93766**

Prep Date: Analysis Date: **1/5/2023** SeqNo: **3384999** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS-B** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**

Client ID: **BatchQC** Batch ID: **B93766** RunNo: **93766**

Prep Date: Analysis Date: **1/5/2023** SeqNo: **3385000** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0018	0.0020	0.002000	0	88.9	50	150			J
Beryllium	0.0019	0.0020	0.002000	0	97.1	50	150			J
Cadmium	0.0022	0.0020	0.002000	0	112	50	150			
Chromium	0.0062	0.0060	0.006000	0	104	50	150			
Cobalt	0.0062	0.0060	0.006000	0	104	50	150			
Nickel	0.0034	0.010	0.005000	0	68.9	50	150			J
Silver	0.0048	0.0050	0.005000	0	97.0	50	150			J
Vanadium	0.0099	0.050	0.01000	0	99.4	50	150			J
Zinc	0.010	0.010	0.01000	0	101	50	150			

Sample ID: **LCS-B** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**

Client ID: **LCSW** Batch ID: **B93766** RunNo: **93766**

Prep Date: Analysis Date: **1/5/2023** SeqNo: **3385001** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0020	0.5000	0	102	85	115			
Beryllium	0.51	0.0020	0.5000	0	102	85	115			
Cadmium	0.51	0.0020	0.5000	0	101	85	115			
Chromium	0.50	0.0060	0.5000	0	99.2	85	115			
Cobalt	0.48	0.0060	0.5000	0	95.1	85	115			
Nickel	0.49	0.010	0.5000	0	98.1	85	115			
Silver	0.10	0.0050	0.1000	0	105	85	115			
Vanadium	0.52	0.050	0.5000	0	104	85	115			
Zinc	0.49	0.010	0.5000	0	97.8	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212E57**

19-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-C** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**

Client ID: **PBW** Batch ID: **C93766** RunNo: **93766**

Prep Date: Analysis Date: **1/5/2023** SeqNo: **3385002** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS-C** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**

Client ID: **BatchQC** Batch ID: **C93766** RunNo: **93766**

Prep Date: Analysis Date: **1/5/2023** SeqNo: **3385003** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0019	0.0020	0.002000	0	93.3	50	150			J
Beryllium	0.0019	0.0020	0.002000	0	96.7	50	150			J
Cadmium	0.0020	0.0020	0.002000	0	97.9	50	150			J
Chromium	0.0062	0.0060	0.006000	0	103	50	150			
Cobalt	0.0062	0.0060	0.006000	0	103	50	150			
Nickel	0.0049	0.010	0.005000	0	97.3	50	150			J
Silver	0.0048	0.0050	0.005000	0	96.5	50	150			J
Vanadium	0.0098	0.050	0.01000	0	98.2	50	150			J
Zinc	0.011	0.010	0.01000	0	110	50	150			

Sample ID: **LCS-C** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**

Client ID: **LCSW** Batch ID: **C93766** RunNo: **93766**

Prep Date: Analysis Date: **1/5/2023** SeqNo: **3385007** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.53	0.0020	0.5000	0	105	85	115			
Beryllium	0.52	0.0020	0.5000	0	104	85	115			
Cadmium	0.51	0.0020	0.5000	0	103	85	115			
Chromium	0.51	0.0060	0.5000	0	102	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.0	85	115			
Nickel	0.51	0.010	0.5000	0	102	85	115			
Silver	0.11	0.0050	0.1000	0	106	85	115			
Vanadium	0.52	0.050	0.5000	0	104	85	115			
Zinc	0.53	0.010	0.5000	0	106	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2212E57**
19-Jan-23

Client: Marathon
Project: 2022 GW Sampling 4th Quarter

Sample ID: **2212E57-003EMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **OW-56**	Batch ID: **C93766**	RunNo: **93766**
Prep Date:	Analysis Date: **1/5/2023**	SeqNo: **3385128** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.89	0.0020	0.5000	0.3899	99.2	70	130			
Beryllium	0.53	0.0020	0.5000	0	107	70	130			
Cadmium	0.53	0.0020	0.5000	0	106	70	130			
Chromium	0.50	0.0060	0.5000	0	100	70	130			
Nickel	0.57	0.010	0.5000	0.07363	99.5	70	130			
Silver	0.080	0.0050	0.1000	0	79.6	70	130			
Vanadium	0.51	0.050	0.5000	0.003427	102	70	130			

Sample ID: **2212E57-003EMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **OW-56**	Batch ID: **C93766**	RunNo: **93766**
Prep Date:	Analysis Date: **1/5/2023**	SeqNo: **3385129** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.92	0.0020	0.5000	0.3899	106	70	130	4.04	20	
Beryllium	0.55	0.0020	0.5000	0	110	70	130	3.50	20	
Cadmium	0.55	0.0020	0.5000	0	109	70	130	2.89	20	
Chromium	0.52	0.0060	0.5000	0	104	70	130	3.32	20	
Nickel	0.59	0.010	0.5000	0.07363	103	70	130	2.97	20	
Silver	0.084	0.0050	0.1000	0	84.3	70	130	5.83	20	
Vanadium	0.53	0.050	0.5000	0.003427	106	70	130	3.71	20	

Sample ID: **MB-A**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A93838**	RunNo: **93838**
Prep Date:	Analysis Date: **1/9/2023**	SeqNo: **3387404** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2212E57**
19-Jan-23

Client: Marathon
Project: 2022 GW Sampling 4th Quarter

Sample ID: **LCSLL-A** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **A93838** RunNo: **93838**
Prep Date: Analysis Date: **1/9/2023** SeqNo: **3387405** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0018	0.0020	0.002000	0	90.6	50	150			J
Beryllium	0.0020	0.0020	0.002000	0	102	50	150			
Cadmium	0.0019	0.0020	0.002000	0	94.5	50	150			J
Chromium	0.0067	0.0060	0.006000	0	112	50	150			
Cobalt	0.0060	0.0060	0.006000	0	101	50	150			
Nickel	0.0039	0.010	0.005000	0	78.6	50	150			J
Silver	0.0053	0.0050	0.005000	0	105	50	150			
Vanadium	0.0096	0.050	0.01000	0	96.2	50	150			J
Zinc	0.011	0.010	0.01000	0	112	50	150			

Sample ID: **LCS-A** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **A93838** RunNo: **93838**
Prep Date: Analysis Date: **1/9/2023** SeqNo: **3387406** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	97.5	85	115			
Beryllium	0.50	0.0020	0.5000	0	100	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.2	85	115			
Chromium	0.49	0.0060	0.5000	0	97.1	85	115			
Cobalt	0.47	0.0060	0.5000	0	93.9	85	115			
Nickel	0.48	0.010	0.5000	0	95.5	85	115			
Silver	0.10	0.0050	0.1000	0	100	85	115			
Vanadium	0.50	0.050	0.5000	0	99.2	85	115			
Zinc	0.48	0.010	0.5000	0	95.7	85	115			

Sample ID: **MB-A** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW** Batch ID: **A94009** RunNo: **94009**
Prep Date: Analysis Date: **1/17/2023** SeqNo: **3393889** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	ND	0.0060								

Sample ID: **LCSLL-A** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **A94009** RunNo: **94009**
Prep Date: Analysis Date: **1/17/2023** SeqNo: **3393890** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	0.0062	0.0060	0.006000	0	103	50	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2212E57**
19-Jan-23

Client: Marathon
Project: 2022 GW Sampling 4th Quarter

Sample ID: **LCS-A**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A94009**	RunNo: **94009**
Prep Date:	Analysis Date: **1/17/2023**	SeqNo: **3393891** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	0.51	0.0060	0.5000	0	101	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212E57**

19-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-72409**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **72409**	RunNo: **93754**
Prep Date: **1/3/2023**	Analysis Date: **1/5/2023**	SeqNo: **3384108** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00062	0.0010								J
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **MSLCSLL-72409**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **72409**	RunNo: **93754**
Prep Date: **1/3/2023**	Analysis Date: **1/5/2023**	SeqNo: **3384109** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0012	0.0010	0.001000	0	119	50	150			
Arsenic	0.0011	0.0010	0.001000	0	105	50	150			
Lead	0.00050	0.00050	0.0005000	0	100	50	150			J

Sample ID: **MSLCS-72409**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **72409**	RunNo: **93754**
Prep Date: **1/3/2023**	Analysis Date: **1/5/2023**	SeqNo: **3384110** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.4	85	115			
Arsenic	0.023	0.0010	0.02500	0	93.9	85	115			
Lead	0.012	0.00050	0.01250	0	94.7	85	115			
Selenium	0.023	0.0010	0.02500	0	92.3	85	115			

Sample ID: **MSLCSLL-72409**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **72409**	RunNo: **93754**
Prep Date: **1/3/2023**	Analysis Date: **1/5/2023**	SeqNo: **3384115** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.00069	0.0010	0.001000	0	69.0	50	150			J

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2212E57**
19-Jan-23

Client: Marathon
Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **B93855**	RunNo: **93855**
Prep Date:	Analysis Date: **1/10/2023**	SeqNo: **3387953** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCS A**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **B93855**	RunNo: **93855**
Prep Date:	Analysis Date: **1/10/2023**	SeqNo: **3387954** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	102	85	115			
Arsenic	0.025	0.0010	0.02500	0	102	85	115			
Lead	0.013	0.00050	0.01250	0	102	85	115			
Selenium	0.025	0.0010	0.02500	0	102	85	115			

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **B93855**	RunNo: **93855**
Prep Date:	Analysis Date: **1/10/2023**	SeqNo: **3387955** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0012	0.0010	0.001000	0	117	50	150			
Arsenic	0.0012	0.0010	0.001000	0	120	50	150			
Lead	0.00051	0.00050	0.0005000	0	102	50	150			
Selenium	0.0011	0.0010	0.001000	0	108	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **B93855**	RunNo: **93855**
Prep Date:	Analysis Date: **1/10/2023**	SeqNo: **3387956** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	104	85	115			
Arsenic	0.026	0.0010	0.02500	0	103	85	115			
Lead	0.013	0.00050	0.01250	0	102	85	115			
Selenium	0.026	0.0010	0.02500	0	103	85	115			

Sample ID: **2212E57-001EMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Metals**
Client ID: **EB-12-28-22**	Batch ID: **B93855**	RunNo: **93855**
Prep Date:	Analysis Date: **1/10/2023**	SeqNo: **3387983** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212E57**

19-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **2212E57-001EMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Metals**
Client ID: **EB-12-28-22**	Batch ID: **B93855**	RunNo: **93855**
Prep Date:	Analysis Date: **1/10/2023**	SeqNo: **3387983** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.027	0.0010	0.02500	0	109	70	130			
Arsenic	0.026	0.0010	0.02500	0	105	70	130			
Lead	0.013	0.00050	0.01250	0	106	70	130			
Selenium	0.028	0.0010	0.02500	0	111	70	130			

Sample ID: **2212E57-001EMSDL**	SampType: **MSD**	TestCode: **EPA 200.8: Metals**
Client ID: **EB-12-28-22**	Batch ID: **B93855**	RunNo: **93855**
Prep Date:	Analysis Date: **1/10/2023**	SeqNo: **3387984** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.027	0.0010	0.02500	0	110	70	130	1.18	20	
Arsenic	0.027	0.0010	0.02500	0	107	70	130	1.75	20	
Lead	0.013	0.00050	0.01250	0	107	70	130	0.719	20	
Selenium	0.028	0.0010	0.02500	0	111	70	130	0.175	20	

Sample ID: **2212E57-002EMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Metals**
Client ID: **OW-13**	Batch ID: **B93855**	RunNo: **93855**
Prep Date:	Analysis Date: **1/10/2023**	SeqNo: **3387986** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.027	0.0010	0.02500	0	107	70	130			
Arsenic	0.028	0.0010	0.02500	0.001331	105	70	130			
Lead	0.013	0.00050	0.01250	0	107	70	130			
Selenium	0.029	0.0010	0.02500	0.002211	108	70	130			

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **A93877**	RunNo: **93877**
Prep Date:	Analysis Date: **1/11/2023**	SeqNo: **3388811** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **A93877**	RunNo: **93877**
Prep Date:	Analysis Date: **1/11/2023**	SeqNo: **3388813** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00092	0.0010	0.001000	0	92.3	50	150			J

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2212E57**
19-Jan-23

Client: Marathon
Project: 2022 GW Sampling 4th Quarter

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**							
Client ID: **BatchQC**	Batch ID: **A93877**	RunNo: **93877**							
Prep Date:	Analysis Date: **1/11/2023**	SeqNo: **3388813**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.0012	0.0010	0.001000	0	123	50	150			
Selenium	0.0010	0.0010	0.001000	0	100	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**							
Client ID: **LCSW**	Batch ID: **A93877**	RunNo: **93877**							
Prep Date:	Analysis Date: **1/11/2023**	SeqNo: **3388814**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	104	85	115			
Arsenic	0.025	0.0010	0.02500	0	100	85	115			
Selenium	0.025	0.0010	0.02500	0	99.1	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212E57**

19-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-72553**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **PBW**	Batch ID: **72553**	RunNo: **93945**							
Prep Date: **1/10/2023**	Analysis Date: **1/11/2023**	SeqNo: **3391884**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-72553**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **BatchQC**	Batch ID: **72553**	RunNo: **93945**							
Prep Date: **1/10/2023**	Analysis Date: **1/11/2023**	SeqNo: **3391885**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00021	0.00020	0.0001500	0	140	50	150			

Sample ID: **LCS-72553**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **LCSW**	Batch ID: **72553**	RunNo: **93945**							
Prep Date: **1/10/2023**	Analysis Date: **1/11/2023**	SeqNo: **3391886**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	101	85	115			

Sample ID: **2212E57-009DMS**	SampType: **MS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **Dup-12-28-22**	Batch ID: **72553**	RunNo: **93945**							
Prep Date: **1/10/2023**	Analysis Date: **1/11/2023**	SeqNo: **3391959**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0049	0.00020	0.005000	0	98.8	75	125			

Sample ID: **2212E57-009DMSD**	SampType: **MSD**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **Dup-12-28-22**	Batch ID: **72553**	RunNo: **93945**							
Prep Date: **1/10/2023**	Analysis Date: **1/11/2023**	SeqNo: **3391960**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0059	0.00020	0.005000	0	118	75	125	17.6	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2212E57**
19-Jan-23

Client: Marathon
Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-72430**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **72430**	RunNo: **93769**							
Prep Date: **1/4/2023**	Analysis Date: **1/4/2023**	SeqNo: **3385211**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-72430**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **LCSW**	Batch ID: **72430**	RunNo: **93769**							
Prep Date: **1/4/2023**	Analysis Date: **1/4/2023**	SeqNo: **3385212**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.13	0.010	0.1000	0	129	70	130			

Sample ID: **MB-72430**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **72430**	RunNo: **93769**							
Prep Date: **1/4/2023**	Analysis Date: **1/4/2023**	SeqNo: **3385242**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2212E57**
19-Jan-23

Client: Marathon
Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-72386**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **PBW**	Batch ID: **72386**	RunNo: **93783**
Prep Date: **12/30/2022**	Analysis Date: **1/5/2023**	SeqNo: **3386219** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.10	0.064								
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.033		0.03750		87.3	15.9	177			

Sample ID: **LCS-72386**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSW**	Batch ID: **72386**	RunNo: **93783**
Prep Date: **12/30/2022**	Analysis Date: **1/5/2023**	SeqNo: **3386220** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.19	0.064	0.1875	0	100	31.2	125			B
Surr: DNOP	0.021		0.01875		110	15.9	177			

Sample ID: **LCSD-72386**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02**	Batch ID: **72386**	RunNo: **93783**
Prep Date: **12/30/2022**	Analysis Date: **1/5/2023**	SeqNo: **3386224** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.22	0.064	0.1875	0	115	31.2	125	13.9	20	B
Surr: DNOP	0.019		0.01875		102	15.9	177	0	0	

Sample ID: **MB-72395**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **PBW**	Batch ID: **72395**	RunNo: **93843**
Prep Date: **12/30/2022**	Analysis Date: **1/9/2023**	SeqNo: **3387577** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.10	0.064								
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.034		0.03750		91.0	15.9	177			

Sample ID: **LCS-72395**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSW**	Batch ID: **72395**	RunNo: **93843**
Prep Date: **12/30/2022**	Analysis Date: **1/9/2023**	SeqNo: **3387578** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.26	0.064	0.1875	0	138	31.2	125			BS
Surr: DNOP	0.020		0.01875		109	15.9	177			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2212E57**
19-Jan-23

Client: Marathon
Project: 2022 GW Sampling 4th Quarter

Sample ID: **LCSD-72395**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02**	Batch ID: **72395**	RunNo: **93843**
Prep Date: **12/30/2022**	Analysis Date: **1/9/2023**	SeqNo: **3387579** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.20	0.064	0.1875	0	108	31.2	125	25.2	20	BR
Surr: DNOP	0.019		0.01875		104	15.9	177	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212E57**

19-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **R93693**	RunNo: **93693**
Prep Date:	Analysis Date: **1/3/2023**	SeqNo: **3382018** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.50	0.050	0.5000	0	99.4	80	120			
Surr: BFB	37		20.00		183	70	130			S

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **R93693**	RunNo: **93693**
Prep Date:	Analysis Date: **1/3/2023**	SeqNo: **3382038** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	18		20.00		88.2	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212E57**

19-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R93727**	RunNo: **93727**
Prep Date:	Analysis Date: **1/4/2023**	SeqNo: **3383251** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	23	1.0	20.00	0	114	70	130			
Toluene	20	1.0	20.00	0	98.3	70	130			
Chlorobenzene	19	1.0	20.00	0	95.1	70	130			
1,1-Dichloroethene	20	1.0	20.00	0	98.2	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	102	70	130			
Surr: 1,2-Dichloroethane-d4	12		10.00		124	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		106	70	130			
Surr: Dibromofluoromethane	11		10.00		109	70	130			
Surr: Toluene-d8	9.7		10.00		97.1	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R93727**	RunNo: **93727**
Prep Date:	Analysis Date: **1/4/2023**	SeqNo: **3383268** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212E57**

19-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R93727**	RunNo: **93727**
Prep Date:	Analysis Date: **1/4/2023**	SeqNo: **3383268** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.0		10.00		89.7	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		98.2	70	130			
Surr: Dibromofluoromethane	9.7		10.00		96.5	70	130			
Surr: Toluene-d8	9.9		10.00		98.8	70	130			

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R93747**	RunNo: **93747**
Prep Date:	Analysis Date: **1/5/2023**	SeqNo: **3383858** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	99.4	70	130			
Toluene	19	1.0	20.00	0	94.2	70	130			
Chlorobenzene	18	1.0	20.00	0	90.8	70	130			
1,1-Dichloroethene	18	1.0	20.00	0	91.9	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	90.6	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		97.8	70	130			
Surr: Dibromofluoromethane	9.9		10.00		98.5	70	130			
Surr: Toluene-d8	9.8		10.00		98.1	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R93747**	RunNo: **93747**
Prep Date:	Analysis Date: **1/5/2023**	SeqNo: **3383879** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2212E57**
19-Jan-23

Client: Marathon
Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R93747**	RunNo: **93747**
Prep Date:	Analysis Date: **1/5/2023**	SeqNo: **3383879** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		103	70	130			
Surr: 4-Bromofluorobenzene	9.4		10.00		93.7	70	130			
Surr: Dibromofluoromethane	9.4		10.00		93.9	70	130			
Surr: Toluene-d8	9.4		10.00		94.3	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2212E57**
19-Jan-23

Client: Marathon
Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb-72406**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **72406**	RunNo: **93814**
Prep Date: **1/3/2023**	Analysis Date: **1/9/2023**	SeqNo: **3386698** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Anthracene	ND	10								
Benz(a)anthracene	ND	5.0								
Benzo(b)fluoranthene	ND	10								
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	10								
2,4-Dinitrophenol	ND	20								
Fluoranthene	ND	10								
Fluorene	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
1-Methylnaphthalene	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
Naphthalene	ND	5.0								
Phenanthrene	ND	10								
Phenol	ND	20								
Pyrene	ND	10								
Pyridine	ND	40								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	87		200.0		43.6	15	84.5			
Surr: Phenol-d5	70		200.0		35.0	15	67			
Surr: 2,4,6-Tribromophenol	120		200.0		58.8	15	108			
Surr: Nitrobenzene-d5	55		100.0		55.3	16.8	112			
Surr: 2-Fluorobiphenyl	46		100.0		45.9	15	101			
Surr: 4-Terphenyl-d14	89		100.0		88.6	34.4	134			

Sample ID: **lcs-72406**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **72406**	RunNo: **93814**
Prep Date: **1/3/2023**	Analysis Date: **1/9/2023**	SeqNo: **3386699** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212E57**

19-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **lcs-72406**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **72406**	RunNo: **93814**
Prep Date: **1/3/2023**	Analysis Date: **1/9/2023**	SeqNo: **3386699** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	60	10	100.0	0	60.0	21.3	104			
1,4-Dichlorobenzene	41	5.0	100.0	0	40.6	15	89.8			
Phenol	83	20	200.0	0	41.7	17	61.1			
Pyrene	75	10	100.0	0	74.6	61	123			
Surr: 2-Fluorophenol	94		200.0		46.8	15	84.5			
Surr: Phenol-d5	76		200.0		37.8	15	67			
Surr: 2,4,6-Tribromophenol	140		200.0		70.6	15	108			
Surr: Nitrobenzene-d5	64		100.0		64.0	16.8	112			
Surr: 2-Fluorobiphenyl	58		100.0		57.6	15	101			
Surr: 4-Terphenyl-d14	86		100.0		86.3	34.4	134			

Sample ID: **lcsd-72406**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **72406**	RunNo: **93814**
Prep Date: **1/3/2023**	Analysis Date: **1/9/2023**	SeqNo: **3386700** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	52	10	100.0	0	52.3	21.3	104	13.7	45.3	
1,4-Dichlorobenzene	39	5.0	100.0	0	39.1	15	89.8	3.61	39.6	
Phenol	77	20	200.0	0	38.4	17	61.1	8.35	42.5	
Pyrene	74	10	100.0	0	74.2	61	123	0.549	11.8	
Surr: 2-Fluorophenol	91		200.0		45.4	15	84.5	0	0	
Surr: Phenol-d5	72		200.0		35.9	15	67	0	0	
Surr: 2,4,6-Tribromophenol	140		200.0		72.1	15	108	0	0	
Surr: Nitrobenzene-d5	58		100.0		58.4	16.8	112	0	0	
Surr: 2-Fluorobiphenyl	49		100.0		49.1	15	101	0	0	
Surr: 4-Terphenyl-d14	86		100.0		86.2	34.4	134	0	0	

Sample ID: **mb-72443**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **72443**	RunNo: **93858**
Prep Date: **1/4/2023**	Analysis Date: **1/10/2023**	SeqNo: **3388040** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorophenol	59		200.0		29.5	15	84.5			
Surr: Phenol-d5	46		200.0		23.0	15	67			
Surr: 2,4,6-Tribromophenol	77		200.0		38.3	15	108			
Surr: Nitrobenzene-d5	38		100.0		38.0	16.8	112			
Surr: 2-Fluorobiphenyl	34		100.0		34.0	15	101			
Surr: 4-Terphenyl-d14	61		100.0		61.2	34.4	134			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212E57**

19-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **lcs-72443**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **72443**	RunNo: **93858**
Prep Date: **1/4/2023**	Analysis Date: **1/10/2023**	SeqNo: **3388041** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorophenol	100		200.0		52.3	15	84.5			
Surr: Phenol-d5	80		200.0		39.8	15	67			
Surr: 2,4,6-Tribromophenol	170		200.0		85.2	15	108			
Surr: Nitrobenzene-d5	67		100.0		67.3	16.8	112			
Surr: 2-Fluorobiphenyl	59		100.0		58.6	15	101			
Surr: 4-Terphenyl-d14	99		100.0		98.6	34.4	134			

Sample ID: **lcsd-72443**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **72443**	RunNo: **93858**
Prep Date: **1/4/2023**	Analysis Date: **1/10/2023**	SeqNo: **3388042** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorophenol	110		200.0		54.2	15	84.5	0	0	
Surr: Phenol-d5	84		200.0		42.1	15	67	0	0	
Surr: 2,4,6-Tribromophenol	190		200.0		93.6	15	108	0	0	
Surr: Nitrobenzene-d5	71		100.0		70.8	16.8	112	0	0	
Surr: 2-Fluorobiphenyl	62		100.0		62.5	15	101	0	0	
Surr: 4-Terphenyl-d14	110		100.0		107	34.4	134	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212E57**

19-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb-72406**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **72406**	RunNo: **93725**
Prep Date: **1/3/2023**	Analysis Date: **1/5/2023**	SeqNo: **3383328** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.30								
1-Methylnaphthalene	ND	0.30								
2-Methylnaphthalene	ND	0.30								
Acenaphthene	ND	0.30								
Fluorene	ND	0.30								
Phenanthrene	ND	0.30								
Anthracene	ND	0.30								
Fluoranthene	ND	0.30								
Pyrene	ND	1.0								
Benz(a)anthracene	ND	0.30								
Chrysene	ND	0.30								
Benzo(b)fluoranthene	ND	0.40								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	54		100.0		54.1	15	108			
Surr: 2,4,6-Tribromophenol	100		200.0		49.9	15	112			
Surr: 2-Fluorobiphenyl	45		100.0		45.1	15	107			
Surr: 4-Terphenyl-d14	100		100.0		103	15	166			

Sample ID: **lcs-72406-lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **72406**	RunNo: **93725**
Prep Date: **1/3/2023**	Analysis Date: **1/5/2023**	SeqNo: **3383329** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.68	1.0	2.000	0	34.0	15	60.5			J
Naphthalene	0.98	0.30	2.000	0	49.0	15	78.3			
1-Methylnaphthalene	0.98	0.30	2.000	0	49.0	15	79.6			
2-Methylnaphthalene	0.94	0.30	2.000	0	47.0	15	78.6			
Acenaphthene	1.1	0.30	2.000	0	54.0	15	92			
Fluorene	1.2	0.30	2.000	0	62.0	15	96			
Phenanthrene	1.5	0.30	2.000	0	73.0	21	103			
Anthracene	1.6	0.30	2.000	0	81.0	21.1	106			
Fluoranthene	2.0	0.30	2.000	0	99.0	32.8	119			
Pyrene	1.8	1.0	2.000	0	88.0	34.1	110			
Benz(a)anthracene	2.2	0.30	2.000	0	110	32	132			
Chrysene	1.9	0.30	2.000	0	94.0	31.3	112			
Benzo(b)fluoranthene	2.0	0.40	2.000	0	101	34.1	119			
Indeno(1,2,3-cd)pyrene	2.7	0.30	2.000	0	134	24.7	152			
Surr: Nitrobenzene-d5	67		102.0		65.7	15	108			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212E57**

19-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **lcs-72406-lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **72406**	RunNo: **93725**
Prep Date: **1/3/2023**	Analysis Date: **1/5/2023**	SeqNo: **3383329** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	110		204.0		55.4	15	112			
Surr: 2-Fluorobiphenyl	57		102.0		56.1	15	107			
Surr: 4-Terphenyl-d14	100		102.0		100	15	166			

Sample ID: **lcsd-72406-lf**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02**	Batch ID: **72406**	RunNo: **93725**
Prep Date: **1/3/2023**	Analysis Date: **1/5/2023**	SeqNo: **3383330** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.80	1.0	2.000	0	40.0	15	60.5	16.2	29.7	J
Naphthalene	1.0	0.30	2.000	0	50.0	15	78.3	2.02	31.7	
1-Methylnaphthalene	0.90	0.30	2.000	0	45.0	15	79.6	8.51	31.4	
2-Methylnaphthalene	0.84	0.30	2.000	0	42.0	15	78.6	11.2	30.5	
Acenaphthene	1.1	0.30	2.000	0	56.0	15	92	3.64	30.5	
Fluorene	1.3	0.30	2.000	0	66.0	15	96	6.25	25.1	
Phenanthrene	1.6	0.30	2.000	0	78.0	21	103	6.62	26.4	
Anthracene	1.7	0.30	2.000	0	84.0	21.1	106	3.64	14.4	
Fluoranthene	1.9	0.30	2.000	0	95.0	32.8	119	4.12	14.8	
Pyrene	1.7	1.0	2.000	0	84.0	34.1	110	4.65	19.2	
Benz(a)anthracene	2.1	0.30	2.000	0	104	32	132	5.61	29.3	
Chrysene	1.8	0.30	2.000	0	89.0	31.3	112	5.46	19	
Benzo(b)fluoranthene	1.9	0.40	2.000	0	94.0	34.1	119	7.18	31.6	
Indeno(1,2,3-cd)pyrene	2.5	0.30	2.000	0	125	24.7	152	6.95	21.3	
Surr: Nitrobenzene-d5	76		102.0		74.7	15	108	0	0	
Surr: 2,4,6-Tribromophenol	120		204.0		57.9	15	112	0	0	
Surr: 2-Fluorobiphenyl	65		102.0		64.1	15	107	0	0	
Surr: 4-Terphenyl-d14	97		102.0		95.1	15	166	0	0	

Sample ID: **mb-72443**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **72443**	RunNo: **93750**
Prep Date: **1/4/2023**	Analysis Date: **1/5/2023**	SeqNo: **3384009** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	45		100.0		44.6	15	108			
Surr: 2,4,6-Tribromophenol	82		200.0		40.8	15	112			
Surr: 2-Fluorobiphenyl	37		100.0		37.4	15	107			
Surr: 4-Terphenyl-d14	82		100.0		82.0	15	166			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212E57**

19-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **lcs-72443 lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **72443**	RunNo: **93750**
Prep Date: **1/4/2023**	Analysis Date: **1/5/2023**	SeqNo: **3384010** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	61		102.0		59.6	15	108			
Surr: 2,4,6-Tribromophenol	110		204.0		51.6	15	112			
Surr: 2-Fluorobiphenyl	51		102.0		50.1	15	107			
Surr: 4-Terphenyl-d14	85		102.0		83.5	15	166			

Sample ID: **lcsd-72443 lf**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02**	Batch ID: **72443**	RunNo: **93750**
Prep Date: **1/4/2023**	Analysis Date: **1/5/2023**	SeqNo: **3384011** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	68		102.0		66.5	15	108	0	0	
Surr: 2,4,6-Tribromophenol	110		204.0		54.2	15	112	0	0	
Surr: 2-Fluorobiphenyl	59		102.0		58.0	15	107	0	0	
Surr: 4-Terphenyl-d14	71		102.0		69.9	15	166	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 3336 of 3808

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Marathon | Work Order Number: 2212E57 | RcptNo: 1

Received By: Cheyenne Cason 12/29/2022 7:30:00 AM

Completed By: Cheyenne Cason 12/29/2022 7:55:39 AM

Reviewed By: SCL 12/29/22

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☑ No ☑ NA ☐ pH 12/29/22
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☑ No ☐ NA ☐
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: 16 8 (<2 or >12 unless noted)
Adjusted? yes
Checked by: JM 12/29/22

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

16. Additional remarks: 0.5ml of HNO3 (7051) was added to sample 001 for pH>2. JM 12/29/22.

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.9	Good	Not Present	IR Yogi		
2	6.8	Good	Not Present	IR Yogi		
3	1.1	Good	Not Present	IR Yogi		
4	0.2	Good	Not Present	IR Yogi		

Received by OCD: 4/21/2023 9:21:57 AM
Released to Imaging: 4/21/2023 9:40:26 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Client: Marathon Gallup Refinery	X Standard Rush
Mailing Address: 92 Giant Crossing Road, Jamestown NM 87301	Project Name: 2022 GW Sampling 4th Quarter
Phone #: 808-640-1823	Project #: 697-080-001
email or Fax#:	Project Manager: Lesli Alexander
QA/QC Package: X Standard ☐ Level 4 (Full Validation)	Sampler:
Accreditation: ☐ Az Compliance ☐ NELAC ☐ Other	On Ice: ☒ Yes ☐ No
X EDD (Type)	# of Coolers: 4 (2 Yes)
	Cooler Temp(including cf): See Remark

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2212E57
12/29	8:30		EB-12-29-22	13		001
12/29	9:00		OW-13	13		002
12/29	9:45		OW-56	13		003
12/28	10:16		OW-59	13		004
12/28	10:30		OW-67	13		005
12/28	11:00		OW-68	13		006
12/28	11:30		OW-60	13		007
12/29	11:30		FB-12-29-22	3		008
12/28	—		Dup-12-28-22	13		009
			Trip Blank			010

Analysis Request

See Analyte	8260B VOC	8270C SVOC	8270CSIM: PAH, 1,4 Dioxane	8015: TPH GRO/DRO/MRO	E200.7: Metals	E200.7: Dissolved Metals	E245.1 Mercury	E504.1 EDB	E335.4: Cyanide Subbed		537.1 PFAS	SM 5210B: BOD	410.4: COD	
	X	X	X	X	X	X	X	X	X					
	X	X	X	X	X	X	X	X	X					
	X	X	X	X	X	X	X	X	X					
	X	X	X	X	X	X	X	X	X					
	X	X	X	X	X	X	X	X	X					
	X	X	X	X	X	X	X	X	X					
	X	X	X	X	X	X	X	X	X					
	X	X	X	X	X	X	X	X	X					
	X	X												
	X	X	X	X	X	X	X	X	X					

Date	Time	Relinquished by	Received by	Via	Date	Time
12/28	12:30	Hilary Tarr	[illegible]	Courier	12/29/22	0730
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

0.9 - 0 = 0.9
0.8 - 0 = 0.8
1.1 - 0 = 1.1
0.2 - 0 = 0.2

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

January 19, 2023

Emily Conkling

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX (505) 632-3911

RE: 2022 GW Sampling 4th Quarter OrderNo.: 2212F05

Dear Emily Conkling:

Hall Environmental Analysis Laboratory received 8 sample(s) on 12/30/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **2212F05**
Date: **1/19/2023**

CLIENT: Marathon
Project: 2022 GW Sampling 4th Quarter

Analytical Notes regarding e.Coli:
The e.Coli sample was received on Friday 12/30 and the lab was not accepting e.Coli samples on this day due to the New Year holiday.

Analytical Notes Regarding EPA Method 8015D DRO/MRO:
The method blank had a low level detection for DRO. Samples with detections are flagged with a "B". The laboratory control spike for DRO/MRO had an elevated recovery.

"S" flagged surrogates/spikes denote that the analyte recovery was outstide of the standard limits.

Analytical Notes regarding EPA Method 8270SIMS:
The 1,4 Dioxane detection for sample MKTF-32 is "E" flagged because the result is above the calibration range.

Analytical Report
Lab Order: **2212F05**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-29-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/29/2022 11:00:00 AM
Lab ID: 2212F05-001A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	1/4/2023 4:42:57 PM	R93719
Surr: BFB	86.4	0	70-130		%Rec	1	1/4/2023 4:42:57 PM	R93719
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	1.0	1.0		µg/L	1	1/5/2023 3:38:24 PM	R93747
Toluene	ND	1.0	1.0		µg/L	1	1/5/2023 3:38:24 PM	R93747
Ethylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 3:38:24 PM	R93747
Methyl tert-butyl ether (MTBE)	ND	1.0	1.0		µg/L	1	1/5/2023 3:38:24 PM	R93747
1,2,4-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 3:38:24 PM	R93747
1,3,5-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 3:38:24 PM	R93747
1,2-Dichloroethane (EDC)	ND	1.0	1.0		µg/L	1	1/5/2023 3:38:24 PM	R93747
Acetone	ND	10	10		µg/L	1	1/5/2023 3:38:24 PM	R93747
Bromomethane	ND	3.0	3.0		µg/L	1	1/5/2023 3:38:24 PM	R93747
2-Butanone	ND	10	10		µg/L	1	1/5/2023 3:38:24 PM	R93747
Carbon disulfide	ND	10	10		µg/L	1	1/5/2023 3:38:24 PM	R93747
Chlorobenzene	ND	1.0	1.0		µg/L	1	1/5/2023 3:38:24 PM	R93747
Chloroform	ND	1.0	1.0		µg/L	1	1/5/2023 3:38:24 PM	R93747
Chloromethane	ND	3.0	3.0		µg/L	1	1/5/2023 3:38:24 PM	R93747
cis-1,2-DCE	ND	1.0	1.0		µg/L	1	1/5/2023 3:38:24 PM	R93747
1,1-Dichloroethane	ND	1.0	1.0		µg/L	1	1/5/2023 3:38:24 PM	R93747
1,1-Dichloroethene	ND	1.0	1.0		µg/L	1	1/5/2023 3:38:24 PM	R93747
Isopropylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 3:38:24 PM	R93747
4-Isopropyltoluene	ND	1.0	1.0		µg/L	1	1/5/2023 3:38:24 PM	R93747
Methylene Chloride	ND	3.0	3.0		µg/L	1	1/5/2023 3:38:24 PM	R93747
n-Butylbenzene	ND	3.0	3.0		µg/L	1	1/5/2023 3:38:24 PM	R93747
n-Propylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 3:38:24 PM	R93747
sec-Butylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 3:38:24 PM	R93747
Styrene	ND	1.0	1.0		µg/L	1	1/5/2023 3:38:24 PM	R93747
Tetrachloroethene (PCE)	ND	1.0	1.0		µg/L	1	1/5/2023 3:38:24 PM	R93747
1,1,1-Trichloroethane	ND	1.0	1.0		µg/L	1	1/5/2023 3:38:24 PM	R93747
Trichloroethene (TCE)	ND	1.0	1.0		µg/L	1	1/5/2023 3:38:24 PM	R93747
Vinyl chloride	ND	1.0	1.0		µg/L	1	1/5/2023 3:38:24 PM	R93747
Xylenes, Total	ND	1.5	1.5		µg/L	1	1/5/2023 3:38:24 PM	R93747
Surr: 1,2-Dichloroethane-d4	99.4	0	70-130		%Rec	1	1/5/2023 3:38:24 PM	R93747
Surr: 4-Bromofluorobenzene	108	0	70-130		%Rec	1	1/5/2023 3:38:24 PM	R93747
Surr: Dibromofluoromethane	94.1	0	70-130		%Rec	1	1/5/2023 3:38:24 PM	R93747
Surr: Toluene-d8	94.2	0	70-130		%Rec	1	1/5/2023 3:38:24 PM	R93747

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212F05**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-29-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/29/2022 11:00:00 AM
Lab ID: 2212F05-001B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	1/4/2023 1:24:20 PM	72430

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212F05**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-29-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/29/2022 11:00:00 AM
Lab ID: 2212F05-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.024	0.016	0.064	J	mg/L	1	1/9/2023 2:03:15 PM	72395
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	1/9/2023 2:03:15 PM	72395
Surr: DNOP	113	0	15.9-177		%Rec	1	1/9/2023 2:03:15 PM	72395
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	1/10/2023 1:01:57 PM	72406
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	1/10/2023 1:01:57 PM	72406
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	1/10/2023 1:01:57 PM	72406
Di-n-octyl phthalate	ND	12	20		µg/L	1	1/10/2023 1:01:57 PM	72406
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	1/10/2023 1:01:57 PM	72406
Diethyl phthalate	ND	6.0	10		µg/L	1	1/10/2023 1:01:57 PM	72406
Dimethyl phthalate	ND	6.0	10		µg/L	1	1/10/2023 1:01:57 PM	72406
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	1/10/2023 1:01:57 PM	72406
2,4-Dinitrophenol	ND	16	20		µg/L	1	1/10/2023 1:01:57 PM	72406
2-Methylphenol	ND	5.0	10		µg/L	1	1/10/2023 1:01:57 PM	72406
3+4-Methylphenol	ND	5.1	10		µg/L	1	1/10/2023 1:01:57 PM	72406
Phenol	ND	18	20		µg/L	1	1/10/2023 1:01:57 PM	72406
Pyridine	ND	14	40		µg/L	1	1/10/2023 1:01:57 PM	72406
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	1/10/2023 1:01:57 PM	72406
Surr: 2-Fluorophenol	51.3	0	15-84.5		%Rec	1	1/10/2023 1:01:57 PM	72406
Surr: Phenol-d5	40.8	0	15-67		%Rec	1	1/10/2023 1:01:57 PM	72406
Surr: 2,4,6-Tribromophenol	58.9	0	15-108		%Rec	1	1/10/2023 1:01:57 PM	72406
Surr: Nitrobenzene-d5	66.3	0	16.8-112		%Rec	1	1/10/2023 1:01:57 PM	72406
Surr: 2-Fluorobiphenyl	61.0	0	15-101		%Rec	1	1/10/2023 1:01:57 PM	72406
Surr: 4-Terphenyl-d14	86.1	0	34.4-134		%Rec	1	1/10/2023 1:01:57 PM	72406
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	1/5/2023 9:01:00 AM	72406
Naphthalene	ND	0.20	0.30		µg/L	1	1/5/2023 9:01:00 AM	72406
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	1/5/2023 9:01:00 AM	72406
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	1/5/2023 9:01:00 AM	72406
Acenaphthene	ND	0.14	0.30		µg/L	1	1/5/2023 9:01:00 AM	72406
Fluorene	ND	0.095	0.30		µg/L	1	1/5/2023 9:01:00 AM	72406
Phenanthrene	ND	0.16	0.30		µg/L	1	1/5/2023 9:01:00 AM	72406
Anthracene	ND	0.14	0.30		µg/L	1	1/5/2023 9:01:00 AM	72406
Fluoranthene	ND	0.14	0.30		µg/L	1	1/5/2023 9:01:00 AM	72406
Pyrene	ND	0.32	1.0		µg/L	1	1/5/2023 9:01:00 AM	72406
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	1/5/2023 9:01:00 AM	72406
Chrysene	ND	0.25	0.30		µg/L	1	1/5/2023 9:01:00 AM	72406
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	1/5/2023 9:01:00 AM	72406
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	1/5/2023 9:01:00 AM	72406

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212F05**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-29-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/29/2022 11:00:00 AM
Lab ID: 2212F05-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	56.7	0	15-108		%Rec	1	1/5/2023 9:01:00 AM	72406
Surr: 2-Fluorobiphenyl	47.8	0	15-107		%Rec	1	1/5/2023 9:01:00 AM	72406
Surr: 4-Terphenyl-d14	85.4	0	15-166		%Rec	1	1/5/2023 9:01:00 AM	72406

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212F05**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-29-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/29/2022 11:00:00 AM
Lab ID: 2212F05-001D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	ND	0.0016	0.0030		mg/L	1	1/9/2023 4:20:42 PM	72410
Beryllium	ND	0.00060	0.0020		mg/L	1	1/9/2023 10:28:52 AM	72410
Cadmium	ND	0.0018	0.0020		mg/L	1	1/9/2023 10:28:52 AM	72410
Chromium	ND	0.0020	0.0060		mg/L	1	1/9/2023 10:28:52 AM	72410
Cobalt	ND	0.0035	0.0060		mg/L	1	1/9/2023 4:20:42 PM	72410
Nickel	ND	0.0053	0.010		mg/L	1	1/9/2023 10:28:52 AM	72410
Silver	ND	0.0018	0.0050		mg/L	1	1/9/2023 10:28:52 AM	72410
Vanadium	ND	0.0035	0.050		mg/L	1	1/9/2023 10:28:52 AM	72410
Zinc	0.0065	0.0039	0.010	J	mg/L	1	1/9/2023 10:28:52 AM	72410
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	1/6/2023 10:07:54 AM	72410
Arsenic	ND	0.00022	0.0010		mg/L	1	1/6/2023 10:07:54 AM	72410
Lead	ND	0.00019	0.00050		mg/L	1	1/6/2023 10:07:54 AM	72410
Selenium	0.00090	0.00089	0.0010	J	mg/L	1	1/6/2023 10:07:54 AM	72410
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	1/18/2023 12:41:56 PM	72676

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212F05**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-29-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/29/2022 11:00:00 AM
Lab ID: 2212F05-001E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	ND	0.0011	0.0020		mg/L	1	1/9/2023 11:58:40 AM	A93838
Beryllium	ND	0.00059	0.0020		mg/L	1	1/9/2023 11:58:40 AM	A93838
Cadmium	ND	0.00098	0.0020		mg/L	1	1/9/2023 11:58:40 AM	A93838
Chromium	ND	0.0020	0.0060		mg/L	1	1/9/2023 11:58:40 AM	A93838
Cobalt	ND	0.0024	0.0060		mg/L	1	1/9/2023 11:58:40 AM	A93838
Nickel	ND	0.0033	0.010		mg/L	1	1/9/2023 11:58:40 AM	A93838
Silver	ND	0.0013	0.0050		mg/L	1	1/9/2023 11:58:40 AM	A93838
Vanadium	ND	0.0017	0.050		mg/L	1	1/9/2023 11:58:40 AM	A93838
Zinc	ND	0.0032	0.010		mg/L	1	1/9/2023 11:58:40 AM	A93838
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00045	0.0010		mg/L	1	1/10/2023 3:12:50 PM	B93855
Arsenic	ND	0.00057	0.0010		mg/L	1	1/10/2023 3:12:50 PM	B93855
Lead	ND	0.000099	0.00050		mg/L	1	1/10/2023 3:12:50 PM	B93855
Selenium	ND	0.00056	0.0010		mg/L	1	1/10/2023 3:12:50 PM	B93855
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	1/18/2023 12:44:04 PM	72676

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212F05**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-30
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/29/2022 11:20:00 AM
Lab ID: 2212F05-002A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	0.94	0.0090	0.050		mg/L	1	1/4/2023 5:06:22 PM	R93719
Surr: BFB	86.0	0	70-130		%Rec	1	1/4/2023 5:06:22 PM	R93719
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	1.0	1.0		µg/L	1	1/5/2023 4:05:31 PM	R93747
Toluene	ND	1.0	1.0		µg/L	1	1/5/2023 4:05:31 PM	R93747
Ethylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 4:05:31 PM	R93747
Methyl tert-butyl ether (MTBE)	910	10	10		µg/L	10	1/6/2023 10:53:46 AM	R93792
1,2,4-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 4:05:31 PM	R93747
1,3,5-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 4:05:31 PM	R93747
1,2-Dichloroethane (EDC)	ND	1.0	1.0		µg/L	1	1/5/2023 4:05:31 PM	R93747
Acetone	ND	10	10		µg/L	1	1/5/2023 4:05:31 PM	R93747
Bromomethane	ND	3.0	3.0		µg/L	1	1/5/2023 4:05:31 PM	R93747
2-Butanone	ND	10	10		µg/L	1	1/5/2023 4:05:31 PM	R93747
Carbon disulfide	ND	10	10		µg/L	1	1/5/2023 4:05:31 PM	R93747
Chlorobenzene	ND	1.0	1.0		µg/L	1	1/5/2023 4:05:31 PM	R93747
Chloroform	ND	1.0	1.0		µg/L	1	1/5/2023 4:05:31 PM	R93747
Chloromethane	ND	3.0	3.0		µg/L	1	1/5/2023 4:05:31 PM	R93747
cis-1,2-DCE	ND	1.0	1.0		µg/L	1	1/5/2023 4:05:31 PM	R93747
1,1-Dichloroethane	ND	1.0	1.0		µg/L	1	1/5/2023 4:05:31 PM	R93747
1,1-Dichloroethene	ND	1.0	1.0		µg/L	1	1/5/2023 4:05:31 PM	R93747
Isopropylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 4:05:31 PM	R93747
4-Isopropyltoluene	ND	1.0	1.0		µg/L	1	1/5/2023 4:05:31 PM	R93747
Methylene Chloride	ND	3.0	3.0		µg/L	1	1/5/2023 4:05:31 PM	R93747
n-Butylbenzene	ND	3.0	3.0		µg/L	1	1/5/2023 4:05:31 PM	R93747
n-Propylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 4:05:31 PM	R93747
sec-Butylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 4:05:31 PM	R93747
Styrene	ND	1.0	1.0		µg/L	1	1/5/2023 4:05:31 PM	R93747
Tetrachloroethene (PCE)	ND	1.0	1.0		µg/L	1	1/5/2023 4:05:31 PM	R93747
1,1,1-Trichloroethane	ND	1.0	1.0		µg/L	1	1/5/2023 4:05:31 PM	R93747
Trichloroethene (TCE)	ND	1.0	1.0		µg/L	1	1/5/2023 4:05:31 PM	R93747
Vinyl chloride	ND	1.0	1.0		µg/L	1	1/5/2023 4:05:31 PM	R93747
Xylenes, Total	ND	1.5	1.5		µg/L	1	1/5/2023 4:05:31 PM	R93747
Surr: 1,2-Dichloroethane-d4	94.1	0	70-130		%Rec	1	1/5/2023 4:05:31 PM	R93747
Surr: 4-Bromofluorobenzene	95.8	0	70-130		%Rec	1	1/5/2023 4:05:31 PM	R93747
Surr: Dibromofluoromethane	93.4	0	70-130		%Rec	1	1/5/2023 4:05:31 PM	R93747
Surr: Toluene-d8	98.8	0	70-130		%Rec	1	1/5/2023 4:05:31 PM	R93747

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212F05**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-30
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/29/2022 11:20:00 AM
Lab ID: 2212F05-002B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	1/4/2023 1:39:16 PM	72430

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212F05**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-30
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/29/2022 11:20:00 AM
Lab ID: 2212F05-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	2.0	0.016	0.064	BE	mg/L	1	1/9/2023 2:50:59 PM	72395
Motor Oil Range Organics (MRO)	0.11	0.052	0.080		mg/L	1	1/9/2023 2:50:59 PM	72395
Surr: DNOP	104	0	15.9-177		%Rec	1	1/9/2023 2:50:59 PM	72395
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	1/10/2023 5:11:35 PM	72406
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	1/10/2023 5:11:35 PM	72406
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	1/10/2023 5:11:35 PM	72406
Di-n-octyl phthalate	ND	12	20		µg/L	1	1/10/2023 5:11:35 PM	72406
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	1/10/2023 5:11:35 PM	72406
Diethyl phthalate	ND	6.0	10		µg/L	1	1/10/2023 5:11:35 PM	72406
Dimethyl phthalate	ND	6.0	10		µg/L	1	1/10/2023 5:11:35 PM	72406
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	1/10/2023 5:11:35 PM	72406
2,4-Dinitrophenol	ND	16	20		µg/L	1	1/10/2023 5:11:35 PM	72406
2-Methylphenol	ND	5.0	10		µg/L	1	1/10/2023 5:11:35 PM	72406
3+4-Methylphenol	ND	5.1	10		µg/L	1	1/10/2023 5:11:35 PM	72406
Phenol	ND	18	20		µg/L	1	1/10/2023 5:11:35 PM	72406
Pyridine	ND	14	40		µg/L	1	1/10/2023 5:11:35 PM	72406
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	1/10/2023 5:11:35 PM	72406
Surr: 2-Fluorophenol	31.9	0	15-84.5		%Rec	1	1/10/2023 5:11:35 PM	72406
Surr: Phenol-d5	35.6	0	15-67		%Rec	1	1/10/2023 5:11:35 PM	72406
Surr: 2,4,6-Tribromophenol	21.3	0	15-108		%Rec	1	1/10/2023 5:11:35 PM	72406
Surr: Nitrobenzene-d5	56.2	0	16.8-112		%Rec	1	1/10/2023 5:11:35 PM	72406
Surr: 2-Fluorobiphenyl	48.2	0	15-101		%Rec	1	1/10/2023 5:11:35 PM	72406
Surr: 4-Terphenyl-d14	85.7	0	34.4-134		%Rec	1	1/10/2023 5:11:35 PM	72406
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	1/5/2023 5:01:00 PM	R93750
Naphthalene	ND	0.20	0.30		µg/L	1	1/5/2023 5:01:00 PM	R93750
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	1/5/2023 5:01:00 PM	R93750
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	1/5/2023 5:01:00 PM	R93750
Acenaphthene	ND	0.14	0.30		µg/L	1	1/5/2023 5:01:00 PM	R93750
Fluorene	ND	0.095	0.30		µg/L	1	1/5/2023 5:01:00 PM	R93750
Phenanthrene	ND	0.16	0.30		µg/L	1	1/5/2023 5:01:00 PM	R93750
Anthracene	0.26	0.14	0.30	J	µg/L	1	1/5/2023 5:01:00 PM	R93750
Fluoranthene	ND	0.14	0.30		µg/L	1	1/5/2023 5:01:00 PM	R93750
Pyrene	ND	0.32	1.0		µg/L	1	1/5/2023 5:01:00 PM	R93750
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	1/5/2023 5:01:00 PM	R93750
Chrysene	ND	0.25	0.30		µg/L	1	1/5/2023 5:01:00 PM	R93750
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	1/5/2023 5:01:00 PM	R93750
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	1/5/2023 5:01:00 PM	R93750

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212F05**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-30
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/29/2022 11:20:00 AM
Lab ID: 2212F05-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	51.8	0	15-108		%Rec	1	1/5/2023 5:01:00 PM	R93750
Surr: 2-Fluorobiphenyl	41.8	0	15-107		%Rec	1	1/5/2023 5:01:00 PM	R93750
Surr: 4-Terphenyl-d14	78.3	0	15-166		%Rec	1	1/5/2023 5:01:00 PM	R93750

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212F05**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-30
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/29/2022 11:20:00 AM
Lab ID: 2212F05-002D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.12	0.0016	0.0030		mg/L	1	1/9/2023 4:22:59 PM	72410
Beryllium	ND	0.00060	0.0020		mg/L	1	1/9/2023 10:30:30 AM	72410
Cadmium	ND	0.0018	0.0020		mg/L	1	1/9/2023 10:30:30 AM	72410
Chromium	ND	0.0020	0.0060		mg/L	1	1/9/2023 10:30:30 AM	72410
Cobalt	ND	0.0035	0.0060		mg/L	1	1/9/2023 4:22:59 PM	72410
Nickel	0.098	0.0053	0.010		mg/L	1	1/9/2023 10:30:30 AM	72410
Silver	ND	0.0018	0.0050		mg/L	1	1/9/2023 10:30:30 AM	72410
Vanadium	ND	0.0035	0.050		mg/L	1	1/9/2023 10:30:30 AM	72410
Zinc	ND	0.0039	0.010		mg/L	1	1/9/2023 10:30:30 AM	72410
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	1/6/2023 10:10:21 AM	72410
Arsenic	0.00085	0.00022	0.0010	J	mg/L	1	1/6/2023 10:10:21 AM	72410
Lead	0.00067	0.00019	0.00050		mg/L	1	1/6/2023 10:10:21 AM	72410
Selenium	0.0015	0.00089	0.0010		mg/L	1	1/6/2023 10:10:21 AM	72410
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	1/18/2023 12:46:11 PM	72676

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212F05**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-30
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/29/2022 11:20:00 AM
Lab ID: 2212F05-002E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.13	0.0056	0.010		mg/L	5	1/5/2023 10:25:15 PM	C93766
Beryllium	0.0029	0.0029	0.010	J	mg/L	5	1/5/2023 10:25:15 PM	C93766
Cadmium	ND	0.0049	0.010		mg/L	5	1/5/2023 10:25:15 PM	C93766
Chromium	ND	0.0098	0.030		mg/L	5	1/5/2023 10:25:15 PM	C93766
Cobalt	ND	0.012	0.030		mg/L	5	1/5/2023 10:25:15 PM	C93766
Nickel	0.089	0.016	0.050		mg/L	5	1/5/2023 10:25:15 PM	C93766
Silver	ND	0.0063	0.025		mg/L	5	1/5/2023 10:25:15 PM	C93766
Vanadium	ND	0.0086	0.25		mg/L	5	1/5/2023 10:25:15 PM	C93766
Zinc	ND	0.016	0.050		mg/L	5	1/5/2023 10:25:15 PM	C93766
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00045	0.0010		mg/L	1	1/10/2023 3:18:11 PM	B93855
Arsenic	0.0011	0.00057	0.0010		mg/L	1	1/10/2023 3:18:11 PM	B93855
Lead	0.00025	0.000099	0.00050	J	mg/L	1	1/10/2023 3:18:11 PM	B93855
Selenium	0.0065	0.00056	0.0010		mg/L	1	1/10/2023 3:18:11 PM	B93855
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	1/18/2023 12:48:19 PM	72676

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212F05**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-14
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/29/2022 12:00:00 PM
Lab ID: 2212F05-003A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	57	0.45	2.5		mg/L	50	1/4/2023 6:16:49 PM	R93719
Surr: BFB	91.6	0	70-130		%Rec	50	1/4/2023 6:16:49 PM	R93719
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	27000	500	500		µg/L	500	1/5/2023 5:26:39 PM	R93747
Toluene	ND	50	50		µg/L	50	1/5/2023 5:53:43 PM	R93747
Ethylbenzene	1100	50	50		µg/L	50	1/5/2023 5:53:43 PM	R93747
Methyl tert-butyl ether (MTBE)	650	50	50		µg/L	50	1/5/2023 5:53:43 PM	R93747
1,2,4-Trimethylbenzene	ND	50	50		µg/L	50	1/5/2023 5:53:43 PM	R93747
1,3,5-Trimethylbenzene	ND	50	50		µg/L	50	1/5/2023 5:53:43 PM	R93747
1,2-Dichloroethane (EDC)	ND	50	50		µg/L	50	1/5/2023 5:53:43 PM	R93747
Acetone	ND	500	500		µg/L	50	1/5/2023 5:53:43 PM	R93747
Bromomethane	ND	150	150		µg/L	50	1/5/2023 5:53:43 PM	R93747
2-Butanone	ND	500	500		µg/L	50	1/5/2023 5:53:43 PM	R93747
Carbon disulfide	ND	500	500		µg/L	50	1/5/2023 5:53:43 PM	R93747
Chlorobenzene	ND	50	50		µg/L	50	1/5/2023 5:53:43 PM	R93747
Chloroform	ND	50	50		µg/L	50	1/5/2023 5:53:43 PM	R93747
Chloromethane	ND	150	150		µg/L	50	1/5/2023 5:53:43 PM	R93747
cis-1,2-DCE	ND	50	50		µg/L	50	1/5/2023 5:53:43 PM	R93747
1,1-Dichloroethane	ND	50	50		µg/L	50	1/5/2023 5:53:43 PM	R93747
1,1-Dichloroethene	ND	50	50		µg/L	50	1/5/2023 5:53:43 PM	R93747
Isopropylbenzene	ND	50	50		µg/L	50	1/5/2023 5:53:43 PM	R93747
4-Isopropyltoluene	ND	50	50		µg/L	50	1/5/2023 5:53:43 PM	R93747
Methylene Chloride	ND	150	150		µg/L	50	1/5/2023 5:53:43 PM	R93747
n-Butylbenzene	ND	150	150		µg/L	50	1/5/2023 5:53:43 PM	R93747
n-Propylbenzene	58	50	50		µg/L	50	1/5/2023 5:53:43 PM	R93747
sec-Butylbenzene	ND	50	50		µg/L	50	1/5/2023 5:53:43 PM	R93747
Styrene	ND	50	50		µg/L	50	1/5/2023 5:53:43 PM	R93747
Tetrachloroethene (PCE)	ND	50	50		µg/L	50	1/5/2023 5:53:43 PM	R93747
1,1,1-Trichloroethane	ND	50	50		µg/L	50	1/5/2023 5:53:43 PM	R93747
Trichloroethene (TCE)	ND	50	50		µg/L	50	1/5/2023 5:53:43 PM	R93747
Vinyl chloride	ND	50	50		µg/L	50	1/5/2023 5:53:43 PM	R93747
Xylenes, Total	ND	75	75		µg/L	50	1/5/2023 5:53:43 PM	R93747
Surr: 1,2-Dichloroethane-d4	100	0	70-130		%Rec	50	1/5/2023 5:53:43 PM	R93747
Surr: 4-Bromofluorobenzene	96.7	0	70-130		%Rec	50	1/5/2023 5:53:43 PM	R93747
Surr: Dibromofluoromethane	101	0	70-130		%Rec	50	1/5/2023 5:53:43 PM	R93747
Surr: Toluene-d8	92.5	0	70-130		%Rec	50	1/5/2023 5:53:43 PM	R93747

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

Analytical Report
Lab Order: **2212F05**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-14
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/29/2022 12:00:00 PM
Lab ID: 2212F05-003B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	1/4/2023 1:54:08 PM	72430

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212F05**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-14
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/29/2022 12:00:00 PM
Lab ID: 2212F05-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	3.4	0.016	0.064	BE	mg/L	1	1/9/2023 3:14:52 PM	72395
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	1/9/2023 3:14:52 PM	72395
Surr: DNOP	110	0	15.9-177		%Rec	1	1/9/2023 3:14:52 PM	72395
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	1/10/2023 5:53:02 PM	72406
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	1/10/2023 5:53:02 PM	72406
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	1/10/2023 5:53:02 PM	72406
Di-n-octyl phthalate	ND	12	20		µg/L	1	1/10/2023 5:53:02 PM	72406
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	1/10/2023 5:53:02 PM	72406
Diethyl phthalate	ND	6.0	10		µg/L	1	1/10/2023 5:53:02 PM	72406
Dimethyl phthalate	ND	6.0	10		µg/L	1	1/10/2023 5:53:02 PM	72406
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	1/10/2023 5:53:02 PM	72406
2,4-Dinitrophenol	ND	16	20		µg/L	1	1/10/2023 5:53:02 PM	72406
2-Methylphenol	ND	5.0	10		µg/L	1	1/10/2023 5:53:02 PM	72406
3+4-Methylphenol	ND	5.1	10		µg/L	1	1/10/2023 5:53:02 PM	72406
Phenol	33	18	20		µg/L	1	1/10/2023 5:53:02 PM	72406
Pyridine	ND	14	40		µg/L	1	1/10/2023 5:53:02 PM	72406
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	1/10/2023 5:53:02 PM	72406
Surr: 2-Fluorophenol	16.6	0	15-84.5		%Rec	1	1/10/2023 5:53:02 PM	72406
Surr: Phenol-d5	31.1	0	15-67		%Rec	1	1/10/2023 5:53:02 PM	72406
Surr: 2,4,6-Tribromophenol	10.7	0	15-108	S	%Rec	1	1/10/2023 5:53:02 PM	72406
Surr: Nitrobenzene-d5	56.4	0	16.8-112		%Rec	1	1/10/2023 5:53:02 PM	72406
Surr: 2-Fluorobiphenyl	48.3	0	15-101		%Rec	1	1/10/2023 5:53:02 PM	72406
Surr: 4-Terphenyl-d14	78.4	0	34.4-134		%Rec	1	1/10/2023 5:53:02 PM	72406
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	1.0	0.11	1.0		µg/L	1	1/5/2023 5:45:00 PM	72406
Naphthalene	11	0.20	0.30		µg/L	1	1/5/2023 5:45:00 PM	72406
1-Methylnaphthalene	16	0.15	0.30		µg/L	1	1/5/2023 5:45:00 PM	72406
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	1/5/2023 5:45:00 PM	72406
Acenaphthene	0.38	0.14	0.30		µg/L	1	1/5/2023 5:45:00 PM	72406
Fluorene	0.58	0.095	0.30		µg/L	1	1/5/2023 5:45:00 PM	72406
Phenanthrene	0.34	0.16	0.30		µg/L	1	1/5/2023 5:45:00 PM	72406
Anthracene	ND	0.14	0.30		µg/L	1	1/5/2023 5:45:00 PM	72406
Fluoranthene	ND	0.14	0.30		µg/L	1	1/5/2023 5:45:00 PM	72406
Pyrene	ND	0.32	1.0		µg/L	1	1/5/2023 5:45:00 PM	72406
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	1/5/2023 5:45:00 PM	72406
Chrysene	ND	0.25	0.30		µg/L	1	1/5/2023 5:45:00 PM	72406
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	1/5/2023 5:45:00 PM	72406
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	1/5/2023 5:45:00 PM	72406

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212F05**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-14
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/29/2022 12:00:00 PM
Lab ID: 2212F05-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	52.1	0	15-108		%Rec	1	1/5/2023 5:45:00 PM	72406
Surr: 2-Fluorobiphenyl	37.0	0	15-107		%Rec	1	1/5/2023 5:45:00 PM	72406
Surr: 4-Terphenyl-d14	71.7	0	15-166		%Rec	1	1/5/2023 5:45:00 PM	72406

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212F05**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-14
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/29/2022 12:00:00 PM
Lab ID: 2212F05-003D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	2.0	0.0079	0.015		mg/L	5	1/9/2023 4:29:19 PM	72410
Beryllium	ND	0.00060	0.0020		mg/L	1	1/9/2023 10:32:11 AM	72410
Cadmium	ND	0.0018	0.0020		mg/L	1	1/9/2023 10:32:11 AM	72410
Chromium	ND	0.0020	0.0060		mg/L	1	1/9/2023 10:32:11 AM	72410
Cobalt	ND	0.0035	0.0060		mg/L	1	1/9/2023 4:26:00 PM	72410
Nickel	0.084	0.0053	0.010		mg/L	1	1/9/2023 10:32:11 AM	72410
Silver	ND	0.0018	0.0050		mg/L	1	1/9/2023 10:32:11 AM	72410
Vanadium	ND	0.0035	0.050		mg/L	1	1/9/2023 10:32:11 AM	72410
Zinc	0.0066	0.0039	0.010	J	mg/L	1	1/9/2023 10:32:11 AM	72410
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	1/6/2023 10:20:06 AM	72410
Arsenic	0.0023	0.00022	0.0010		mg/L	1	1/6/2023 10:20:06 AM	72410
Lead	ND	0.00019	0.00050		mg/L	1	1/6/2023 10:20:06 AM	72410
Selenium	ND	0.00089	0.0010		mg/L	1	1/6/2023 10:20:06 AM	72410
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00039	0.000091	0.00020		mg/L	1	1/18/2023 1:49:02 PM	72676

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212F05**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-14
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/29/2022 12:00:00 PM
Lab ID: 2212F05-003E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	2.2	0.0056	0.010	*	mg/L	5	1/5/2023 10:31:29 PM	C93766
Beryllium	ND	0.00059	0.0020		mg/L	1	1/5/2023 10:28:08 PM	C93766
Cadmium	ND	0.00098	0.0020		mg/L	1	1/5/2023 10:28:08 PM	C93766
Chromium	ND	0.0020	0.0060		mg/L	1	1/5/2023 10:28:08 PM	C93766
Cobalt	ND	0.0024	0.0060		mg/L	1	1/5/2023 10:28:08 PM	C93766
Nickel	0.086	0.0033	0.010		mg/L	1	1/5/2023 10:28:08 PM	C93766
Silver	ND	0.0013	0.0050		mg/L	1	1/5/2023 10:28:08 PM	C93766
Vanadium	0.0019	0.0017	0.050	J	mg/L	1	1/5/2023 10:28:08 PM	C93766
Zinc	ND	0.0032	0.010		mg/L	1	1/5/2023 10:28:08 PM	C93766
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00045	0.0010		mg/L	1	1/10/2023 3:23:33 PM	B93855
Arsenic	0.0039	0.00057	0.0010		mg/L	1	1/10/2023 3:23:33 PM	B93855
Lead	ND	0.000099	0.00050		mg/L	1	1/10/2023 3:23:33 PM	B93855
Selenium	0.0080	0.00056	0.0010		mg/L	1	1/10/2023 3:23:33 PM	B93855
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	1/18/2023 1:51:10 PM	72676

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212F05**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1 to EP-2
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/29/2022 12:15:00 PM
Lab ID: 2212F05-004A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	1/4/2023 6:40:16 PM	R93719
Surr: BFB	83.6	0	70-130		%Rec	1	1/4/2023 6:40:16 PM	R93719
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	1.0	1.0		µg/L	1	1/5/2023 6:20:47 PM	R93747
Toluene	ND	1.0	1.0		µg/L	1	1/5/2023 6:20:47 PM	R93747
Ethylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 6:20:47 PM	R93747
Methyl tert-butyl ether (MTBE)	ND	1.0	1.0		µg/L	1	1/5/2023 6:20:47 PM	R93747
1,2,4-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 6:20:47 PM	R93747
1,3,5-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 6:20:47 PM	R93747
1,2-Dichloroethane (EDC)	ND	1.0	1.0		µg/L	1	1/5/2023 6:20:47 PM	R93747
Acetone	14	10	10		µg/L	1	1/5/2023 6:20:47 PM	R93747
Bromomethane	ND	3.0	3.0		µg/L	1	1/5/2023 6:20:47 PM	R93747
2-Butanone	ND	10	10		µg/L	1	1/5/2023 6:20:47 PM	R93747
Carbon disulfide	ND	10	10		µg/L	1	1/5/2023 6:20:47 PM	R93747
Chlorobenzene	ND	1.0	1.0		µg/L	1	1/5/2023 6:20:47 PM	R93747
Chloroform	ND	1.0	1.0		µg/L	1	1/5/2023 6:20:47 PM	R93747
Chloromethane	ND	3.0	3.0		µg/L	1	1/5/2023 6:20:47 PM	R93747
cis-1,2-DCE	ND	1.0	1.0		µg/L	1	1/5/2023 6:20:47 PM	R93747
1,1-Dichloroethane	ND	1.0	1.0		µg/L	1	1/5/2023 6:20:47 PM	R93747
1,1-Dichloroethene	ND	1.0	1.0		µg/L	1	1/5/2023 6:20:47 PM	R93747
Isopropylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 6:20:47 PM	R93747
4-Isopropyltoluene	ND	1.0	1.0		µg/L	1	1/5/2023 6:20:47 PM	R93747
Methylene Chloride	ND	3.0	3.0		µg/L	1	1/5/2023 6:20:47 PM	R93747
n-Butylbenzene	ND	3.0	3.0		µg/L	1	1/5/2023 6:20:47 PM	R93747
n-Propylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 6:20:47 PM	R93747
sec-Butylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 6:20:47 PM	R93747
Styrene	ND	1.0	1.0		µg/L	1	1/5/2023 6:20:47 PM	R93747
Tetrachloroethene (PCE)	ND	1.0	1.0		µg/L	1	1/5/2023 6:20:47 PM	R93747
1,1,1-Trichloroethane	ND	1.0	1.0		µg/L	1	1/5/2023 6:20:47 PM	R93747
Trichloroethene (TCE)	ND	1.0	1.0		µg/L	1	1/5/2023 6:20:47 PM	R93747
Vinyl chloride	ND	1.0	1.0		µg/L	1	1/5/2023 6:20:47 PM	R93747
Xylenes, Total	ND	1.5	1.5		µg/L	1	1/5/2023 6:20:47 PM	R93747
Surr: 1,2-Dichloroethane-d4	89.7	0	70-130		%Rec	1	1/5/2023 6:20:47 PM	R93747
Surr: 4-Bromofluorobenzene	95.5	0	70-130		%Rec	1	1/5/2023 6:20:47 PM	R93747
Surr: Dibromofluoromethane	90.8	0	70-130		%Rec	1	1/5/2023 6:20:47 PM	R93747
Surr: Toluene-d8	93.3	0	70-130		%Rec	1	1/5/2023 6:20:47 PM	R93747

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212F05**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1 to EP-2
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/29/2022 12:15:00 PM
Lab ID: 2212F05-004B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	1/4/2023 2:09:02 PM	72430

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212F05**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1 to EP-2
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/29/2022 12:15:00 PM
Lab ID: 2212F05-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.65	0.016	0.064	BE	mg/L	1	1/9/2023 3:38:44 PM	72395
Motor Oil Range Organics (MRO)	0.76	0.052	0.080		mg/L	1	1/9/2023 3:38:44 PM	72395
Surr: DNOP	73.7	0	15.9-177		%Rec	1	1/9/2023 3:38:44 PM	72395
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	1/10/2023 6:34:14 PM	72406
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	1/10/2023 6:34:14 PM	72406
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	1/10/2023 6:34:14 PM	72406
Di-n-octyl phthalate	ND	12	20		µg/L	1	1/10/2023 6:34:14 PM	72406
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	1/10/2023 6:34:14 PM	72406
Diethyl phthalate	ND	6.0	10		µg/L	1	1/10/2023 6:34:14 PM	72406
Dimethyl phthalate	ND	6.0	10		µg/L	1	1/10/2023 6:34:14 PM	72406
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	1/10/2023 6:34:14 PM	72406
2,4-Dinitrophenol	ND	16	20		µg/L	1	1/10/2023 6:34:14 PM	72406
2-Methylphenol	ND	5.0	10		µg/L	1	1/10/2023 6:34:14 PM	72406
3+4-Methylphenol	ND	5.1	10		µg/L	1	1/10/2023 6:34:14 PM	72406
Phenol	ND	18	20		µg/L	1	1/10/2023 6:34:14 PM	72406
Pyridine	ND	14	40		µg/L	1	1/10/2023 6:34:14 PM	72406
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	1/10/2023 6:34:14 PM	72406
Surr: 2-Fluorophenol	32.8	0	15-84.5		%Rec	1	1/10/2023 6:34:14 PM	72406
Surr: Phenol-d5	25.8	0	15-67		%Rec	1	1/10/2023 6:34:14 PM	72406
Surr: 2,4,6-Tribromophenol	52.8	0	15-108		%Rec	1	1/10/2023 6:34:14 PM	72406
Surr: Nitrobenzene-d5	37.8	0	16.8-112		%Rec	1	1/10/2023 6:34:14 PM	72406
Surr: 2-Fluorobiphenyl	29.6	0	15-101		%Rec	1	1/10/2023 6:34:14 PM	72406
Surr: 4-Terphenyl-d14	58.8	0	34.4-134		%Rec	1	1/10/2023 6:34:14 PM	72406
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	1/5/2023 6:29:00 PM	R93750
Naphthalene	ND	0.20	0.30		µg/L	1	1/5/2023 6:29:00 PM	R93750
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	1/5/2023 6:29:00 PM	R93750
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	1/5/2023 6:29:00 PM	R93750
Acenaphthene	ND	0.14	0.30		µg/L	1	1/5/2023 6:29:00 PM	R93750
Fluorene	ND	0.095	0.30		µg/L	1	1/5/2023 6:29:00 PM	R93750
Phenanthrene	ND	0.16	0.30		µg/L	1	1/5/2023 6:29:00 PM	R93750
Anthracene	ND	0.14	0.30		µg/L	1	1/5/2023 6:29:00 PM	R93750
Fluoranthene	ND	0.14	0.30		µg/L	1	1/5/2023 6:29:00 PM	R93750
Pyrene	ND	0.32	1.0		µg/L	1	1/5/2023 6:29:00 PM	R93750
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	1/5/2023 6:29:00 PM	R93750
Chrysene	ND	0.25	0.30		µg/L	1	1/5/2023 6:29:00 PM	R93750
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	1/5/2023 6:29:00 PM	R93750
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	1/5/2023 6:29:00 PM	R93750

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212F05**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1 to EP-2
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/29/2022 12:15:00 PM
Lab ID: 2212F05-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	31.0	0	15-108		%Rec	1	1/5/2023 6:29:00 PM	R93750
Surr: 2-Fluorobiphenyl	22.2	0	15-107		%Rec	1	1/5/2023 6:29:00 PM	R93750
Surr: 4-Terphenyl-d14	46.7	0	15-166		%Rec	1	1/5/2023 6:29:00 PM	R93750

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212F05**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1 to EP-2
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/29/2022 12:15:00 PM
Lab ID: 2212F05-004D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.020	0.0016	0.0030		mg/L	1	1/9/2023 4:32:17 PM	72410
Beryllium	ND	0.00060	0.0020		mg/L	1	1/9/2023 10:33:35 AM	72410
Cadmium	ND	0.0018	0.0020		mg/L	1	1/9/2023 10:33:35 AM	72410
Chromium	ND	0.0020	0.0060		mg/L	1	1/9/2023 10:33:35 AM	72410
Cobalt	ND	0.0035	0.0060		mg/L	1	1/9/2023 4:32:17 PM	72410
Nickel	ND	0.0053	0.010		mg/L	1	1/9/2023 10:33:35 AM	72410
Silver	ND	0.0018	0.0050		mg/L	1	1/9/2023 10:33:35 AM	72410
Vanadium	ND	0.0035	0.050		mg/L	1	1/9/2023 10:33:35 AM	72410
Zinc	0.028	0.0039	0.010		mg/L	1	1/9/2023 4:32:17 PM	72410
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	1/6/2023 10:22:33 AM	72410
Arsenic	0.0019	0.00022	0.0010		mg/L	1	1/6/2023 10:22:33 AM	72410
Lead	ND	0.00019	0.00050		mg/L	1	1/6/2023 10:22:33 AM	72410
Selenium	0.0024	0.00089	0.0010		mg/L	1	1/6/2023 10:22:33 AM	72410
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	1/18/2023 1:53:19 PM	72676

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212F05**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1 to EP-2
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/29/2022 12:15:00 PM
Lab ID: 2212F05-004E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.017	0.0011	0.0020		mg/L	1	1/5/2023 10:34:16 PM	C93766
Beryllium	ND	0.00059	0.0020		mg/L	1	1/5/2023 10:34:16 PM	C93766
Cadmium	ND	0.00098	0.0020		mg/L	1	1/5/2023 10:34:16 PM	C93766
Chromium	ND	0.0020	0.0060		mg/L	1	1/5/2023 10:34:16 PM	C93766
Cobalt	ND	0.0024	0.0060		mg/L	1	1/5/2023 10:34:16 PM	C93766
Nickel	ND	0.0033	0.010		mg/L	1	1/5/2023 10:34:16 PM	C93766
Silver	0.0036	0.0013	0.0050	J	mg/L	1	1/5/2023 10:34:16 PM	C93766
Vanadium	0.0024	0.0017	0.050	J	mg/L	1	1/5/2023 10:34:16 PM	C93766
Zinc	0.028	0.0032	0.010		mg/L	1	1/17/2023 3:23:59 PM	A94009
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	0.0013	0.00045	0.0010		mg/L	1	1/10/2023 3:28:52 PM	B93855
Arsenic	0.0021	0.00057	0.0010		mg/L	1	1/10/2023 3:28:52 PM	B93855
Lead	ND	0.000099	0.00050		mg/L	1	1/10/2023 3:28:52 PM	B93855
Selenium	0.0022	0.00056	0.0010		mg/L	1	1/10/2023 3:28:52 PM	B93855
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	1/18/2023 1:55:28 PM	72676

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212F05**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1 to EP-2
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/29/2022 12:15:00 PM
Lab ID: 2212F05-004G
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
SM5210B: BOD							Analyst: **dms**	
Biochemical Oxygen Demand	400	2.0	2.0		mg/L	1	1/4/2023 2:46:00 PM	72380

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212F05**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-41
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/29/2022 12:35:00 PM
Lab ID: 2212F05-005A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	1/4/2023 7:03:41 PM	R93719
Surr: BFB	87.0	0	70-130		%Rec	1	1/4/2023 7:03:41 PM	R93719
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	1.0	1.0		µg/L	1	1/5/2023 6:47:52 PM	R93747
Toluene	ND	1.0	1.0		µg/L	1	1/5/2023 6:47:52 PM	R93747
Ethylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 6:47:52 PM	R93747
Methyl tert-butyl ether (MTBE)	ND	1.0	1.0		µg/L	1	1/5/2023 6:47:52 PM	R93747
1,2,4-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 6:47:52 PM	R93747
1,3,5-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 6:47:52 PM	R93747
1,2-Dichloroethane (EDC)	1.8	1.0	1.0		µg/L	1	1/5/2023 6:47:52 PM	R93747
Acetone	ND	10	10		µg/L	1	1/5/2023 6:47:52 PM	R93747
Bromomethane	ND	3.0	3.0		µg/L	1	1/5/2023 6:47:52 PM	R93747
2-Butanone	ND	10	10		µg/L	1	1/5/2023 6:47:52 PM	R93747
Carbon disulfide	ND	10	10		µg/L	1	1/5/2023 6:47:52 PM	R93747
Chlorobenzene	ND	1.0	1.0		µg/L	1	1/5/2023 6:47:52 PM	R93747
Chloroform	ND	1.0	1.0		µg/L	1	1/5/2023 6:47:52 PM	R93747
Chloromethane	ND	3.0	3.0		µg/L	1	1/5/2023 6:47:52 PM	R93747
cis-1,2-DCE	ND	1.0	1.0		µg/L	1	1/5/2023 6:47:52 PM	R93747
1,1-Dichloroethane	1.7	1.0	1.0		µg/L	1	1/5/2023 6:47:52 PM	R93747
1,1-Dichloroethene	2.5	1.0	1.0		µg/L	1	1/5/2023 6:47:52 PM	R93747
Isopropylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 6:47:52 PM	R93747
4-Isopropyltoluene	ND	1.0	1.0		µg/L	1	1/5/2023 6:47:52 PM	R93747
Methylene Chloride	ND	3.0	3.0		µg/L	1	1/5/2023 6:47:52 PM	R93747
n-Butylbenzene	ND	3.0	3.0		µg/L	1	1/5/2023 6:47:52 PM	R93747
n-Propylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 6:47:52 PM	R93747
sec-Butylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 6:47:52 PM	R93747
Styrene	ND	1.0	1.0		µg/L	1	1/5/2023 6:47:52 PM	R93747
Tetrachloroethene (PCE)	ND	1.0	1.0		µg/L	1	1/5/2023 6:47:52 PM	R93747
1,1,1-Trichloroethane	ND	1.0	1.0		µg/L	1	1/5/2023 6:47:52 PM	R93747
Trichloroethene (TCE)	ND	1.0	1.0		µg/L	1	1/5/2023 6:47:52 PM	R93747
Vinyl chloride	ND	1.0	1.0		µg/L	1	1/5/2023 6:47:52 PM	R93747
Xylenes, Total	ND	1.5	1.5		µg/L	1	1/5/2023 6:47:52 PM	R93747
Surr: 1,2-Dichloroethane-d4	94.0	0	70-130		%Rec	1	1/5/2023 6:47:52 PM	R93747
Surr: 4-Bromofluorobenzene	100	0	70-130		%Rec	1	1/5/2023 6:47:52 PM	R93747
Surr: Dibromofluoromethane	89.5	0	70-130		%Rec	1	1/5/2023 6:47:52 PM	R93747
Surr: Toluene-d8	93.1	0	70-130		%Rec	1	1/5/2023 6:47:52 PM	R93747

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212F05**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-41
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/29/2022 12:35:00 PM
Lab ID: 2212F05-005B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	1/4/2023 2:53:49 PM	72430

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212F05**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-41
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/29/2022 12:35:00 PM
Lab ID: 2212F05-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	1.0	0.016	0.064	BE	mg/L	1	1/9/2023 4:50:14 PM	72395
Motor Oil Range Organics (MRO)	0.11	0.052	0.080		mg/L	1	1/9/2023 4:50:14 PM	72395
Surr: DNOP	113	0	15.9-177		%Rec	1	1/9/2023 4:50:14 PM	72395
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	1/10/2023 7:15:28 PM	72443
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	1/10/2023 7:15:28 PM	72443
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	1/10/2023 7:15:28 PM	72443
Di-n-octyl phthalate	ND	12	20		µg/L	1	1/10/2023 7:15:28 PM	72443
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	1/10/2023 7:15:28 PM	72443
Diethyl phthalate	ND	6.0	10		µg/L	1	1/10/2023 7:15:28 PM	72443
Dimethyl phthalate	ND	6.0	10		µg/L	1	1/10/2023 7:15:28 PM	72443
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	1/10/2023 7:15:28 PM	72443
2,4-Dinitrophenol	ND	16	20		µg/L	1	1/10/2023 7:15:28 PM	72443
2-Methylphenol	ND	5.0	10		µg/L	1	1/10/2023 7:15:28 PM	72443
3+4-Methylphenol	ND	5.1	10		µg/L	1	1/10/2023 7:15:28 PM	72443
Phenol	ND	18	20		µg/L	1	1/10/2023 7:15:28 PM	72443
Pyridine	ND	14	40		µg/L	1	1/10/2023 7:15:28 PM	72443
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	1/10/2023 7:15:28 PM	72443
Surr: 2-Fluorophenol	42.7	0	15-84.5		%Rec	1	1/10/2023 7:15:28 PM	72443
Surr: Phenol-d5	33.2	0	15-67		%Rec	1	1/10/2023 7:15:28 PM	72443
Surr: 2,4,6-Tribromophenol	71.2	0	15-108		%Rec	1	1/10/2023 7:15:28 PM	72443
Surr: Nitrobenzene-d5	60.0	0	16.8-112		%Rec	1	1/10/2023 7:15:28 PM	72443
Surr: 2-Fluorobiphenyl	49.9	0	15-101		%Rec	1	1/10/2023 7:15:28 PM	72443
Surr: 4-Terphenyl-d14	72.0	0	34.4-134		%Rec	1	1/10/2023 7:15:28 PM	72443
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	2.3	0.11	1.0		µg/L	1	1/5/2023 9:24:00 PM	72443
Naphthalene	ND	0.20	0.30		µg/L	1	1/5/2023 9:24:00 PM	72443
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	1/5/2023 9:24:00 PM	72443
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	1/5/2023 9:24:00 PM	72443
Acenaphthene	ND	0.14	0.30		µg/L	1	1/5/2023 9:24:00 PM	72443
Fluorene	ND	0.095	0.30		µg/L	1	1/5/2023 9:24:00 PM	72443
Phenanthrene	ND	0.16	0.30		µg/L	1	1/5/2023 9:24:00 PM	72443
Anthracene	ND	0.14	0.30		µg/L	1	1/5/2023 9:24:00 PM	72443
Fluoranthene	ND	0.14	0.30		µg/L	1	1/5/2023 9:24:00 PM	72443
Pyrene	ND	0.32	1.0		µg/L	1	1/5/2023 9:24:00 PM	72443
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	1/5/2023 9:24:00 PM	72443
Chrysene	ND	0.25	0.30		µg/L	1	1/5/2023 9:24:00 PM	72443
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	1/5/2023 9:24:00 PM	72443
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	1/5/2023 9:24:00 PM	72443

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212F05**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-41
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/29/2022 12:35:00 PM
Lab ID: 2212F05-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	64.6	0	15-108		%Rec	1	1/5/2023 9:24:00 PM	72443
Surr: 2-Fluorobiphenyl	52.5	0	15-107		%Rec	1	1/5/2023 9:24:00 PM	72443
Surr: 4-Terphenyl-d14	81.6	0	15-166		%Rec	1	1/5/2023 9:24:00 PM	72443

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212F05**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-41
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/29/2022 12:35:00 PM
Lab ID: 2212F05-005D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.079	0.0016	0.0030		mg/L	1	1/9/2023 4:43:27 PM	72410
Beryllium	ND	0.00060	0.0020		mg/L	1	1/9/2023 10:42:34 AM	72410
Cadmium	ND	0.0018	0.0020		mg/L	1	1/9/2023 10:42:34 AM	72410
Chromium	ND	0.0020	0.0060		mg/L	1	1/9/2023 10:42:34 AM	72410
Cobalt	ND	0.0035	0.0060		mg/L	1	1/9/2023 4:43:27 PM	72410
Nickel	ND	0.0053	0.010		mg/L	1	1/9/2023 10:42:34 AM	72410
Silver	ND	0.0018	0.0050		mg/L	1	1/9/2023 10:42:34 AM	72410
Vanadium	0.015	0.0035	0.050	J	mg/L	1	1/9/2023 10:42:34 AM	72410
Zinc	0.0049	0.0039	0.010	J	mg/L	1	1/9/2023 10:42:34 AM	72410
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	1/6/2023 10:24:59 AM	72410
Arsenic	0.0016	0.00022	0.0010		mg/L	1	1/6/2023 10:24:59 AM	72410
Lead	ND	0.00019	0.00050		mg/L	1	1/6/2023 10:24:59 AM	72410
Selenium	0.027	0.00089	0.0010		mg/L	1	1/6/2023 10:24:59 AM	72410
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	1/18/2023 1:57:37 PM	72676

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212F05**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-41
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/29/2022 12:35:00 PM
Lab ID: 2212F05-005E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.082	0.0056	0.010		mg/L	5	1/5/2023 10:42:20 PM	C93766
Beryllium	ND	0.0029	0.010		mg/L	5	1/5/2023 10:42:20 PM	C93766
Cadmium	ND	0.0049	0.010		mg/L	5	1/5/2023 10:42:20 PM	C93766
Chromium	ND	0.0098	0.030		mg/L	5	1/5/2023 10:42:20 PM	C93766
Cobalt	ND	0.012	0.030		mg/L	5	1/5/2023 10:42:20 PM	C93766
Nickel	ND	0.016	0.050		mg/L	5	1/5/2023 10:42:20 PM	C93766
Silver	ND	0.0063	0.025		mg/L	5	1/5/2023 10:42:20 PM	C93766
Vanadium	0.016	0.0086	0.25	J	mg/L	5	1/5/2023 10:42:20 PM	C93766
Zinc	ND	0.016	0.050		mg/L	5	1/5/2023 10:42:20 PM	C93766
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00045	0.0010		mg/L	1	1/10/2023 3:34:12 PM	B93855
Arsenic	ND	0.0029	0.0050		mg/L	5	1/11/2023 1:31:40 PM	A93877
Lead	ND	0.000099	0.00050		mg/L	1	1/10/2023 3:34:12 PM	B93855
Selenium	0.035	0.00056	0.0010		mg/L	1	1/10/2023 3:34:12 PM	B93855
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	1/18/2023 1:59:47 PM	72676

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212F05**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-32
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/29/2022 12:50:00 PM
Lab ID: 2212F05-006A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	0.76	0.0090	0.050		mg/L	1	1/4/2023 7:27:07 PM	R93719
Surr: BFB	88.1	0	70-130		%Rec	1	1/4/2023 7:27:07 PM	R93719
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	1.0	1.0		µg/L	1	1/5/2023 7:14:55 PM	R93747
Toluene	ND	1.0	1.0		µg/L	1	1/5/2023 7:14:55 PM	R93747
Ethylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 7:14:55 PM	R93747
Methyl tert-butyl ether (MTBE)	740	10	10		µg/L	10	1/6/2023 11:20:58 AM	R93792
1,2,4-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 7:14:55 PM	R93747
1,3,5-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 7:14:55 PM	R93747
1,2-Dichloroethane (EDC)	7.3	1.0	1.0		µg/L	1	1/5/2023 7:14:55 PM	R93747
Acetone	ND	10	10		µg/L	1	1/5/2023 7:14:55 PM	R93747
Bromomethane	ND	3.0	3.0		µg/L	1	1/5/2023 7:14:55 PM	R93747
2-Butanone	ND	10	10		µg/L	1	1/5/2023 7:14:55 PM	R93747
Carbon disulfide	ND	10	10		µg/L	1	1/5/2023 7:14:55 PM	R93747
Chlorobenzene	ND	1.0	1.0		µg/L	1	1/5/2023 7:14:55 PM	R93747
Chloroform	ND	1.0	1.0		µg/L	1	1/5/2023 7:14:55 PM	R93747
Chloromethane	ND	3.0	3.0		µg/L	1	1/5/2023 7:14:55 PM	R93747
cis-1,2-DCE	2.1	1.0	1.0		µg/L	1	1/5/2023 7:14:55 PM	R93747
1,1-Dichloroethane	6.9	1.0	1.0		µg/L	1	1/5/2023 7:14:55 PM	R93747
1,1-Dichloroethene	16	1.0	1.0		µg/L	1	1/5/2023 7:14:55 PM	R93747
Isopropylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 7:14:55 PM	R93747
4-Isopropyltoluene	ND	1.0	1.0		µg/L	1	1/5/2023 7:14:55 PM	R93747
Methylene Chloride	ND	3.0	3.0		µg/L	1	1/5/2023 7:14:55 PM	R93747
n-Butylbenzene	ND	3.0	3.0		µg/L	1	1/5/2023 7:14:55 PM	R93747
n-Propylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 7:14:55 PM	R93747
sec-Butylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 7:14:55 PM	R93747
Styrene	ND	1.0	1.0		µg/L	1	1/5/2023 7:14:55 PM	R93747
Tetrachloroethene (PCE)	ND	1.0	1.0		µg/L	1	1/5/2023 7:14:55 PM	R93747
1,1,1-Trichloroethane	ND	1.0	1.0		µg/L	1	1/5/2023 7:14:55 PM	R93747
Trichloroethene (TCE)	ND	1.0	1.0		µg/L	1	1/5/2023 7:14:55 PM	R93747
Vinyl chloride	ND	1.0	1.0		µg/L	1	1/5/2023 7:14:55 PM	R93747
Xylenes, Total	ND	1.5	1.5		µg/L	1	1/5/2023 7:14:55 PM	R93747
Surr: 1,2-Dichloroethane-d4	103	0	70-130		%Rec	1	1/5/2023 7:14:55 PM	R93747
Surr: 4-Bromofluorobenzene	95.8	0	70-130		%Rec	1	1/5/2023 7:14:55 PM	R93747
Surr: Dibromofluoromethane	92.7	0	70-130		%Rec	1	1/5/2023 7:14:55 PM	R93747
Surr: Toluene-d8	91.0	0	70-130		%Rec	1	1/5/2023 7:14:55 PM	R93747

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

Analytical Report
Lab Order: **2212F05**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-32
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/29/2022 12:50:00 PM
Lab ID: 2212F05-006B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	1/4/2023 3:08:41 PM	72430

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212F05**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-32
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/29/2022 12:50:00 PM
Lab ID: 2212F05-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.19	0.016	0.064	BE	mg/L	1	1/9/2023 5:14:03 PM	72395
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	1/9/2023 5:14:03 PM	72395
Surr: DNOP	120	0	15.9-177		%Rec	1	1/9/2023 5:14:03 PM	72395
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	1/10/2023 7:56:30 PM	72443
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	1/10/2023 7:56:30 PM	72443
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	1/10/2023 7:56:30 PM	72443
Di-n-octyl phthalate	ND	12	20		µg/L	1	1/10/2023 7:56:30 PM	72443
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	1/10/2023 7:56:30 PM	72443
Diethyl phthalate	ND	6.0	10		µg/L	1	1/10/2023 7:56:30 PM	72443
Dimethyl phthalate	ND	6.0	10		µg/L	1	1/10/2023 7:56:30 PM	72443
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	1/10/2023 7:56:30 PM	72443
2,4-Dinitrophenol	ND	16	20		µg/L	1	1/10/2023 7:56:30 PM	72443
2-Methylphenol	ND	5.0	10		µg/L	1	1/10/2023 7:56:30 PM	72443
3+4-Methylphenol	ND	5.1	10		µg/L	1	1/10/2023 7:56:30 PM	72443
Phenol	ND	18	20		µg/L	1	1/10/2023 7:56:30 PM	72443
Pyridine	ND	14	40		µg/L	1	1/10/2023 7:56:30 PM	72443
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	1/10/2023 7:56:30 PM	72443
Surr: 2-Fluorophenol	103	0	15-84.5	S	%Rec	1	1/10/2023 7:56:30 PM	72443
Surr: Phenol-d5	71.9	0	15-67	S	%Rec	1	1/10/2023 7:56:30 PM	72443
Surr: 2,4,6-Tribromophenol	151	0	15-108	S	%Rec	1	1/10/2023 7:56:30 PM	72443
Surr: Nitrobenzene-d5	116	0	16.8-112	S	%Rec	1	1/10/2023 7:56:30 PM	72443
Surr: 2-Fluorobiphenyl	106	0	15-101	S	%Rec	1	1/10/2023 7:56:30 PM	72443
Surr: 4-Terphenyl-d14	142	0	34.4-134	S	%Rec	1	1/10/2023 7:56:30 PM	72443
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	34	0.11	1.0	E	µg/L	1	1/5/2023 10:07:00 PM	72443
Naphthalene	ND	0.20	0.30		µg/L	1	1/5/2023 10:07:00 PM	72443
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	1/5/2023 10:07:00 PM	72443
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	1/5/2023 10:07:00 PM	72443
Acenaphthene	ND	0.14	0.30		µg/L	1	1/5/2023 10:07:00 PM	72443
Fluorene	ND	0.095	0.30		µg/L	1	1/5/2023 10:07:00 PM	72443
Phenanthrene	ND	0.16	0.30		µg/L	1	1/5/2023 10:07:00 PM	72443
Anthracene	ND	0.14	0.30		µg/L	1	1/5/2023 10:07:00 PM	72443
Fluoranthene	ND	0.14	0.30		µg/L	1	1/5/2023 10:07:00 PM	72443
Pyrene	ND	0.32	1.0		µg/L	1	1/5/2023 10:07:00 PM	72443
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	1/5/2023 10:07:00 PM	72443
Chrysene	ND	0.25	0.30		µg/L	1	1/5/2023 10:07:00 PM	72443
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	1/5/2023 10:07:00 PM	72443
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	1/5/2023 10:07:00 PM	72443

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212F05**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-32
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/29/2022 12:50:00 PM
Lab ID: 2212F05-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	113	0	15-108	S	%Rec	1	1/5/2023 10:07:00 PM	72443
Surr: 2-Fluorobiphenyl	95.7	0	15-107		%Rec	1	1/5/2023 10:07:00 PM	72443
Surr: 4-Terphenyl-d14	163	0	15-166		%Rec	1	1/5/2023 10:07:00 PM	72443

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212F05**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-32
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/29/2022 12:50:00 PM
Lab ID: 2212F05-006D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.11	0.0016	0.0030		mg/L	1	1/9/2023 4:46:38 PM	72410
Beryllium	ND	0.00060	0.0020		mg/L	1	1/9/2023 10:44:11 AM	72410
Cadmium	ND	0.0018	0.0020		mg/L	1	1/9/2023 10:44:11 AM	72410
Chromium	ND	0.0020	0.0060		mg/L	1	1/9/2023 10:44:11 AM	72410
Cobalt	ND	0.0035	0.0060		mg/L	1	1/9/2023 4:46:38 PM	72410
Nickel	ND	0.0053	0.010		mg/L	1	1/9/2023 10:44:11 AM	72410
Silver	ND	0.0018	0.0050		mg/L	1	1/9/2023 10:44:11 AM	72410
Vanadium	0.015	0.0035	0.050	J	mg/L	1	1/9/2023 10:44:11 AM	72410
Zinc	0.012	0.0039	0.010		mg/L	1	1/9/2023 4:46:38 PM	72410
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	1/6/2023 10:27:26 AM	72410
Arsenic	0.0033	0.00022	0.0010		mg/L	1	1/6/2023 10:27:26 AM	72410
Lead	0.0030	0.00019	0.00050		mg/L	1	1/6/2023 10:27:26 AM	72410
Selenium	0.0020	0.00089	0.0010		mg/L	1	1/6/2023 10:27:26 AM	72410
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	1/18/2023 2:01:57 PM	72676

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212F05**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-32
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/29/2022 12:50:00 PM
Lab ID: 2212F05-006E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.0039	0.0011	0.0020		mg/L	1	1/9/2023 12:03:12 PM	A93838
Beryllium	ND	0.00059	0.0020		mg/L	1	1/9/2023 12:03:12 PM	A93838
Cadmium	ND	0.00098	0.0020		mg/L	1	1/9/2023 12:03:12 PM	A93838
Chromium	ND	0.0020	0.0060		mg/L	1	1/9/2023 12:03:12 PM	A93838
Cobalt	ND	0.0024	0.0060		mg/L	1	1/9/2023 12:03:12 PM	A93838
Nickel	ND	0.0033	0.010		mg/L	1	1/9/2023 12:03:12 PM	A93838
Silver	ND	0.0013	0.0050		mg/L	1	1/9/2023 12:03:12 PM	A93838
Vanadium	ND	0.0017	0.050		mg/L	1	1/9/2023 12:03:12 PM	A93838
Zinc	ND	0.0032	0.010		mg/L	1	1/9/2023 12:03:12 PM	A93838
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00045	0.0010		mg/L	1	1/10/2023 3:39:33 PM	B93855
Arsenic	0.0030	0.00057	0.0010		mg/L	1	1/10/2023 3:39:33 PM	B93855
Lead	ND	0.000099	0.00050		mg/L	1	1/10/2023 3:39:33 PM	B93855
Selenium	0.0044	0.00056	0.0010		mg/L	1	1/10/2023 3:39:33 PM	B93855
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	1/18/2023 2:04:05 PM	72676

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212F05**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB-12-29-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/29/2022 12:50:00 PM
Lab ID: 2212F05-007A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	1.0	1.0		µg/L	1	1/6/2023 11:48:10 AM	R93792
Toluene	ND	1.0	1.0		µg/L	1	1/6/2023 11:48:10 AM	R93792
Ethylbenzene	ND	1.0	1.0		µg/L	1	1/6/2023 11:48:10 AM	R93792
Methyl tert-butyl ether (MTBE)	ND	1.0	1.0		µg/L	1	1/6/2023 11:48:10 AM	R93792
1,2,4-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/6/2023 11:48:10 AM	R93792
1,3,5-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/6/2023 11:48:10 AM	R93792
1,2-Dichloroethane (EDC)	ND	1.0	1.0		µg/L	1	1/6/2023 11:48:10 AM	R93792
Acetone	ND	10	10		µg/L	1	1/6/2023 11:48:10 AM	R93792
Bromomethane	ND	3.0	3.0		µg/L	1	1/6/2023 11:48:10 AM	R93792
2-Butanone	ND	10	10		µg/L	1	1/6/2023 11:48:10 AM	R93792
Carbon disulfide	ND	10	10		µg/L	1	1/6/2023 11:48:10 AM	R93792
Chlorobenzene	ND	1.0	1.0		µg/L	1	1/6/2023 11:48:10 AM	R93792
Chloroform	ND	1.0	1.0		µg/L	1	1/6/2023 11:48:10 AM	R93792
Chloromethane	ND	3.0	3.0		µg/L	1	1/6/2023 11:48:10 AM	R93792
cis-1,2-DCE	ND	1.0	1.0		µg/L	1	1/6/2023 11:48:10 AM	R93792
1,1-Dichloroethane	ND	1.0	1.0		µg/L	1	1/6/2023 11:48:10 AM	R93792
1,1-Dichloroethene	ND	1.0	1.0		µg/L	1	1/6/2023 11:48:10 AM	R93792
Isopropylbenzene	ND	1.0	1.0		µg/L	1	1/6/2023 11:48:10 AM	R93792
4-Isopropyltoluene	ND	1.0	1.0		µg/L	1	1/6/2023 11:48:10 AM	R93792
Methylene Chloride	ND	3.0	3.0		µg/L	1	1/6/2023 11:48:10 AM	R93792
n-Butylbenzene	ND	3.0	3.0		µg/L	1	1/6/2023 11:48:10 AM	R93792
n-Propylbenzene	ND	1.0	1.0		µg/L	1	1/6/2023 11:48:10 AM	R93792
sec-Butylbenzene	ND	1.0	1.0		µg/L	1	1/6/2023 11:48:10 AM	R93792
Styrene	ND	1.0	1.0		µg/L	1	1/6/2023 11:48:10 AM	R93792
Tetrachloroethene (PCE)	ND	1.0	1.0		µg/L	1	1/6/2023 11:48:10 AM	R93792
1,1,1-Trichloroethane	ND	1.0	1.0		µg/L	1	1/6/2023 11:48:10 AM	R93792
Trichloroethene (TCE)	ND	1.0	1.0		µg/L	1	1/6/2023 11:48:10 AM	R93792
Vinyl chloride	ND	1.0	1.0		µg/L	1	1/6/2023 11:48:10 AM	R93792
Xylenes, Total	ND	1.5	1.5		µg/L	1	1/6/2023 11:48:10 AM	R93792
Surr: 1,2-Dichloroethane-d4	104	0	70-130		%Rec	1	1/6/2023 11:48:10 AM	R93792
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	1/6/2023 11:48:10 AM	R93792
Surr: Dibromofluoromethane	103	0	70-130		%Rec	1	1/6/2023 11:48:10 AM	R93792
Surr: Toluene-d8	98.9	0	70-130		%Rec	1	1/6/2023 11:48:10 AM	R93792

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212F05**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Dup-12-29-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/29/2022
Lab ID: 2212F05-008A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	0.99	0.0090	0.050		mg/L	1	1/4/2023 7:50:32 PM	R93719
Surr: BFB	85.7	0	70-130		%Rec	1	1/4/2023 7:50:32 PM	R93719
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	1.0	1.0		µg/L	1	1/5/2023 8:09:02 PM	R93747
Toluene	ND	1.0	1.0		µg/L	1	1/5/2023 8:09:02 PM	R93747
Ethylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 8:09:02 PM	R93747
Methyl tert-butyl ether (MTBE)	1000	10	10		µg/L	10	1/6/2023 12:15:25 PM	R93792
1,2,4-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 8:09:02 PM	R93747
1,3,5-Trimethylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 8:09:02 PM	R93747
1,2-Dichloroethane (EDC)	ND	1.0	1.0		µg/L	1	1/5/2023 8:09:02 PM	R93747
Acetone	ND	10	10		µg/L	1	1/5/2023 8:09:02 PM	R93747
Bromomethane	ND	3.0	3.0		µg/L	1	1/5/2023 8:09:02 PM	R93747
2-Butanone	ND	10	10		µg/L	1	1/5/2023 8:09:02 PM	R93747
Carbon disulfide	ND	10	10		µg/L	1	1/5/2023 8:09:02 PM	R93747
Chlorobenzene	ND	1.0	1.0		µg/L	1	1/5/2023 8:09:02 PM	R93747
Chloroform	ND	1.0	1.0		µg/L	1	1/5/2023 8:09:02 PM	R93747
Chloromethane	ND	3.0	3.0		µg/L	1	1/5/2023 8:09:02 PM	R93747
cis-1,2-DCE	ND	1.0	1.0		µg/L	1	1/5/2023 8:09:02 PM	R93747
1,1-Dichloroethane	ND	1.0	1.0		µg/L	1	1/5/2023 8:09:02 PM	R93747
1,1-Dichloroethene	ND	1.0	1.0		µg/L	1	1/5/2023 8:09:02 PM	R93747
Isopropylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 8:09:02 PM	R93747
4-Isopropyltoluene	ND	1.0	1.0		µg/L	1	1/5/2023 8:09:02 PM	R93747
Methylene Chloride	ND	3.0	3.0		µg/L	1	1/5/2023 8:09:02 PM	R93747
n-Butylbenzene	ND	3.0	3.0		µg/L	1	1/5/2023 8:09:02 PM	R93747
n-Propylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 8:09:02 PM	R93747
sec-Butylbenzene	ND	1.0	1.0		µg/L	1	1/5/2023 8:09:02 PM	R93747
Styrene	ND	1.0	1.0		µg/L	1	1/5/2023 8:09:02 PM	R93747
Tetrachloroethene (PCE)	ND	1.0	1.0		µg/L	1	1/5/2023 8:09:02 PM	R93747
1,1,1-Trichloroethane	ND	1.0	1.0		µg/L	1	1/5/2023 8:09:02 PM	R93747
Trichloroethene (TCE)	ND	1.0	1.0		µg/L	1	1/5/2023 8:09:02 PM	R93747
Vinyl chloride	ND	1.0	1.0		µg/L	1	1/5/2023 8:09:02 PM	R93747
Xylenes, Total	ND	1.5	1.5		µg/L	1	1/5/2023 8:09:02 PM	R93747
Surr: 1,2-Dichloroethane-d4	99.3	0	70-130		%Rec	1	1/5/2023 8:09:02 PM	R93747
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	1/5/2023 8:09:02 PM	R93747
Surr: Dibromofluoromethane	99.9	0	70-130		%Rec	1	1/5/2023 8:09:02 PM	R93747
Surr: Toluene-d8	92.2	0	70-130		%Rec	1	1/5/2023 8:09:02 PM	R93747

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212F05**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Dup-12-29-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/29/2022
Lab ID: 2212F05-008B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	1/4/2023 3:38:27 PM	72430

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212F05**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Dup-12-29-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/29/2022
Lab ID: 2212F05-008C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	2.4	0.016	0.064	BE	mg/L	1	1/9/2023 5:37:47 PM	72395
Motor Oil Range Organics (MRO)	0.13	0.052	0.080		mg/L	1	1/9/2023 5:37:47 PM	72395
Surr: DNOP	107	0	15.9-177		%Rec	1	1/9/2023 5:37:47 PM	72395
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	1/10/2023 8:38:09 PM	72443
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	1/10/2023 8:38:09 PM	72443
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	1/10/2023 8:38:09 PM	72443
Di-n-octyl phthalate	ND	12	20		µg/L	1	1/10/2023 8:38:09 PM	72443
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	1/10/2023 8:38:09 PM	72443
Diethyl phthalate	ND	6.0	10		µg/L	1	1/10/2023 8:38:09 PM	72443
Dimethyl phthalate	ND	6.0	10		µg/L	1	1/10/2023 8:38:09 PM	72443
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	1/10/2023 8:38:09 PM	72443
2,4-Dinitrophenol	ND	16	20		µg/L	1	1/10/2023 8:38:09 PM	72443
2-Methylphenol	ND	5.0	10		µg/L	1	1/10/2023 8:38:09 PM	72443
3+4-Methylphenol	ND	5.1	10		µg/L	1	1/10/2023 8:38:09 PM	72443
Phenol	ND	18	20		µg/L	1	1/10/2023 8:38:09 PM	72443
Pyridine	ND	14	40		µg/L	1	1/10/2023 8:38:09 PM	72443
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	1/10/2023 8:38:09 PM	72443
Surr: 2-Fluorophenol	44.7	0	15-84.5		%Rec	1	1/10/2023 8:38:09 PM	72443
Surr: Phenol-d5	37.2	0	15-67		%Rec	1	1/10/2023 8:38:09 PM	72443
Surr: 2,4,6-Tribromophenol	66.8	0	15-108		%Rec	1	1/10/2023 8:38:09 PM	72443
Surr: Nitrobenzene-d5	59.6	0	16.8-112		%Rec	1	1/10/2023 8:38:09 PM	72443
Surr: 2-Fluorobiphenyl	52.3	0	15-101		%Rec	1	1/10/2023 8:38:09 PM	72443
Surr: 4-Terphenyl-d14	79.2	0	34.4-134		%Rec	1	1/10/2023 8:38:09 PM	72443
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	1/5/2023 10:51:00 PM	72443
Naphthalene	ND	0.20	0.30		µg/L	1	1/5/2023 10:51:00 PM	72443
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	1/5/2023 10:51:00 PM	72443
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	1/5/2023 10:51:00 PM	72443
Acenaphthene	ND	0.14	0.30		µg/L	1	1/5/2023 10:51:00 PM	72443
Fluorene	ND	0.095	0.30		µg/L	1	1/5/2023 10:51:00 PM	72443
Phenanthrene	ND	0.16	0.30		µg/L	1	1/5/2023 10:51:00 PM	72443
Anthracene	ND	0.14	0.30		µg/L	1	1/5/2023 10:51:00 PM	72443
Fluoranthene	ND	0.14	0.30		µg/L	1	1/5/2023 10:51:00 PM	72443
Pyrene	ND	0.32	1.0		µg/L	1	1/5/2023 10:51:00 PM	72443
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	1/5/2023 10:51:00 PM	72443
Chrysene	ND	0.25	0.30		µg/L	1	1/5/2023 10:51:00 PM	72443
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	1/5/2023 10:51:00 PM	72443
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	1/5/2023 10:51:00 PM	72443

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212F05**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Dup-12-29-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/29/2022
Lab ID: 2212F05-008C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	60.7	0	15-108		%Rec	1	1/5/2023 10:51:00 PM	72443
Surr: 2-Fluorobiphenyl	50.4	0	15-107		%Rec	1	1/5/2023 10:51:00 PM	72443
Surr: 4-Terphenyl-d14	78.5	0	15-166		%Rec	1	1/5/2023 10:51:00 PM	72443

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212F05**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Dup-12-29-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/29/2022
Lab ID: 2212F05-008D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.13	0.0016	0.0030		mg/L	1	1/9/2023 4:49:39 PM	72410
Beryllium	ND	0.00060	0.0020		mg/L	1	1/9/2023 10:45:36 AM	72410
Cadmium	ND	0.0018	0.0020		mg/L	1	1/9/2023 10:45:36 AM	72410
Chromium	ND	0.0020	0.0060		mg/L	1	1/9/2023 10:45:36 AM	72410
Cobalt	ND	0.0035	0.0060		mg/L	1	1/9/2023 4:49:39 PM	72410
Nickel	0.10	0.0053	0.010	*	mg/L	1	1/9/2023 10:45:36 AM	72410
Silver	ND	0.0018	0.0050		mg/L	1	1/9/2023 10:45:36 AM	72410
Vanadium	ND	0.0035	0.050		mg/L	1	1/9/2023 10:45:36 AM	72410
Zinc	0.0074	0.0039	0.010	J	mg/L	1	1/9/2023 10:45:36 AM	72410
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	1/6/2023 10:29:52 AM	72410
Arsenic	0.00063	0.00022	0.0010	J	mg/L	1	1/6/2023 10:29:52 AM	72410
Lead	0.00078	0.00019	0.00050		mg/L	1	1/6/2023 10:29:52 AM	72410
Selenium	ND	0.00089	0.0010		mg/L	1	1/6/2023 10:29:52 AM	72410
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	1/18/2023 2:06:13 PM	72676

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212F05**
Date Reported: **1/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Dup-12-29-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/29/2022
Lab ID: 2212F05-008E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JRR**	
Barium	0.012	0.0011	0.0020		mg/L	1	1/9/2023 12:16:34 PM	A93838
Beryllium	ND	0.00059	0.0020		mg/L	1	1/9/2023 12:16:34 PM	A93838
Cadmium	ND	0.00098	0.0020		mg/L	1	1/9/2023 12:16:34 PM	A93838
Chromium	ND	0.0020	0.0060		mg/L	1	1/9/2023 12:16:34 PM	A93838
Cobalt	ND	0.0024	0.0060		mg/L	1	1/9/2023 12:16:34 PM	A93838
Nickel	0.0070	0.0033	0.010	J	mg/L	1	1/9/2023 12:16:34 PM	A93838
Silver	ND	0.0013	0.0050		mg/L	1	1/9/2023 12:16:34 PM	A93838
Vanadium	ND	0.0017	0.050		mg/L	1	1/9/2023 12:16:34 PM	A93838
Zinc	ND	0.0032	0.010		mg/L	1	1/9/2023 12:16:34 PM	A93838
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00045	0.0010		mg/L	1	1/10/2023 3:44:54 PM	B93855
Arsenic	0.00094	0.00057	0.0010	J	mg/L	1	1/10/2023 3:44:54 PM	B93855
Lead	0.00031	0.000099	0.00050	J	mg/L	1	1/10/2023 3:44:54 PM	B93855
Selenium	0.0057	0.00056	0.0010		mg/L	1	1/10/2023 3:44:54 PM	B93855
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	1/18/2023 2:08:20 PM	72676

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

ANALYTICAL REPORT

January 06, 2023

Hall Environmental Analysis Laboratory

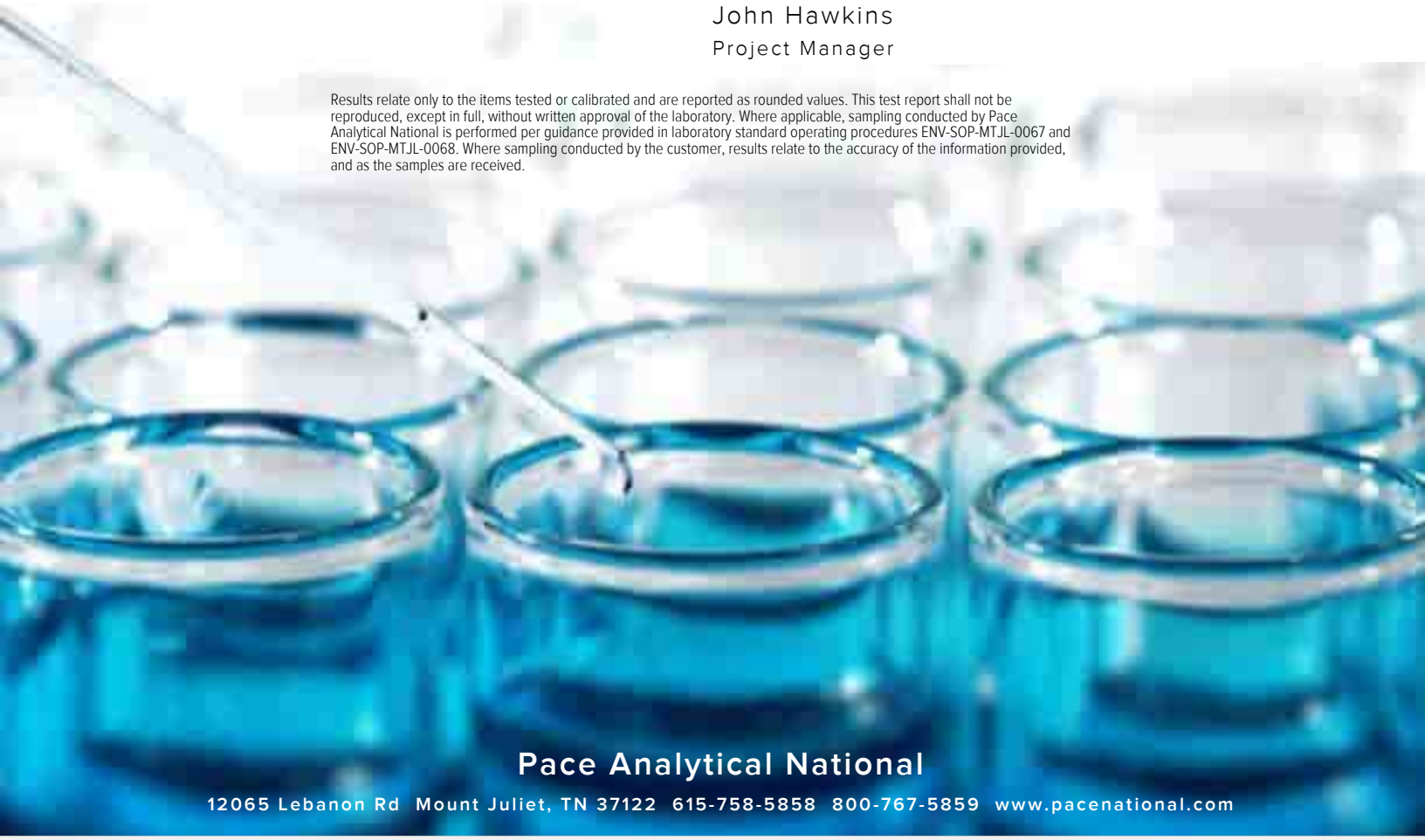
Sample Delivery Group:	L1572595
Samples Received:	01/04/2023
Project Number:	
Description:	

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By:

John Hawkins
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 4

Sr: Sample Results 5

2212F05-001F EB-12-29-22 L1572595-01 5

2212F05-002F OW-30 L1572595-02 6

2212F05-003F OW-14 L1572595-03 7

2212F05-004FH STP-1 TO EP-2 L1572595-04 8

2212F05-005F MKTF-41 L1572595-05 9

2212F05-006F MKTF-32 L1572595-06 10

2212F05-008F DUP-12-29-22 L1572595-07 11

Qc: Quality Control Summary 12

Wet Chemistry by Method 410.4 12

Wet Chemistry by Method 4500CN E-2016 13

Gl: Glossary of Terms 14

Al: Accreditations & Locations 15

Sc: Sample Chain of Custody 16

SAMPLE SUMMARY

2212F05-001F EB-12-29-22 L1572595-01 WW

			Collected by	Collected date/time	Received date/time	
				12/29/22 11:00	01/04/23 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1982605	1	01/05/23 17:02	01/05/23 23:00	LDT	Mt. Juliet, TN

2212F05-002F OW-30 L1572595-02 WW

			Collected by	Collected date/time	Received date/time	
				12/29/22 11:20	01/04/23 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1982605	1	01/05/23 17:02	01/05/23 23:01	LDT	Mt. Juliet, TN

2212F05-003F OW-14 L1572595-03 WW

			Collected by	Collected date/time	Received date/time	
				12/29/22 12:00	01/04/23 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1982605	1	01/05/23 17:02	01/05/23 23:02	LDT	Mt. Juliet, TN

2212F05-004FH STP-1 TO EP-2 L1572595-04 WW

			Collected by	Collected date/time	Received date/time	
				12/29/22 12:15	01/04/23 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 410.4	WG1983632	1	01/05/23 14:50	01/05/23 17:34	EPW	Mt. Juliet, TN
Wet Chemistry by Method 4500CN E-2016	WG1982605	1	01/05/23 17:02	01/05/23 23:05	LDT	Mt. Juliet, TN

2212F05-005F MKTF-41 L1572595-05 WW

			Collected by	Collected date/time	Received date/time	
				12/29/22 12:35	01/04/23 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1982605	1	01/05/23 17:02	01/05/23 23:06	LDT	Mt. Juliet, TN

2212F05-006F MKTF-32 L1572595-06 WW

			Collected by	Collected date/time	Received date/time	
				12/29/22 12:50	01/04/23 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1982605	1	01/05/23 17:02	01/05/23 23:07	LDT	Mt. Juliet, TN

2212F05-008F DUP-12-29-22 L1572595-07 WW

			Collected by	Collected date/time	Received date/time	
				12/29/22 00:00	01/04/23 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1982605	1	01/05/23 17:02	01/05/23 23:08	LDT	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	01/05/2023 23:00	WG1982605

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.00727		0.00500	1	01/05/2023 23:01	WG1982605

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	01/05/2023 23:02	WG1982605

Wet Chemistry by Method 410.4

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
COD	152		20.0	1	01/05/2023 17:34	WG1983632

Wet Chemistry by Method 4500CN E-2016

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Cyanide	ND		0.00500	1	01/05/2023 23:05	WG1982605

Received by OCD: 4/21/2023 9:21:57 AM

22121 05-0051-MRT-41

SAMPLE RESULTS - 05

Collected date/time: 12/29/22 12:35

L1572595

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	01/05/2023 23:06	WG1982605

Released to Imaging: 4/21/2023 9:40:26 AM

Received by OCD: 4/21/2023 9:21:57 AM

22121 05-0061-MRTT-32

SAMPLE RESULTS - 06

Collected date/time: 12/29/22 12:50

L1572595

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	01/05/2023 23:07	WG1982605

Released to Imaging: 4/21/2023 9:40:26 AM

Received by OCD: 4/21/2023 9:21:57 AM

Collected date/time: 12/29/22 00:00
L1572595

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.0155		0.00500	1	01/05/2023 23:08	WG1982605

Released to Imaging: 4/21/2023 9:40:26 AM

Method Blank (MB)

(MB) R3878432-1 01/05/23 17:19

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
COD	U		11.7	20.0

L1572565-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1572565-01 01/05/23 17:24 • (DUP) R3878432-3 01/05/23 17:25

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
COD	ND	ND	1	0.000		20

L1572755-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1572755-01 01/05/23 17:35 • (DUP) R3878432-6 01/05/23 17:36

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
COD	ND	ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3878432-2 01/05/23 17:20

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
COD	500	461	92.3	90.0-110	

L1572565-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1572565-01 01/05/23 17:24 • (MS) R3878432-4 01/05/23 17:29 • (MSD) R3878432-5 01/05/23 17:29

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
COD	500	ND	499	606	99.8	121	1	80.0-120		J5	19.3	20

Method Blank (MB)

(MB) R3878787-1 01/05/23 22:40

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1572133-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1572133-01 01/05/23 22:44 • (DUP) R3878787-3 01/05/23 22:45

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

L1572593-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1572593-01 01/05/23 22:58 • (DUP) R3878787-6 01/05/23 22:59

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3878787-2 01/05/23 22:41

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.0931	93.1	87.1-120	

L1572230-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1572230-01 01/05/23 22:46 • (MS) R3878787-4 01/05/23 22:47 • (MSD) R3878787-5 01/05/23 22:48

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.100	0.0987	100	98.7	1	90.0-110			1.31	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Received by OCD: 4/21/2023 9:21:57 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

H134

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

SUB CONTRATOR: Pace TN	COMPANY: PACE TN		PHONE: (800) 767-5859	FAX: (615) 758-5859	
ADDRESS: 12065 Lebanon Rd			ACCOUNT #:	EMAIL:	
CITY, STATE, ZIP: Mt. Juliet, TN 37122					

L1572595

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS	
1	2212F05-001F	EB-12-29-22	500AMBHDP E-NAOH	Groundwater	12/29/2022 11:00:00 AM	1	Total Cyanide J and MDL	-01
2	2212F05-002F	OW-30	500AMBHDP E-NAOH	Groundwater	12/29/2022 11:20:00 AM	1	Total Cyanide J and MDL	-02
3	2212F05-003F	OW-14	500AMBHDP E-NAOH	Groundwater	12/29/2022 12:00:00 PM	1	Total Cyanide J and MDL	-03
4	2212F05-004F	STP-1 to EP-2	500AMBHDP E-NAOH	Groundwater	12/29/2022 12:15:00 PM	1	Total Cyanide J and MDL	
5	2212F05-004H	STP-1 to EP-2	500HDPEH2SO4	Groundwater	12/29/2022 12:15:00 PM	1	COD	J04
6	2212F05-005F	MKTF-41	500AMBHDP E-NAOH	Groundwater	12/29/2022 12:35:00 PM	1	Total Cyanide J and MDL	-05
7	2212F05-006F	MKTF-32	500AMBHDP E-NAOH	Groundwater	12/29/2022 12:50:00 PM	1	Total Cyanide J and MDL	-06
8	2212F05-008F	Dup-12-29-22	500AMBHDP E-NAOH	Groundwater	12/29/2022	1	Total Cyanide J and MDL	-07

7709 3257 8740

Sample Receipt Checklist

COC Seal Present/Intact: Y N — If Applicable
COC Signed/Accurate: Y N — VOA Zero Headspace: Y N
Bottles arrive intact: Y N — Pres.Correct/Check: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
RAD Screen <0.5 mR/hr: Y N

GBAZ
5.0

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By: CMC	Date: 12/30/2022	Time: 9:08 AM	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By: Caleb Tapp	Date: 1/4/23	Time: 09:00

TAT: Standard ☑ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY

Temp of samples _____ °C Attempt to Cool ? _____

Comments: _____

Released to Imaging: 4/21/2023 9:40:26 AM

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212F05**

19-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-72410**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **72410**	RunNo: **93794**
Prep Date: **1/3/2023**	Analysis Date: **1/9/2023**	SeqNo: **3386102** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								

Sample ID: **LCSLL-72410**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **72410**	RunNo: **93794**
Prep Date: **1/3/2023**	Analysis Date: **1/9/2023**	SeqNo: **3386103** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0029	0.0030	0.002000	0	145	50	150			J
Beryllium	0.0020	0.0020	0.002000	0	102	50	150			
Cadmium	0.0018	0.0020	0.002000	0	91.0	50	150			J
Chromium	0.0061	0.0060	0.006000	0	101	50	150			
Cobalt	0.0075	0.0060	0.006000	0	126	50	150			
Nickel	0.0057	0.010	0.005000	0	114	50	150			J
Silver	0.0054	0.0050	0.005000	0	108	50	150			
Vanadium	0.011	0.050	0.01000	0	110	50	150			J

Sample ID: **LCS-72410**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **72410**	RunNo: **93794**
Prep Date: **1/3/2023**	Analysis Date: **1/9/2023**	SeqNo: **3386104** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.53	0.0030	0.5000	0	106	85	115			
Beryllium	0.55	0.0020	0.5000	0	110	85	115			
Cadmium	0.54	0.0020	0.5000	0	108	85	115			
Chromium	0.53	0.0060	0.5000	0	105	85	115			
Cobalt	0.52	0.0060	0.5000	0	105	85	115			
Nickel	0.51	0.010	0.5000	0	102	85	115			
Silver	0.10	0.0050	0.1000	0	103	85	115			
Vanadium	0.54	0.050	0.5000	0	109	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2212F05**
19-Jan-23

Client: Marathon
Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-72410**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **72410**	RunNo: **93812**
Prep Date: **1/3/2023**	Analysis Date: **1/9/2023**	SeqNo: **3386596** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Cobalt	ND	0.0060								
Zinc	ND	0.010								

Sample ID: **LCSLL-72410**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **72410**	RunNo: **93812**
Prep Date: **1/3/2023**	Analysis Date: **1/9/2023**	SeqNo: **3386597** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0021	0.0030	0.002000	0	104	50	150			J
Cobalt	0.0061	0.0060	0.006000	0	101	50	150			
Zinc	0.010	0.010	0.01000	0	101	50	150			

Sample ID: **LCS-72410**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **72410**	RunNo: **93812**
Prep Date: **1/3/2023**	Analysis Date: **1/9/2023**	SeqNo: **3386598** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.46	0.0030	0.5000	0	92.3	85	115			
Cobalt	0.45	0.0060	0.5000	0	90.4	85	115			
Zinc	0.45	0.010	0.5000	0	90.7	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212F05**

19-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-C**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **C93766**	RunNo: **93766**
Prep Date:	Analysis Date: **1/5/2023**	SeqNo: **3385002** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS-C**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **C93766**	RunNo: **93766**
Prep Date:	Analysis Date: **1/5/2023**	SeqNo: **3385003** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0019	0.0020	0.002000	0	93.3	50	150			J
Beryllium	0.0019	0.0020	0.002000	0	96.7	50	150			J
Cadmium	0.0020	0.0020	0.002000	0	97.9	50	150			J
Chromium	0.0062	0.0060	0.006000	0	103	50	150			
Cobalt	0.0062	0.0060	0.006000	0	103	50	150			
Nickel	0.0049	0.010	0.005000	0	97.3	50	150			J
Silver	0.0048	0.0050	0.005000	0	96.5	50	150			J
Vanadium	0.0098	0.050	0.01000	0	98.2	50	150			J
Zinc	0.011	0.010	0.01000	0	110	50	150			

Sample ID: **LCS-C**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **C93766**	RunNo: **93766**
Prep Date:	Analysis Date: **1/5/2023**	SeqNo: **3385007** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.53	0.0020	0.5000	0	105	85	115			
Beryllium	0.52	0.0020	0.5000	0	104	85	115			
Cadmium	0.51	0.0020	0.5000	0	103	85	115			
Chromium	0.51	0.0060	0.5000	0	102	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.0	85	115			
Nickel	0.51	0.010	0.5000	0	102	85	115			
Silver	0.11	0.0050	0.1000	0	106	85	115			
Vanadium	0.52	0.050	0.5000	0	104	85	115			
Zinc	0.53	0.010	0.5000	0	106	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2212F05**
19-Jan-23

Client: Marathon
Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-A** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW** Batch ID: **A93838** RunNo: **93838**
Prep Date: Analysis Date: **1/9/2023** SeqNo: **3387404** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LCSLL-A** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **A93838** RunNo: **93838**
Prep Date: Analysis Date: **1/9/2023** SeqNo: **3387405** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0018	0.0020	0.002000	0	90.6	50	150			J
Beryllium	0.0020	0.0020	0.002000	0	102	50	150			
Cadmium	0.0019	0.0020	0.002000	0	94.5	50	150			J
Chromium	0.0067	0.0060	0.006000	0	112	50	150			
Cobalt	0.0060	0.0060	0.006000	0	101	50	150			
Nickel	0.0039	0.010	0.005000	0	78.6	50	150			J
Silver	0.0053	0.0050	0.005000	0	105	50	150			
Vanadium	0.0096	0.050	0.01000	0	96.2	50	150			J
Zinc	0.011	0.010	0.01000	0	112	50	150			

Sample ID: **LCS-A** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **A93838** RunNo: **93838**
Prep Date: Analysis Date: **1/9/2023** SeqNo: **3387406** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	97.5	85	115			
Beryllium	0.50	0.0020	0.5000	0	100	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.2	85	115			
Chromium	0.49	0.0060	0.5000	0	97.1	85	115			
Cobalt	0.47	0.0060	0.5000	0	93.9	85	115			
Nickel	0.48	0.010	0.5000	0	95.5	85	115			
Silver	0.10	0.0050	0.1000	0	100	85	115			
Vanadium	0.50	0.050	0.5000	0	99.2	85	115			
Zinc	0.48	0.010	0.5000	0	95.7	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2212F05**
19-Jan-23

Client: Marathon
Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-A**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A94009**	RunNo: **94009**
Prep Date:	Analysis Date: **1/17/2023**	SeqNo: **3393889** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	ND	0.010								

Sample ID: **LCSLL-A**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A94009**	RunNo: **94009**
Prep Date:	Analysis Date: **1/17/2023**	SeqNo: **3393890** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	0.012	0.010	0.01000	0	115	50	150			

Sample ID: **LCS-A**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A94009**	RunNo: **94009**
Prep Date:	Analysis Date: **1/17/2023**	SeqNo: **3393891** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	0.51	0.010	0.5000	0	103	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2212F05**
19-Jan-23

Client: Marathon
Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-72410** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **72410** RunNo: **93754**
Prep Date: **1/3/2023** Analysis Date: **1/5/2023** SeqNo: **3384112** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								

Sample ID: **MSLCSLL-72410** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **72410** RunNo: **93754**
Prep Date: **1/3/2023** Analysis Date: **1/5/2023** SeqNo: **3384113** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0012	0.0010	0.001000	0	115	50	150			
Arsenic	0.0012	0.0010	0.001000	0	117	50	150			
Lead	0.00051	0.00050	0.0005000	0	103	50	150			

Sample ID: **MSLCS-72410** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **72410** RunNo: **93754**
Prep Date: **1/3/2023** Analysis Date: **1/5/2023** SeqNo: **3384114** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	98.1	85	115			
Arsenic	0.025	0.0010	0.02500	0	100	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			

Sample ID: **MB-72410** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **72410** RunNo: **93790**
Prep Date: **1/3/2023** Analysis Date: **1/6/2023** SeqNo: **3385879** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **MSLCSLL-72410** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **72410** RunNo: **93790**
Prep Date: **1/3/2023** Analysis Date: **1/6/2023** SeqNo: **3385880** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0013	0.0010	0.001000	0	130	50	150			
Arsenic	0.00099	0.0010	0.001000	0	99.2	50	150			J
Lead	0.00046	0.00050	0.0005000	0	91.6	50	150			J

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212F05**

19-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MSLCSLL-72410**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **72410**	RunNo: **93790**
Prep Date: **1/3/2023**	Analysis Date: **1/6/2023**	SeqNo: **3385880** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.00084	0.0010	0.001000	0	84.0	50	150			J

Sample ID: **MSLCS-72410**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **72410**	RunNo: **93790**
Prep Date: **1/3/2023**	Analysis Date: **1/6/2023**	SeqNo: **3385881** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	104	85	115			
Arsenic	0.026	0.0010	0.02500	0	103	85	115			
Lead	0.012	0.00050	0.01250	0	98.7	85	115			
Selenium	0.024	0.0010	0.02500	0	96.7	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2212F05**
19-Jan-23

Client: Marathon
Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **B93855**	RunNo: **93855**
Prep Date:	Analysis Date: **1/10/2023**	SeqNo: **3387953** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCS A**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **B93855**	RunNo: **93855**
Prep Date:	Analysis Date: **1/10/2023**	SeqNo: **3387954** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	102	85	115			
Arsenic	0.025	0.0010	0.02500	0	102	85	115			
Lead	0.013	0.00050	0.01250	0	102	85	115			
Selenium	0.025	0.0010	0.02500	0	102	85	115			

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **B93855**	RunNo: **93855**
Prep Date:	Analysis Date: **1/10/2023**	SeqNo: **3387955** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0012	0.0010	0.001000	0	117	50	150			
Arsenic	0.0012	0.0010	0.001000	0	120	50	150			
Lead	0.00051	0.00050	0.0005000	0	102	50	150			
Selenium	0.0011	0.0010	0.001000	0	108	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **B93855**	RunNo: **93855**
Prep Date:	Analysis Date: **1/10/2023**	SeqNo: **3387956** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	104	85	115			
Arsenic	0.026	0.0010	0.02500	0	103	85	115			
Lead	0.013	0.00050	0.01250	0	102	85	115			
Selenium	0.026	0.0010	0.02500	0	103	85	115			

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **A93877**	RunNo: **93877**
Prep Date:	Analysis Date: **1/11/2023**	SeqNo: **3388811** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212F05**

19-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**							
Client ID: **PBW**	Batch ID: **A93877**	RunNo: **93877**							
Prep Date:	Analysis Date: **1/11/2023**	SeqNo: **3388811**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**							
Client ID: **BatchQC**	Batch ID: **A93877**	RunNo: **93877**							
Prep Date:	Analysis Date: **1/11/2023**	SeqNo: **3388813**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.0012	0.0010	0.001000	0	123	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**							
Client ID: **LCSW**	Batch ID: **A93877**	RunNo: **93877**							
Prep Date:	Analysis Date: **1/11/2023**	SeqNo: **3388814**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	100	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212F05**

19-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-72676**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW**	Batch ID: **72676**	RunNo: **94031**
Prep Date: **1/18/2023**	Analysis Date: **1/18/2023**	SeqNo: **3394539** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-72676**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC**	Batch ID: **72676**	RunNo: **94031**
Prep Date: **1/18/2023**	Analysis Date: **1/18/2023**	SeqNo: **3394540** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00017	0.00020	0.0001500	0	115	50	150			J

Sample ID: **LCS-72676**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW**	Batch ID: **72676**	RunNo: **94031**
Prep Date: **1/18/2023**	Analysis Date: **1/18/2023**	SeqNo: **3394541** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0053	0.00020	0.005000	0	106	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212F05**

19-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-72430**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **72430**	RunNo: **93769**
Prep Date: **1/4/2023**	Analysis Date: **1/4/2023**	SeqNo: **3385211** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-72430**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW**	Batch ID: **72430**	RunNo: **93769**
Prep Date: **1/4/2023**	Analysis Date: **1/4/2023**	SeqNo: **3385212** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.13	0.010	0.1000	0	129	70	130			

Sample ID: **2212F05-004BMS**	SampType: **MS**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **STP-1 to EP-2**	Batch ID: **72430**	RunNo: **93769**
Prep Date: **1/4/2023**	Analysis Date: **1/4/2023**	SeqNo: **3385213** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.0094	0.09358	0	112	65	135			

Sample ID: **2212F05-004BMSD**	SampType: **MSD**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **STP-1 to EP-2**	Batch ID: **72430**	RunNo: **93769**
Prep Date: **1/4/2023**	Analysis Date: **1/4/2023**	SeqNo: **3385214** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.088	0.0093	0.09259	0	94.8	65	135	18.0	20	

Sample ID: **MB-72430**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **72430**	RunNo: **93769**
Prep Date: **1/4/2023**	Analysis Date: **1/4/2023**	SeqNo: **3385242** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2212F05**
19-Jan-23

Client: Marathon
Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-72395**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **PBW**	Batch ID: **72395**	RunNo: **93843**							
Prep Date: **12/30/2022**	Analysis Date: **1/9/2023**	SeqNo: **3387577**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.10	0.064								
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.034		0.03750		91.0	15.9	177			

Sample ID: **LCS-72395**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSW**	Batch ID: **72395**	RunNo: **93843**							
Prep Date: **12/30/2022**	Analysis Date: **1/9/2023**	SeqNo: **3387578**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.26	0.064	0.1875	0	138	31.2	125			BS
Surr: DNOP	0.020		0.01875		109	15.9	177			

Sample ID: **LCSD-72395**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSS02**	Batch ID: **72395**	RunNo: **93843**							
Prep Date: **12/30/2022**	Analysis Date: **1/9/2023**	SeqNo: **3387579**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.20	0.064	0.1875	0	108	31.2	125	25.2	20	BR
Surr: DNOP	0.019		0.01875		104	15.9	177	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212F05**

19-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **R93719**	RunNo: **93719**
Prep Date:	Analysis Date: **1/4/2023**	SeqNo: **3382914** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	91.4	80	120			
Surr: BFB	36		20.00		178	70	130			S

Sample ID: **2212f05-002ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **OW-30**	Batch ID: **R93719**	RunNo: **93719**
Prep Date:	Analysis Date: **1/4/2023**	SeqNo: **3382917** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	1.4	0.050	0.5000	0.9360	99.3	70	130			
Surr: BFB	36		20.00		179	70	130			S

Sample ID: **2212f05-002amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **OW-30**	Batch ID: **R93719**	RunNo: **93719**
Prep Date:	Analysis Date: **1/4/2023**	SeqNo: **3382918** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	1.4	0.050	0.5000	0.9360	98.5	70	130	0.280	20	
Surr: BFB	36		20.00		182	70	130	0	0	S

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **R93719**	RunNo: **93719**
Prep Date:	Analysis Date: **1/4/2023**	SeqNo: **3382926** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	17		20.00		87.2	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212F05**

19-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R93747**	RunNo: **93747**
Prep Date:	Analysis Date: **1/5/2023**	SeqNo: **3383858** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	99.4	70	130			
Toluene	19	1.0	20.00	0	94.2	70	130			
Chlorobenzene	18	1.0	20.00	0	90.8	70	130			
1,1-Dichloroethene	18	1.0	20.00	0	91.9	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	90.6	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		97.8	70	130			
Surr: Dibromofluoromethane	9.9		10.00		98.5	70	130			
Surr: Toluene-d8	9.8		10.00		98.1	70	130			

Sample ID: **2212f05-002a ms**	SampType: **MS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **OW-30**	Batch ID: **R93747**	RunNo: **93747**
Prep Date:	Analysis Date: **1/5/2023**	SeqNo: **3383862** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	102	70	130			
Toluene	20	1.0	20.00	0	97.8	70	130			
Chlorobenzene	19	1.0	20.00	0	94.9	70	130			
1,1-Dichloroethene	19	1.0	20.00	0	94.2	70	130			
Trichloroethene (TCE)	19	1.0	20.00	0	93.5	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		101	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	10		10.00		100	70	130			
Surr: Toluene-d8	9.6		10.00		95.7	70	130			

Sample ID: **2212f05-002a msd**	SampType: **MSD**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **OW-30**	Batch ID: **R93747**	RunNo: **93747**
Prep Date:	Analysis Date: **1/5/2023**	SeqNo: **3383863** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	91.5	70	130	11.0	20	
Toluene	19	1.0	20.00	0	95.5	70	130	2.40	20	
Chlorobenzene	19	1.0	20.00	0	94.0	70	130	0.883	20	
1,1-Dichloroethene	17	1.0	20.00	0	83.7	70	130	11.7	20	
Trichloroethene (TCE)	18	1.0	20.00	0	89.2	70	130	4.67	20	
Surr: 1,2-Dichloroethane-d4	11		10.00		108	70	130	0	0	
Surr: 4-Bromofluorobenzene	9.8		10.00		98.2	70	130	0	0	
Surr: Dibromofluoromethane	9.6		10.00		95.7	70	130	0	0	
Surr: Toluene-d8	9.3		10.00		93.2	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2212F05**
19-Jan-23

Client: Marathon
Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R93747**	RunNo: **93747**
Prep Date:	Analysis Date: **1/5/2023**	SeqNo: **3383879** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		103	70	130			
Surr: 4-Bromofluorobenzene	9.4		10.00		93.7	70	130			
Surr: Dibromofluoromethane	9.4		10.00		93.9	70	130			
Surr: Toluene-d8	9.4		10.00		94.3	70	130			

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R93792**	RunNo: **93792**
Prep Date:	Analysis Date: **1/6/2023**	SeqNo: **3386041** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212F05**

19-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R93792**	RunNo: **93792**
Prep Date:	Analysis Date: **1/6/2023**	SeqNo: **3386041** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	99.7	70	130			
Toluene	18	1.0	20.00	0	88.4	70	130			
Chlorobenzene	18	1.0	20.00	0	88.0	70	130			
1,1-Dichloroethene	18	1.0	20.00	0	89.2	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	88.9	70	130			
Surr: 1,2-Dichloroethane-d4	9.7		10.00		96.7	70	130			
Surr: 4-Bromofluorobenzene	9.5		10.00		95.2	70	130			
Surr: Dibromofluoromethane	9.3		10.00		93.4	70	130			
Surr: Toluene-d8	8.9		10.00		89.3	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R93792**	RunNo: **93792**
Prep Date:	Analysis Date: **1/6/2023**	SeqNo: **3386075** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2212F05**
19-Jan-23

Client: Marathon
Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R93792**	RunNo: **93792**
Prep Date:	Analysis Date: **1/6/2023**	SeqNo: **3386075** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.7		10.00		97.3	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	9.6		10.00		96.2	70	130			
Surr: Toluene-d8	8.8		10.00		87.6	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212F05**

19-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb-72406**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **72406**	RunNo: **93814**
Prep Date: **1/3/2023**	Analysis Date: **1/9/2023**	SeqNo: **3386698** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Anthracene	ND	10								
Benz(a)anthracene	ND	5.0								
Benzo(b)fluoranthene	ND	10								
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	10								
2,4-Dinitrophenol	ND	20								
Fluoranthene	ND	10								
Fluorene	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
1-Methylnaphthalene	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
Naphthalene	ND	5.0								
Phenanthrene	ND	10								
Phenol	ND	20								
Pyrene	ND	10								
Pyridine	ND	40								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	87		200.0		43.6	15	84.5			
Surr: Phenol-d5	70		200.0		35.0	15	67			
Surr: 2,4,6-Tribromophenol	120		200.0		58.8	15	108			
Surr: Nitrobenzene-d5	55		100.0		55.3	16.8	112			
Surr: 2-Fluorobiphenyl	46		100.0		45.9	15	101			
Surr: 4-Terphenyl-d14	89		100.0		88.6	34.4	134			

Sample ID: **lcs-72406**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **72406**	RunNo: **93814**
Prep Date: **1/3/2023**	Analysis Date: **1/9/2023**	SeqNo: **3386699** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212F05**

19-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **lcs-72406**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **72406**	RunNo: **93814**
Prep Date: **1/3/2023**	Analysis Date: **1/9/2023**	SeqNo: **3386699** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	60	10	100.0	0	60.0	21.3	104			
1,4-Dichlorobenzene	41	5.0	100.0	0	40.6	15	89.8			
Phenol	83	20	200.0	0	41.7	17	61.1			
Pyrene	75	10	100.0	0	74.6	61	123			
Surr: 2-Fluorophenol	94		200.0		46.8	15	84.5			
Surr: Phenol-d5	76		200.0		37.8	15	67			
Surr: 2,4,6-Tribromophenol	140		200.0		70.6	15	108			
Surr: Nitrobenzene-d5	64		100.0		64.0	16.8	112			
Surr: 2-Fluorobiphenyl	58		100.0		57.6	15	101			
Surr: 4-Terphenyl-d14	86		100.0		86.3	34.4	134			

Sample ID: **lcsd-72406**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **72406**	RunNo: **93814**
Prep Date: **1/3/2023**	Analysis Date: **1/9/2023**	SeqNo: **3386700** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	52	10	100.0	0	52.3	21.3	104	13.7	45.3	
1,4-Dichlorobenzene	39	5.0	100.0	0	39.1	15	89.8	3.61	39.6	
Phenol	77	20	200.0	0	38.4	17	61.1	8.35	42.5	
Pyrene	74	10	100.0	0	74.2	61	123	0.549	11.8	
Surr: 2-Fluorophenol	91		200.0		45.4	15	84.5	0	0	
Surr: Phenol-d5	72		200.0		35.9	15	67	0	0	
Surr: 2,4,6-Tribromophenol	140		200.0		72.1	15	108	0	0	
Surr: Nitrobenzene-d5	58		100.0		58.4	16.8	112	0	0	
Surr: 2-Fluorobiphenyl	49		100.0		49.1	15	101	0	0	
Surr: 4-Terphenyl-d14	86		100.0		86.2	34.4	134	0	0	

Sample ID: **mb-72443**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **72443**	RunNo: **93858**
Prep Date: **1/4/2023**	Analysis Date: **1/10/2023**	SeqNo: **3388040** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Anthracene	ND	10								
Benz(a)anthracene	ND	5.0								
Benzo(b)fluoranthene	ND	10								
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212F05**

19-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb-72443**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **72443**	RunNo: **93858**
Prep Date: **1/4/2023**	Analysis Date: **1/10/2023**	SeqNo: **3388040** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	10								
2,4-Dinitrophenol	ND	20								
Fluoranthene	ND	10								
Fluorene	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
1-Methylnaphthalene	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
Naphthalene	ND	5.0								
Phenanthrene	ND	10								
Phenol	ND	20								
Pyrene	ND	10								
Pyridine	ND	40								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	59		200.0		29.5	15	84.5			
Surr: Phenol-d5	46		200.0		23.0	15	67			
Surr: 2,4,6-Tribromophenol	77		200.0		38.3	15	108			
Surr: Nitrobenzene-d5	38		100.0		38.0	16.8	112			
Surr: 2-Fluorobiphenyl	34		100.0		34.0	15	101			
Surr: 4-Terphenyl-d14	61		100.0		61.2	34.4	134			

Sample ID: **lcs-72443**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **72443**	RunNo: **93858**
Prep Date: **1/4/2023**	Analysis Date: **1/10/2023**	SeqNo: **3388041** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	64	10	100.0	0	63.9	21.3	104			
1,4-Dichlorobenzene	42	5.0	100.0	0	42.1	15	89.8			
Phenol	88	20	200.0	0	44.0	17	61.1			
Pyrene	89	10	100.0	0	88.5	61	123			
Surr: 2-Fluorophenol	100		200.0		52.3	15	84.5			
Surr: Phenol-d5	80		200.0		39.8	15	67			
Surr: 2,4,6-Tribromophenol	170		200.0		85.2	15	108			
Surr: Nitrobenzene-d5	67		100.0		67.3	16.8	112			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2212F05**
19-Jan-23

Client: Marathon
Project: 2022 GW Sampling 4th Quarter

Sample ID: **lcs-72443**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**							
Client ID: **LCSW**	Batch ID: **72443**	RunNo: **93858**							
Prep Date: **1/4/2023**	Analysis Date: **1/10/2023**	SeqNo: **3388041**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorobiphenyl	59		100.0		58.6	15	101			
Surr: 4-Terphenyl-d14	99		100.0		98.6	34.4	134			

Sample ID: **lcsd-72443**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**							
Client ID: **LCSS02**	Batch ID: **72443**	RunNo: **93858**							
Prep Date: **1/4/2023**	Analysis Date: **1/10/2023**	SeqNo: **3388042**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	65	10	100.0	0	64.9	21.3	104	1.57	45.3	
1,4-Dichlorobenzene	43	5.0	100.0	0	43.0	15	89.8	2.27	39.6	
Phenol	90	20	200.0	0	45.2	17	61.1	2.74	42.5	
Pyrene	96	10	100.0	0	95.7	61	123	7.73	11.8	
Surr: 2-Fluorophenol	110		200.0		54.2	15	84.5	0	0	
Surr: Phenol-d5	84		200.0		42.1	15	67	0	0	
Surr: 2,4,6-Tribromophenol	190		200.0		93.6	15	108	0	0	
Surr: Nitrobenzene-d5	71		100.0		70.8	16.8	112	0	0	
Surr: 2-Fluorobiphenyl	62		100.0		62.5	15	101	0	0	
Surr: 4-Terphenyl-d14	110		100.0		107	34.4	134	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212F05**

19-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb-72406**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **72406**	RunNo: **93725**
Prep Date: **1/3/2023**	Analysis Date: **1/5/2023**	SeqNo: **3383328** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.30								
1-Methylnaphthalene	ND	0.30								
2-Methylnaphthalene	ND	0.30								
Acenaphthene	ND	0.30								
Fluorene	ND	0.30								
Phenanthrene	ND	0.30								
Anthracene	ND	0.30								
Fluoranthene	ND	0.30								
Pyrene	ND	1.0								
Benz(a)anthracene	ND	0.30								
Chrysene	ND	0.30								
Benzo(b)fluoranthene	ND	0.40								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	54		100.0		54.1	15	108			
Surr: 2,4,6-Tribromophenol	100		200.0		49.9	15	112			
Surr: 2-Fluorobiphenyl	45		100.0		45.1	15	107			
Surr: 4-Terphenyl-d14	100		100.0		103	15	166			

Sample ID: **lcs-72406-lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **72406**	RunNo: **93725**
Prep Date: **1/3/2023**	Analysis Date: **1/5/2023**	SeqNo: **3383329** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.68	1.0	2.000	0	34.0	15	60.5			J
Naphthalene	0.98	0.30	2.000	0	49.0	15	78.3			
1-Methylnaphthalene	0.98	0.30	2.000	0	49.0	15	79.6			
2-Methylnaphthalene	0.94	0.30	2.000	0	47.0	15	78.6			
Acenaphthene	1.1	0.30	2.000	0	54.0	15	92			
Fluorene	1.2	0.30	2.000	0	62.0	15	96			
Phenanthrene	1.5	0.30	2.000	0	73.0	21	103			
Anthracene	1.6	0.30	2.000	0	81.0	21.1	106			
Fluoranthene	2.0	0.30	2.000	0	99.0	32.8	119			
Pyrene	1.8	1.0	2.000	0	88.0	34.1	110			
Benz(a)anthracene	2.2	0.30	2.000	0	110	32	132			
Chrysene	1.9	0.30	2.000	0	94.0	31.3	112			
Benzo(b)fluoranthene	2.0	0.40	2.000	0	101	34.1	119			
Indeno(1,2,3-cd)pyrene	2.7	0.30	2.000	0	134	24.7	152			
Surr: Nitrobenzene-d5	67		102.0		65.7	15	108			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212F05**

19-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **lcs-72406-lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **72406**	RunNo: **93725**
Prep Date: **1/3/2023**	Analysis Date: **1/5/2023**	SeqNo: **3383329** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	110		204.0		55.4	15	112			
Surr: 2-Fluorobiphenyl	57		102.0		56.1	15	107			
Surr: 4-Terphenyl-d14	100		102.0		100	15	166			

Sample ID: **lcsd-72406-lf**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02**	Batch ID: **72406**	RunNo: **93725**
Prep Date: **1/3/2023**	Analysis Date: **1/5/2023**	SeqNo: **3383330** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.80	1.0	2.000	0	40.0	15	60.5	16.2	29.7	J
Naphthalene	1.0	0.30	2.000	0	50.0	15	78.3	2.02	31.7	
1-Methylnaphthalene	0.90	0.30	2.000	0	45.0	15	79.6	8.51	31.4	
2-Methylnaphthalene	0.84	0.30	2.000	0	42.0	15	78.6	11.2	30.5	
Acenaphthene	1.1	0.30	2.000	0	56.0	15	92	3.64	30.5	
Fluorene	1.3	0.30	2.000	0	66.0	15	96	6.25	25.1	
Phenanthrene	1.6	0.30	2.000	0	78.0	21	103	6.62	26.4	
Anthracene	1.7	0.30	2.000	0	84.0	21.1	106	3.64	14.4	
Fluoranthene	1.9	0.30	2.000	0	95.0	32.8	119	4.12	14.8	
Pyrene	1.7	1.0	2.000	0	84.0	34.1	110	4.65	19.2	
Benz(a)anthracene	2.1	0.30	2.000	0	104	32	132	5.61	29.3	
Chrysene	1.8	0.30	2.000	0	89.0	31.3	112	5.46	19	
Benzo(b)fluoranthene	1.9	0.40	2.000	0	94.0	34.1	119	7.18	31.6	
Indeno(1,2,3-cd)pyrene	2.5	0.30	2.000	0	125	24.7	152	6.95	21.3	
Surr: Nitrobenzene-d5	76		102.0		74.7	15	108	0	0	
Surr: 2,4,6-Tribromophenol	120		204.0		57.9	15	112	0	0	
Surr: 2-Fluorobiphenyl	65		102.0		64.1	15	107	0	0	
Surr: 4-Terphenyl-d14	97		102.0		95.1	15	166	0	0	

Sample ID: **mb-72443**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **72443**	RunNo: **93750**
Prep Date: **1/4/2023**	Analysis Date: **1/5/2023**	SeqNo: **3384009** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.30								
1-Methylnaphthalene	ND	0.30								
2-Methylnaphthalene	ND	0.30								
Acenaphthene	ND	0.30								
Fluorene	ND	0.30								
Phenanthrene	ND	0.30								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212F05**

19-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb-72443**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **72443**	RunNo: **93750**
Prep Date: **1/4/2023**	Analysis Date: **1/5/2023**	SeqNo: **3384009** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Anthracene	ND	0.30								
Fluoranthene	ND	0.30								
Pyrene	ND	1.0								
Benz(a)anthracene	ND	0.30								
Chrysene	ND	0.30								
Benzo(b)fluoranthene	ND	0.40								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	45		100.0		44.6	15	108			
Surr: 2,4,6-Tribromophenol	82		200.0		40.8	15	112			
Surr: 2-Fluorobiphenyl	37		100.0		37.4	15	107			
Surr: 4-Terphenyl-d14	82		100.0		82.0	15	166			

Sample ID: **lcs-72443 lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **72443**	RunNo: **93750**
Prep Date: **1/4/2023**	Analysis Date: **1/5/2023**	SeqNo: **3384010** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.54	0.30	2.000	0	27.0	15	60.5			
Naphthalene	0.50	0.30	2.000	0	25.0	15	78.3			
1-Methylnaphthalene	0.44	0.30	2.000	0	22.0	15	79.6			
2-Methylnaphthalene	0.40	0.30	2.000	0	20.0	15	78.6			
Acenaphthene	0.48	0.30	2.000	0	24.0	15	92			
Fluorene	0.68	0.30	2.000	0	34.0	15	96			
Phenanthrene	0.98	0.30	2.000	0	49.0	21	103			
Anthracene	1.2	0.30	2.000	0	60.0	21.1	106			
Fluoranthene	1.6	0.30	2.000	0	80.0	32.8	119			
Pyrene	1.4	1.0	2.000	0	69.0	34.1	110			
Benz(a)anthracene	1.8	0.30	2.000	0	91.0	32	132			
Chrysene	1.5	0.30	2.000	0	74.0	31.3	112			
Benzo(b)fluoranthene	1.7	0.40	2.000	0	83.0	34.1	119			
Indeno(1,2,3-cd)pyrene	2.3	0.30	2.000	0	117	24.7	152			
Surr: Nitrobenzene-d5	61		102.0		59.6	15	108			
Surr: 2,4,6-Tribromophenol	110		204.0		51.6	15	112			
Surr: 2-Fluorobiphenyl	51		102.0		50.1	15	107			
Surr: 4-Terphenyl-d14	85		102.0		83.5	15	166			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2212F05**
19-Jan-23

Client: Marathon
Project: 2022 GW Sampling 4th Quarter

Sample ID: **lcsd-72443 lf** SampType: **LCSD** TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02** Batch ID: **72443** RunNo: **93750**
Prep Date: **1/4/2023** Analysis Date: **1/5/2023** SeqNo: **3384011** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.64	0.30	2.000	0	32.0	15	60.5	16.9	29.7	
Naphthalene	0.96	0.30	2.000	0	48.0	15	78.3	63.0	31.7	R
1-Methylnaphthalene	0.92	0.30	2.000	0	46.0	15	79.6	70.6	31.4	R
2-Methylnaphthalene	0.90	0.30	2.000	0	45.0	15	78.6	76.9	30.5	R
Acenaphthene	1.0	0.30	2.000	0	50.0	15	92	70.3	30.5	R
Fluorene	1.1	0.30	2.000	0	57.0	15	96	50.5	25.1	R
Phenanthrene	1.3	0.30	2.000	0	65.0	21	103	28.1	26.4	R
Anthracene	1.5	0.30	2.000	0	73.0	21.1	106	19.5	14.4	R
Fluoranthene	1.7	0.30	2.000	0	87.0	32.8	119	8.38	14.8	
Pyrene	1.5	1.0	2.000	0	76.0	34.1	110	9.66	19.2	
Benz(a)anthracene	2.0	0.30	2.000	0	98.0	32	132	7.41	29.3	
Chrysene	1.6	0.30	2.000	0	82.0	31.3	112	10.3	19	
Benzo(b)fluoranthene	1.8	0.40	2.000	0	89.0	34.1	119	6.98	31.6	
Indeno(1,2,3-cd)pyrene	2.4	0.30	2.000	0	122	24.7	152	4.18	21.3	
Surr: Nitrobenzene-d5	68		102.0		66.5	15	108	0	0	
Surr: 2,4,6-Tribromophenol	110		204.0		54.2	15	112	0	0	
Surr: 2-Fluorobiphenyl	59		102.0		58.0	15	107	0	0	
Surr: 4-Terphenyl-d14	71		102.0		69.9	15	166	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212F05**

19-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-72380**	SampType: **MBLK**	TestCode: **SM5210B: BOD**							
Client ID: **PBW**	Batch ID: **72380**	RunNo: **93723**							
Prep Date: **12/30/2022**	Analysis Date: **1/4/2023**	SeqNo: **3383152**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	ND	2.0								

Sample ID: **LCS-72380**	SampType: **LCS**	TestCode: **SM5210B: BOD**							
Client ID: **LCSW**	Batch ID: **72380**	RunNo: **93723**							
Prep Date: **12/30/2022**	Analysis Date: **1/4/2023**	SeqNo: **3383153**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	137	2.0	198.0	0	69.2	84.6	115.4			S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 3426 of 3808

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: MarathonWork Order Number: 2212F05ReptNo: 1

Received By: Cheyenne Cason 12/30/2022 7:30:00 AM

Completed By: Cheyenne Cason 12/30/2022 8:01:26 AM

Reviewed By: JMC 12/30/22

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☑	No ☐	NA ☐
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: 15 (<2 or >12 unless noted) JM 12/30/22

Adjusted? NO

Checked by: JM 12/30/22

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks.

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.5	Good	Not Present	Morty		
2	2.1	Good	Not Present	Morty		
3	0.7	Good	Not Present	Morty		
4	2.2	Good	Not Present	Morty		

Received by OCD: 4/21/2023 9:21:57 AM

Released to Imaging: 4/21/2023 9:40:26 AM

Client: Marathon Gallup Refinery

Mailing Address: 92 Giant Crossing Road
Jamestown,NM,87301

Phone #: 808-640-1823

Email or Fax#:

QA/QC Package:
Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
NELAC ☐ Other

EDD (Type)

X Standard Rush

Project Name:
2022 GW Sampling 4th Quarter

Project #: 597-080-001

Project Manager:
Lesli Alexander

Sampler:
On Ice: ☒ Yes ☐ No
# of Coolers: 4 Marty
Cooler Temp(including CF): See Remark

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 22122505	See Analyte	8260B VOC	8270C/SVOC	8270CSIM PAH, 1,4 Dioxane	8015: TPH GRO/DRO/MRO	E200.7: Metals	E200.7: Dissolved Metals	E245.1 Mercury	E504.1 EDB	E335.4: Cyanide Subbed		537.1 PFAS	SM 5210B: BOD	410.4: COD	EC & TDS
12/29	11:00		EB-12-29-22	13		001		X	X	X	X	X	X	X	X	X					
12/29	11:20		OW-30	13		002		X	X	X	X	X	X	X	X	X					
12/29	12:00		OW-14	13		003		X	X	X	X	X	X	X	X	X					
12/29	12:15		STP-110EP.2	17		004		X	X	X	X	X	X	X	X	X			X	X	X
12/29	12:35		MKTF-41	13		005		X	X	X	X	X	X	X	X	X			Per Marty one set/room		
12/29	12:50		MKTF-32	13		006		X	X	X	X	X	X	X	X	X					
12/29	12:50		FD-12-29-22	3		007		X	X												
12/29	—		DUP-12-29-22	13		008		X	X	X	X	X	X	X	X	X					
			*Trip Blank next Sent one/room			009															

Date	Time:	Relinquished by:	Received by:	Via:	Date Time
12/29	1:30	Hilario Tapia	One Comm		12/30/22 0730
Date:	Time:	Relinquished by:	Received by:	Via:	Date Time

0.6 - 0.1 = 0.5
2.2 - 0.1 = 2.1
0.8 - 0.1 = 0.7
2.3 - 0.1 = 2.2

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

January 09, 2023

Lesli Alexander

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX (505) 632-3911

RE: 2022 GW Sampling 4th Quarter OrderNo.: 2212303

Dear Lesli Alexander:

Hall Environmental Analysis Laboratory received 11 sample(s) on 12/7/2022 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued January 06, 2023.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **2212303**
Date: **1/9/2023**

CLIENT: Marathon
Project: 2022 GW Sampling 4th Quarter

Analytical Notes Regarding EPA Method 8015D DRO/MRO:
The method blank had a low level detection for DRO. Samples with detections are flagged with a "B".

"S" flagged surrogates/spikes denote that the analyte recovery was outstide of the standard limits.

Analytical Notes Regarding EPA Method 8270 and 8270 SIMS:
1-Methylnaphthalene, 2-Methylnaphthalene and Naphthalene were reported by EPA Method 8270 instead of EPA Method 8270SIMs becuase of their elevated concentrations for sample MKTF-18R.

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-6-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 9:10:00 AM
Lab ID: 2212303-001A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **CCM**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	12/13/2022 3:30:00 PM	R93213
Surr: BFB	104	0	70-130		%Rec	1	12/13/2022 3:30:00 PM	R93213
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	12/9/2022 5:47:03 PM	R93183
Toluene	ND	0.20	1.0		µg/L	1	12/9/2022 5:47:03 PM	R93183
Ethylbenzene	ND	0.21	1.0		µg/L	1	12/9/2022 5:47:03 PM	R93183
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	12/9/2022 5:47:03 PM	R93183
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	12/9/2022 5:47:03 PM	R93183
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	12/9/2022 5:47:03 PM	R93183
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	12/9/2022 5:47:03 PM	R93183
Acetone	ND	2.5	10		µg/L	1	12/9/2022 5:47:03 PM	R93183
Bromomethane	ND	0.85	3.0		µg/L	1	12/9/2022 5:47:03 PM	R93183
2-Butanone	ND	2.0	10		µg/L	1	12/9/2022 5:47:03 PM	R93183
Carbon disulfide	ND	0.59	10		µg/L	1	12/9/2022 5:47:03 PM	R93183
Chlorobenzene	ND	0.16	1.0		µg/L	1	12/9/2022 5:47:03 PM	R93183
Chloroform	ND	0.13	1.0		µg/L	1	12/9/2022 5:47:03 PM	R93183
Chloromethane	ND	0.41	3.0		µg/L	1	12/9/2022 5:47:03 PM	R93183
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	12/9/2022 5:47:03 PM	R93183
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	12/9/2022 5:47:03 PM	R93183
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	12/9/2022 5:47:03 PM	R93183
Isopropylbenzene	ND	0.18	1.0		µg/L	1	12/9/2022 5:47:03 PM	R93183
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	12/9/2022 5:47:03 PM	R93183
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/9/2022 5:47:03 PM	R93183
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/9/2022 5:47:03 PM	R93183
n-Propylbenzene	ND	0.18	1.0		µg/L	1	12/9/2022 5:47:03 PM	R93183
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	12/9/2022 5:47:03 PM	R93183
Styrene	ND	0.14	1.0		µg/L	1	12/9/2022 5:47:03 PM	R93183
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/9/2022 5:47:03 PM	R93183
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	12/9/2022 5:47:03 PM	R93183
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	12/9/2022 5:47:03 PM	R93183
Vinyl chloride	ND	0.32	1.0		µg/L	1	12/9/2022 5:47:03 PM	R93183
Xylenes, Total	ND	0.37	1.5		µg/L	1	12/9/2022 5:47:03 PM	R93183
Surr: 1,2-Dichloroethane-d4	109	0	70-130		%Rec	1	12/9/2022 5:47:03 PM	R93183
Surr: 4-Bromofluorobenzene	91.8	0	70-130		%Rec	1	12/9/2022 5:47:03 PM	R93183
Surr: Dibromofluoromethane	108	0	70-130		%Rec	1	12/9/2022 5:47:03 PM	R93183
Surr: Toluene-d8	104	0	70-130		%Rec	1	12/9/2022 5:47:03 PM	R93183

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-6-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 9:10:00 AM
Lab ID: 2212303-001B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	12/8/2022 5:58:46 PM	71922

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-6-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 9:10:00 AM
Lab ID: 2212303-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.037	0.016	0.064	JB	mg/L	1	12/14/2022 2:41:15 PM	71994
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/14/2022 2:41:15 PM	71994
Surr: DNOP	98.2	0	15.9-177		%Rec	1	12/14/2022 2:41:15 PM	71994
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	12/13/2022 2:05:39 PM	71974
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	12/13/2022 2:05:39 PM	71974
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	12/13/2022 2:05:39 PM	71974
Di-n-octyl phthalate	ND	12	20		µg/L	1	12/13/2022 2:05:39 PM	71974
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	12/13/2022 2:05:39 PM	71974
Diethyl phthalate	ND	6.0	10		µg/L	1	12/13/2022 2:05:39 PM	71974
Dimethyl phthalate	ND	6.0	10		µg/L	1	12/13/2022 2:05:39 PM	71974
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	12/13/2022 2:05:39 PM	71974
2,4-Dinitrophenol	ND	16	20		µg/L	1	12/13/2022 2:05:39 PM	71974
2-Methylphenol	ND	5.0	10		µg/L	1	12/13/2022 2:05:39 PM	71974
3+4-Methylphenol	ND	5.1	10		µg/L	1	12/13/2022 2:05:39 PM	71974
Phenol	ND	18	20		µg/L	1	12/13/2022 2:05:39 PM	71974
Pyridine	ND	14	40		µg/L	1	12/13/2022 2:05:39 PM	71974
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	12/13/2022 2:05:39 PM	71974
Surr: 2-Fluorophenol	44.2	0	15-84.5		%Rec	1	12/13/2022 2:05:39 PM	71974
Surr: Phenol-d5	32.8	0	15-67		%Rec	1	12/13/2022 2:05:39 PM	71974
Surr: 2,4,6-Tribromophenol	62.9	0	15-108		%Rec	1	12/13/2022 2:05:39 PM	71974
Surr: Nitrobenzene-d5	59.8	0	16.8-112		%Rec	1	12/13/2022 2:05:39 PM	71974
Surr: 2-Fluorobiphenyl	54.4	0	15-101		%Rec	1	12/13/2022 2:05:39 PM	71974
Surr: 4-Terphenyl-d14	89.5	0	34.4-134		%Rec	1	12/13/2022 2:05:39 PM	71974
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	12/12/2022 6:10:00 PM	71974
Naphthalene	ND	0.20	0.30		µg/L	1	12/12/2022 6:10:00 PM	71974
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	12/12/2022 6:10:00 PM	71974
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	12/12/2022 6:10:00 PM	71974
Acenaphthene	ND	0.14	0.30		µg/L	1	12/12/2022 6:10:00 PM	71974
Fluorene	ND	0.095	0.30		µg/L	1	12/12/2022 6:10:00 PM	71974
Phenanthrene	ND	0.16	0.30		µg/L	1	12/12/2022 6:10:00 PM	71974
Anthracene	ND	0.14	0.30		µg/L	1	12/12/2022 6:10:00 PM	71974
Fluoranthene	ND	0.14	0.30		µg/L	1	12/12/2022 6:10:00 PM	71974
Pyrene	ND	0.32	1.0		µg/L	1	12/12/2022 6:10:00 PM	71974
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	12/12/2022 6:10:00 PM	71974
Chrysene	ND	0.25	0.30		µg/L	1	12/12/2022 6:10:00 PM	71974
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	12/12/2022 6:10:00 PM	71974
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	12/12/2022 6:10:00 PM	71974

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-6-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 9:10:00 AM
Lab ID: 2212303-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	56.0	0	15-108		%Rec	1	12/12/2022 6:10:00 PM	71974
Surr: 2-Fluorobiphenyl	52.3	0	15-107		%Rec	1	12/12/2022 6:10:00 PM	71974
Surr: 4-Terphenyl-d14	114	0	15-166		%Rec	1	12/12/2022 6:10:00 PM	71974

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-6-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 9:10:00 AM
Lab ID: 2212303-001D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	ND	0.0016	0.0030		mg/L	1	12/12/2022 5:22:34 PM	71965
Beryllium	ND	0.00060	0.0020		mg/L	1	12/12/2022 5:22:34 PM	71965
Cadmium	ND	0.0018	0.0020		mg/L	1	12/12/2022 5:22:34 PM	71965
Chromium	0.0027	0.0020	0.0060	J	mg/L	1	12/12/2022 5:22:34 PM	71965
Cobalt	0.0050	0.0035	0.0060	J	mg/L	1	12/12/2022 5:22:34 PM	71965
Nickel	ND	0.0053	0.010		mg/L	1	12/12/2022 5:22:34 PM	71965
Silver	ND	0.0018	0.0050		mg/L	1	12/12/2022 5:22:34 PM	71965
Vanadium	ND	0.0035	0.050		mg/L	1	12/12/2022 5:22:34 PM	71965
Zinc	ND	0.0039	0.010		mg/L	1	12/12/2022 5:22:34 PM	71965
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	12/13/2022 12:39:00 P	71965
Arsenic	ND	0.00022	0.0010		mg/L	1	12/12/2022 3:19:37 PM	71965
Lead	ND	0.00019	0.00050		mg/L	1	12/12/2022 3:19:37 PM	71965
Selenium	ND	0.00089	0.0010		mg/L	1	12/12/2022 3:19:37 PM	71965
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/16/2022 2:04:00 PM	72127

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-6-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 9:10:00 AM
Lab ID: 2212303-001E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **VP**	
Barium	0.0016	0.0011	0.0020	J	mg/L	1	12/22/2022 3:58:12 PM	B93514
Beryllium	0.0010	0.00059	0.0020	J	mg/L	1	12/22/2022 3:58:12 PM	B93514
Cadmium	ND	0.00098	0.0020		mg/L	1	12/22/2022 3:58:12 PM	B93514
Chromium	ND	0.0020	0.0060		mg/L	1	12/22/2022 3:58:12 PM	B93514
Cobalt	ND	0.0024	0.0060		mg/L	1	12/22/2022 3:58:12 PM	B93514
Nickel	ND	0.0033	0.010		mg/L	1	12/22/2022 3:58:12 PM	B93514
Silver	ND	0.0013	0.0050		mg/L	1	12/22/2022 3:58:12 PM	B93514
Vanadium	ND	0.0017	0.050		mg/L	1	12/22/2022 3:58:12 PM	B93514
Zinc	0.0072	0.0032	0.010	J	mg/L	1	12/22/2022 3:58:12 PM	B93514
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	12/8/2022 5:27:50 PM	A93132
Arsenic	ND	0.00012	0.0010		mg/L	1	12/8/2022 5:27:50 PM	A93132
Lead	ND	0.000057	0.00050		mg/L	1	12/14/2022 3:35:58 PM	A93305
Selenium	ND	0.00034	0.0010		mg/L	1	12/8/2022 5:27:50 PM	A93132
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/16/2022 2:06:10 PM	72127

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-6-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 9:10:00 AM
Lab ID: 2212303-001F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PAC**	
Cyanide	ND	0.00500	0.00500		mg/L	1	12/14/2022 2:34:00 PM	R93762

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-46
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 9:20:00 AM
Lab ID: 2212303-002A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **CCM**	
Gasoline Range Organics (GRO)	0.033	0.0090	0.050	J	mg/L	1	12/13/2022 3:49:00 PM	R93213
Surr: BFB	101	0	70-130		%Rec	1	12/13/2022 3:49:00 PM	R93213
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	12/9/2022 6:15:29 PM	R93183
Toluene	ND	0.20	1.0		µg/L	1	12/9/2022 6:15:29 PM	R93183
Ethylbenzene	ND	0.21	1.0		µg/L	1	12/9/2022 6:15:29 PM	R93183
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	12/9/2022 6:15:29 PM	R93183
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	12/9/2022 6:15:29 PM	R93183
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	12/9/2022 6:15:29 PM	R93183
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	12/9/2022 6:15:29 PM	R93183
Acetone	ND	2.5	10		µg/L	1	12/9/2022 6:15:29 PM	R93183
Bromomethane	ND	0.85	3.0		µg/L	1	12/9/2022 6:15:29 PM	R93183
2-Butanone	ND	2.0	10		µg/L	1	12/9/2022 6:15:29 PM	R93183
Carbon disulfide	ND	0.59	10		µg/L	1	12/9/2022 6:15:29 PM	R93183
Chlorobenzene	ND	0.16	1.0		µg/L	1	12/9/2022 6:15:29 PM	R93183
Chloroform	ND	0.13	1.0		µg/L	1	12/9/2022 6:15:29 PM	R93183
Chloromethane	ND	0.41	3.0		µg/L	1	12/9/2022 6:15:29 PM	R93183
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	12/9/2022 6:15:29 PM	R93183
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	12/9/2022 6:15:29 PM	R93183
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	12/9/2022 6:15:29 PM	R93183
Isopropylbenzene	ND	0.18	1.0		µg/L	1	12/9/2022 6:15:29 PM	R93183
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	12/9/2022 6:15:29 PM	R93183
Methylene Chloride	3.9	0.50	3.0		µg/L	1	12/12/2022 11:14:12 A	R93209
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/9/2022 6:15:29 PM	R93183
n-Propylbenzene	ND	0.18	1.0		µg/L	1	12/9/2022 6:15:29 PM	R93183
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	12/9/2022 6:15:29 PM	R93183
Styrene	ND	0.14	1.0		µg/L	1	12/9/2022 6:15:29 PM	R93183
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/9/2022 6:15:29 PM	R93183
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	12/9/2022 6:15:29 PM	R93183
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	12/9/2022 6:15:29 PM	R93183
Vinyl chloride	ND	0.32	1.0		µg/L	1	12/9/2022 6:15:29 PM	R93183
Xylenes, Total	ND	0.37	1.5		µg/L	1	12/9/2022 6:15:29 PM	R93183
Surr: 1,2-Dichloroethane-d4	116	0	70-130		%Rec	1	12/9/2022 6:15:29 PM	R93183
Surr: 4-Bromofluorobenzene	92.5	0	70-130		%Rec	1	12/9/2022 6:15:29 PM	R93183
Surr: Dibromofluoromethane	115	0	70-130		%Rec	1	12/9/2022 6:15:29 PM	R93183
Surr: Toluene-d8	104	0	70-130		%Rec	1	12/9/2022 6:15:29 PM	R93183

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-46
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 9:20:00 AM
Lab ID: 2212303-002B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	12/8/2022 6:28:41 PM	71922

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-46
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 9:20:00 AM
Lab ID: 2212303-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.051	0.016	0.064	JB	mg/L	1	12/14/2022 3:05:06 PM	71994
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/14/2022 3:05:06 PM	71994
Surr: DNOP	101	0	15.9-177		%Rec	1	12/14/2022 3:05:06 PM	71994
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	12/13/2022 2:46:44 PM	71974
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	12/13/2022 2:46:44 PM	71974
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	12/13/2022 2:46:44 PM	71974
Di-n-octyl phthalate	ND	12	20		µg/L	1	12/13/2022 2:46:44 PM	71974
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	12/13/2022 2:46:44 PM	71974
Diethyl phthalate	ND	6.0	10		µg/L	1	12/13/2022 2:46:44 PM	71974
Dimethyl phthalate	ND	6.0	10		µg/L	1	12/13/2022 2:46:44 PM	71974
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	12/13/2022 2:46:44 PM	71974
2,4-Dinitrophenol	ND	16	20		µg/L	1	12/13/2022 2:46:44 PM	71974
2-Methylphenol	ND	5.0	10		µg/L	1	12/13/2022 2:46:44 PM	71974
3+4-Methylphenol	ND	5.1	10		µg/L	1	12/13/2022 2:46:44 PM	71974
Phenol	ND	18	20		µg/L	1	12/13/2022 2:46:44 PM	71974
Pyridine	ND	14	40		µg/L	1	12/13/2022 2:46:44 PM	71974
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	12/13/2022 2:46:44 PM	71974
Surr: 2-Fluorophenol	26.5	0	15-84.5		%Rec	1	12/13/2022 2:46:44 PM	71974
Surr: Phenol-d5	21.6	0	15-67		%Rec	1	12/13/2022 2:46:44 PM	71974
Surr: 2,4,6-Tribromophenol	31.4	0	15-108		%Rec	1	12/13/2022 2:46:44 PM	71974
Surr: Nitrobenzene-d5	37.8	0	16.8-112		%Rec	1	12/13/2022 2:46:44 PM	71974
Surr: 2-Fluorobiphenyl	33.2	0	15-101		%Rec	1	12/13/2022 2:46:44 PM	71974
Surr: 4-Terphenyl-d14	79.9	0	34.4-134		%Rec	1	12/13/2022 2:46:44 PM	71974
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	0.84	0.11	1.0	J	µg/L	1	12/12/2022 6:54:00 PM	71974
Naphthalene	ND	0.20	0.30		µg/L	1	12/12/2022 6:54:00 PM	71974
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	12/12/2022 6:54:00 PM	71974
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	12/12/2022 6:54:00 PM	71974
Acenaphthene	ND	0.14	0.30		µg/L	1	12/12/2022 6:54:00 PM	71974
Fluorene	ND	0.095	0.30		µg/L	1	12/12/2022 6:54:00 PM	71974
Phenanthrene	ND	0.16	0.30		µg/L	1	12/12/2022 6:54:00 PM	71974
Anthracene	ND	0.14	0.30		µg/L	1	12/12/2022 6:54:00 PM	71974
Fluoranthene	ND	0.14	0.30		µg/L	1	12/12/2022 6:54:00 PM	71974
Pyrene	ND	0.32	1.0		µg/L	1	12/12/2022 6:54:00 PM	71974
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	12/12/2022 6:54:00 PM	71974
Chrysene	ND	0.25	0.30		µg/L	1	12/12/2022 6:54:00 PM	71974
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	12/12/2022 6:54:00 PM	71974
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	12/12/2022 6:54:00 PM	71974

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-46
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 9:20:00 AM
Lab ID: 2212303-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	34.0	0	15-108		%Rec	1	12/12/2022 6:54:00 PM	71974
Surr: 2-Fluorobiphenyl	32.8	0	15-107		%Rec	1	12/12/2022 6:54:00 PM	71974
Surr: 4-Terphenyl-d14	90.6	0	15-166		%Rec	1	12/12/2022 6:54:00 PM	71974

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-46
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 9:20:00 AM
Lab ID: 2212303-002D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.081	0.0016	0.0030		mg/L	1	12/12/2022 5:27:19 PM	71965
Beryllium	ND	0.00060	0.0020		mg/L	1	12/12/2022 5:27:19 PM	71965
Cadmium	ND	0.0018	0.0020		mg/L	1	12/12/2022 5:27:19 PM	71965
Chromium	ND	0.0020	0.0060		mg/L	1	12/12/2022 5:27:19 PM	71965
Cobalt	0.016	0.0035	0.0060		mg/L	1	12/12/2022 5:27:19 PM	71965
Nickel	ND	0.0053	0.010		mg/L	1	12/12/2022 5:27:19 PM	71965
Silver	0.0019	0.0018	0.0050	J	mg/L	1	12/12/2022 5:27:19 PM	71965
Vanadium	0.0040	0.0035	0.050	J	mg/L	1	12/12/2022 5:27:19 PM	71965
Zinc	ND	0.0039	0.010		mg/L	1	12/12/2022 5:27:19 PM	71965
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	12/13/2022 12:41:27 P	71965
Arsenic	0.0011	0.00022	0.0010		mg/L	1	12/12/2022 3:22:03 PM	71965
Lead	0.0011	0.00019	0.00050		mg/L	1	12/12/2022 3:22:03 PM	71965
Selenium	ND	0.00089	0.0010		mg/L	1	12/12/2022 3:22:03 PM	71965
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00017	0.000091	0.00020	J	mg/L	1	12/16/2022 4:16:40 PM	72127

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-46
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 9:20:00 AM
Lab ID: 2212303-002E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **VP**	
Barium	0.042	0.0011	0.0020		mg/L	1	12/22/2022 4:01:13 PM	B93514
Beryllium	ND	0.00059	0.0020		mg/L	1	12/22/2022 4:01:13 PM	B93514
Cadmium	ND	0.00098	0.0020		mg/L	1	12/22/2022 4:01:13 PM	B93514
Chromium	ND	0.0020	0.0060		mg/L	1	12/22/2022 4:01:13 PM	B93514
Cobalt	ND	0.0024	0.0060		mg/L	1	12/22/2022 4:01:13 PM	B93514
Nickel	ND	0.0033	0.010		mg/L	1	12/22/2022 4:01:13 PM	B93514
Silver	0.0032	0.0013	0.0050	J	mg/L	1	12/22/2022 4:01:13 PM	B93514
Vanadium	0.0037	0.0017	0.050	J	mg/L	1	12/22/2022 4:01:13 PM	B93514
Zinc	0.0080	0.0032	0.010	J	mg/L	1	12/22/2022 4:01:13 PM	B93514
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	0.00057	0.00044	0.0010	J	mg/L	1	12/8/2022 5:43:12 PM	A93132
Arsenic	0.00081	0.00012	0.0010	J	mg/L	1	12/8/2022 5:43:12 PM	A93132
Lead	ND	0.000057	0.00050		mg/L	1	12/15/2022 1:19:11 PM	A93335
Selenium	0.00069	0.00034	0.0010	J	mg/L	1	12/8/2022 5:43:12 PM	A93132
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00013	0.000091	0.00020	J	mg/L	1	12/16/2022 2:17:37 PM	72127

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-46
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 9:20:00 AM
Lab ID: 2212303-002F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PAC**	
Cyanide	ND	0.00500	0.00500		mg/L	1	12/14/2022 2:36:00 PM	R93762

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18R
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 9:50:00 AM
Lab ID: 2212303-003A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **CCM**	
Gasoline Range Organics (GRO)	8.4	0.090	0.50		mg/L	10	12/13/2022 4:09:00 PM	R93213
Surr: BFB	112	0	70-130		%Rec	10	12/13/2022 4:09:00 PM	R93213
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	2600	23	100		µg/L	100	12/9/2022 6:44:03 PM	R93183
Toluene	410	2.0	10		µg/L	10	12/9/2022 7:12:41 PM	R93183
Ethylbenzene	47	2.1	10		µg/L	10	12/9/2022 7:12:41 PM	R93183
Methyl tert-butyl ether (MTBE)	170	3.9	10		µg/L	10	12/9/2022 7:12:41 PM	R93183
1,2,4-Trimethylbenzene	39	1.2	10		µg/L	10	12/9/2022 7:12:41 PM	R93183
1,3,5-Trimethylbenzene	15	1.8	10		µg/L	10	12/9/2022 7:12:41 PM	R93183
1,2-Dichloroethane (EDC)	ND	2.5	10		µg/L	10	12/9/2022 7:12:41 PM	R93183
Acetone	ND	25	100		µg/L	10	12/9/2022 7:12:41 PM	R93183
Bromomethane	ND	8.5	30		µg/L	10	12/9/2022 7:12:41 PM	R93183
2-Butanone	ND	20	100		µg/L	10	12/9/2022 7:12:41 PM	R93183
Carbon disulfide	ND	5.9	100		µg/L	10	12/9/2022 7:12:41 PM	R93183
Chlorobenzene	ND	1.6	10		µg/L	10	12/9/2022 7:12:41 PM	R93183
Chloroform	ND	1.3	10		µg/L	10	12/9/2022 7:12:41 PM	R93183
Chloromethane	ND	4.1	30		µg/L	10	12/9/2022 7:12:41 PM	R93183
cis-1,2-DCE	ND	3.9	10		µg/L	10	12/9/2022 7:12:41 PM	R93183
1,1-Dichloroethane	ND	2.7	10		µg/L	10	12/9/2022 7:12:41 PM	R93183
1,1-Dichloroethene	ND	2.0	10		µg/L	10	12/9/2022 7:12:41 PM	R93183
Isopropylbenzene	ND	1.8	10		µg/L	10	12/9/2022 7:12:41 PM	R93183
4-Isopropyltoluene	ND	2.0	10		µg/L	10	12/9/2022 7:12:41 PM	R93183
Methylene Chloride	ND	5.0	30		µg/L	10	12/9/2022 7:12:41 PM	R93183
n-Butylbenzene	ND	2.5	30		µg/L	10	12/9/2022 7:12:41 PM	R93183
n-Propylbenzene	5.6	1.8	10	J	µg/L	10	12/9/2022 7:12:41 PM	R93183
sec-Butylbenzene	ND	1.4	10		µg/L	10	12/9/2022 7:12:41 PM	R93183
Styrene	ND	1.4	10		µg/L	10	12/9/2022 7:12:41 PM	R93183
Tetrachloroethene (PCE)	ND	3.6	10		µg/L	10	12/9/2022 7:12:41 PM	R93183
1,1,1-Trichloroethane	ND	3.0	10		µg/L	10	12/9/2022 7:12:41 PM	R93183
Trichloroethene (TCE)	ND	2.0	10		µg/L	10	12/9/2022 7:12:41 PM	R93183
Vinyl chloride	ND	3.2	10		µg/L	10	12/9/2022 7:12:41 PM	R93183
Xylenes, Total	340	3.7	15		µg/L	10	12/9/2022 7:12:41 PM	R93183
Surr: 1,2-Dichloroethane-d4	109	0	70-130		%Rec	10	12/9/2022 7:12:41 PM	R93183
Surr: 4-Bromofluorobenzene	85.5	0	70-130		%Rec	10	12/9/2022 7:12:41 PM	R93183
Surr: Dibromofluoromethane	103	0	70-130		%Rec	10	12/9/2022 7:12:41 PM	R93183
Surr: Toluene-d8	104	0	70-130		%Rec	10	12/9/2022 7:12:41 PM	R93183

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18R
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 9:50:00 AM
Lab ID: 2212303-003B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	12/8/2022 6:43:36 PM	71922

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18R
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 9:50:00 AM
Lab ID: 2212303-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	2.5	0.016	0.064	B	mg/L	1	12/14/2022 3:28:55 PM	71994
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/14/2022 3:28:55 PM	71994
Surr: DNOP	96.9	0	15.9-177		%Rec	1	12/14/2022 3:28:55 PM	71994
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	12/13/2022 3:27:57 PM	71974
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	12/13/2022 3:27:57 PM	71974
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	12/13/2022 3:27:57 PM	71974
Di-n-octyl phthalate	ND	12	20		µg/L	1	12/13/2022 3:27:57 PM	71974
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	12/13/2022 3:27:57 PM	71974
Diethyl phthalate	ND	6.0	10		µg/L	1	12/13/2022 3:27:57 PM	71974
Dimethyl phthalate	ND	6.0	10		µg/L	1	12/13/2022 3:27:57 PM	71974
2,4-Dimethylphenol	10	5.8	10	J	µg/L	1	12/13/2022 3:27:57 PM	71974
2,4-Dinitrophenol	ND	16	20		µg/L	1	12/13/2022 3:27:57 PM	71974
1-Methylnaphthalene	89	4.3	5.0		µg/L	1	12/13/2022 3:27:57 PM	71974
2-Methylnaphthalene	87	4.2	5.0		µg/L	1	12/13/2022 3:27:57 PM	71974
2-Methylphenol	25	5.0	10		µg/L	1	12/13/2022 3:27:57 PM	71974
3+4-Methylphenol	ND	5.1	10		µg/L	1	12/13/2022 3:27:57 PM	71974
Naphthalene	52	3.2	5.0		µg/L	1	12/13/2022 3:27:57 PM	71974
Phenol	19	18	20	J	µg/L	1	12/13/2022 3:27:57 PM	71974
Pyridine	ND	14	40		µg/L	1	12/13/2022 3:27:57 PM	71974
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	12/13/2022 3:27:57 PM	71974
Surr: 2-Fluorophenol	37.7	0	15-84.5		%Rec	1	12/13/2022 3:27:57 PM	71974
Surr: Phenol-d5	31.7	0	15-67		%Rec	1	12/13/2022 3:27:57 PM	71974
Surr: 2,4,6-Tribromophenol	70.8	0	15-108		%Rec	1	12/13/2022 3:27:57 PM	71974
Surr: Nitrobenzene-d5	54.6	0	16.8-112		%Rec	1	12/13/2022 3:27:57 PM	71974
Surr: 2-Fluorobiphenyl	51.6	0	15-101		%Rec	1	12/13/2022 3:27:57 PM	71974
Surr: 4-Terphenyl-d14	80.3	0	34.4-134		%Rec	1	12/13/2022 3:27:57 PM	71974
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	10	0.11	1.0		µg/L	1	12/12/2022 7:38:00 PM	71974
Acenaphthene	5.5	0.14	0.30		µg/L	1	12/12/2022 7:38:00 PM	71974
Fluorene	6.7	0.095	0.30		µg/L	1	12/12/2022 7:38:00 PM	71974
Phenanthrene	5.6	0.16	0.30		µg/L	1	12/12/2022 7:38:00 PM	71974
Anthracene	0.38	0.14	0.30		µg/L	1	12/12/2022 7:38:00 PM	71974
Fluoranthene	0.14	0.14	0.30	J	µg/L	1	12/12/2022 7:38:00 PM	71974
Pyrene	ND	0.32	1.0		µg/L	1	12/12/2022 7:38:00 PM	71974
Benz(a)anthracene	0.16	0.15	0.30	J	µg/L	1	12/12/2022 7:38:00 PM	71974
Chrysene	ND	0.25	0.30		µg/L	1	12/12/2022 7:38:00 PM	71974
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	12/12/2022 7:38:00 PM	71974
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	12/12/2022 7:38:00 PM	71974

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18R
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 9:50:00 AM
Lab ID: 2212303-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	50.1	0	15-108		%Rec	1	12/12/2022 7:38:00 PM	71974
Surr: 2-Fluorobiphenyl	44.6	0	15-107		%Rec	1	12/12/2022 7:38:00 PM	71974
Surr: 4-Terphenyl-d14	75.4	0	15-166		%Rec	1	12/12/2022 7:38:00 PM	71974

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18R
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 9:50:00 AM
Lab ID: 2212303-003D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	2.7	0.0079	0.015	*	mg/L	5	12/12/2022 5:38:23 PM	71965
Beryllium	ND	0.00060	0.0020		mg/L	1	12/12/2022 5:37:00 PM	71965
Cadmium	ND	0.0018	0.0020		mg/L	1	12/12/2022 5:37:00 PM	71965
Chromium	ND	0.0020	0.0060		mg/L	1	12/12/2022 5:37:00 PM	71965
Cobalt	0.0097	0.0035	0.0060		mg/L	1	12/12/2022 5:37:00 PM	71965
Nickel	0.0084	0.0053	0.010	J	mg/L	1	12/12/2022 5:37:00 PM	71965
Silver	ND	0.0018	0.0050		mg/L	1	12/12/2022 5:37:00 PM	71965
Vanadium	0.0037	0.0035	0.050	J	mg/L	1	12/12/2022 5:37:00 PM	71965
Zinc	0.0066	0.0039	0.010	J	mg/L	1	12/12/2022 5:37:00 PM	71965
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	12/13/2022 12:43:53 P	71965
Arsenic	0.0042	0.00022	0.0010		mg/L	1	12/12/2022 3:24:30 PM	71965
Lead	0.0018	0.00019	0.00050		mg/L	1	12/12/2022 3:24:30 PM	71965
Selenium	0.0011	0.00089	0.0010		mg/L	1	12/12/2022 3:24:30 PM	71965
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/16/2022 2:19:46 PM	72127

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18R
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 9:50:00 AM
Lab ID: 2212303-003E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **VP**	
Barium	1.9	0.0056	0.010		mg/L	5	12/22/2022 4:10:18 PM	B93514
Beryllium	ND	0.00059	0.0020		mg/L	1	12/22/2022 4:08:35 PM	B93514
Cadmium	ND	0.00098	0.0020		mg/L	1	12/22/2022 4:08:35 PM	B93514
Chromium	ND	0.0020	0.0060		mg/L	1	12/22/2022 4:08:35 PM	B93514
Cobalt	ND	0.0024	0.0060		mg/L	1	12/22/2022 4:08:35 PM	B93514
Nickel	0.0075	0.0033	0.010	J	mg/L	1	12/22/2022 4:08:35 PM	B93514
Silver	0.0014	0.0013	0.0050	J	mg/L	1	12/22/2022 4:08:35 PM	B93514
Vanadium	ND	0.0017	0.050		mg/L	1	12/22/2022 4:08:35 PM	B93514
Zinc	0.19	0.0032	0.010		mg/L	1	12/22/2022 4:08:35 PM	B93514
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	0.00061	0.00044	0.0010	J	mg/L	1	12/8/2022 5:53:26 PM	A93132
Arsenic	0.0080	0.00012	0.0010		mg/L	1	12/14/2022 3:46:12 PM	A93305
Lead	ND	0.000057	0.00050		mg/L	1	12/14/2022 3:46:12 PM	A93305
Selenium	ND	0.00034	0.0010		mg/L	1	12/14/2022 3:46:12 PM	A93305
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00013	0.000091	0.00020	J	mg/L	1	12/16/2022 2:21:54 PM	72127

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18R
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 9:50:00 AM
Lab ID: 2212303-003F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PAC**	
Cyanide	ND	0.00500	0.00500		mg/L	1	12/14/2022 2:37:00 PM	R93762

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-16
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 10:10:00 AM
Lab ID: 2212303-004A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **CCM**	
Gasoline Range Organics (GRO)	2.1	0.0090	0.050		mg/L	1	12/13/2022 4:29:00 PM	R93213
Surr: BFB	152	0	70-130	S	%Rec	1	12/13/2022 4:29:00 PM	R93213
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	450	1.1	5.0		µg/L	5	12/9/2022 7:41:17 PM	R93183
Toluene	ND	1.0	5.0		µg/L	5	12/9/2022 7:41:17 PM	R93183
Ethylbenzene	76	1.1	5.0		µg/L	5	12/9/2022 7:41:17 PM	R93183
Methyl tert-butyl ether (MTBE)	11	2.0	5.0		µg/L	5	12/9/2022 7:41:17 PM	R93183
1,2,4-Trimethylbenzene	27	0.61	5.0		µg/L	5	12/9/2022 7:41:17 PM	R93183
1,3,5-Trimethylbenzene	ND	0.91	5.0		µg/L	5	12/9/2022 7:41:17 PM	R93183
1,2-Dichloroethane (EDC)	ND	1.3	5.0		µg/L	5	12/9/2022 7:41:17 PM	R93183
Acetone	ND	13	50		µg/L	5	12/9/2022 7:41:17 PM	R93183
Bromomethane	ND	4.3	15		µg/L	5	12/9/2022 7:41:17 PM	R93183
2-Butanone	ND	10	50		µg/L	5	12/9/2022 7:41:17 PM	R93183
Carbon disulfide	ND	3.0	50		µg/L	5	12/9/2022 7:41:17 PM	R93183
Chlorobenzene	ND	0.78	5.0		µg/L	5	12/9/2022 7:41:17 PM	R93183
Chloroform	ND	0.67	5.0		µg/L	5	12/9/2022 7:41:17 PM	R93183
Chloromethane	ND	2.1	15		µg/L	5	12/9/2022 7:41:17 PM	R93183
cis-1,2-DCE	ND	1.9	5.0		µg/L	5	12/9/2022 7:41:17 PM	R93183
1,1-Dichloroethane	9.1	1.4	5.0		µg/L	5	12/9/2022 7:41:17 PM	R93183
1,1-Dichloroethene	ND	1.0	5.0		µg/L	5	12/9/2022 7:41:17 PM	R93183
Isopropylbenzene	3.2	0.91	5.0	J	µg/L	5	12/9/2022 7:41:17 PM	R93183
4-Isopropyltoluene	ND	1.0	5.0		µg/L	5	12/9/2022 7:41:17 PM	R93183
Methylene Chloride	ND	2.5	15		µg/L	5	12/9/2022 7:41:17 PM	R93183
n-Butylbenzene	ND	1.3	15		µg/L	5	12/9/2022 7:41:17 PM	R93183
n-Propylbenzene	6.5	0.91	5.0		µg/L	5	12/9/2022 7:41:17 PM	R93183
sec-Butylbenzene	ND	0.72	5.0		µg/L	5	12/9/2022 7:41:17 PM	R93183
Styrene	ND	0.68	5.0		µg/L	5	12/9/2022 7:41:17 PM	R93183
Tetrachloroethene (PCE)	ND	1.8	5.0		µg/L	5	12/9/2022 7:41:17 PM	R93183
1,1,1-Trichloroethane	ND	1.5	5.0		µg/L	5	12/9/2022 7:41:17 PM	R93183
Trichloroethene (TCE)	ND	1.0	5.0		µg/L	5	12/9/2022 7:41:17 PM	R93183
Vinyl chloride	ND	1.6	5.0		µg/L	5	12/9/2022 7:41:17 PM	R93183
Xylenes, Total	ND	1.9	7.5		µg/L	5	12/9/2022 7:41:17 PM	R93183
Surr: 1,2-Dichloroethane-d4	112	0	70-130		%Rec	5	12/9/2022 7:41:17 PM	R93183
Surr: 4-Bromofluorobenzene	83.9	0	70-130		%Rec	5	12/9/2022 7:41:17 PM	R93183
Surr: Dibromofluoromethane	103	0	70-130		%Rec	5	12/9/2022 7:41:17 PM	R93183
Surr: Toluene-d8	104	0	70-130		%Rec	5	12/9/2022 7:41:17 PM	R93183

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-16
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 10:10:00 AM
Lab ID: 2212303-004B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	12/8/2022 7:13:28 PM	71922

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-3
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 10:35:00 AM
Lab ID: 2212303-005A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **CCM**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	12/13/2022 4:48:00 PM	R93213
Surr: BFB	99.0	0	70-130		%Rec	1	12/13/2022 4:48:00 PM	R93213
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	12/9/2022 8:09:53 PM	R93183
Toluene	ND	0.20	1.0		µg/L	1	12/9/2022 8:09:53 PM	R93183
Ethylbenzene	ND	0.21	1.0		µg/L	1	12/9/2022 8:09:53 PM	R93183
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	12/9/2022 8:09:53 PM	R93183
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	12/9/2022 8:09:53 PM	R93183
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	12/9/2022 8:09:53 PM	R93183
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	12/9/2022 8:09:53 PM	R93183
Acetone	ND	2.5	10		µg/L	1	12/9/2022 8:09:53 PM	R93183
Bromomethane	ND	0.85	3.0		µg/L	1	12/9/2022 8:09:53 PM	R93183
2-Butanone	ND	2.0	10		µg/L	1	12/9/2022 8:09:53 PM	R93183
Carbon disulfide	ND	0.59	10		µg/L	1	12/9/2022 8:09:53 PM	R93183
Chlorobenzene	ND	0.16	1.0		µg/L	1	12/9/2022 8:09:53 PM	R93183
Chloroform	ND	0.13	1.0		µg/L	1	12/9/2022 8:09:53 PM	R93183
Chloromethane	ND	0.41	3.0		µg/L	1	12/9/2022 8:09:53 PM	R93183
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	12/9/2022 8:09:53 PM	R93183
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	12/9/2022 8:09:53 PM	R93183
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	12/9/2022 8:09:53 PM	R93183
Isopropylbenzene	ND	0.18	1.0		µg/L	1	12/9/2022 8:09:53 PM	R93183
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	12/9/2022 8:09:53 PM	R93183
Methylene Chloride	3.3	0.50	3.0		µg/L	1	12/12/2022 11:42:55 A	R93209
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/9/2022 8:09:53 PM	R93183
n-Propylbenzene	ND	0.18	1.0		µg/L	1	12/9/2022 8:09:53 PM	R93183
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	12/9/2022 8:09:53 PM	R93183
Styrene	ND	0.14	1.0		µg/L	1	12/9/2022 8:09:53 PM	R93183
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/9/2022 8:09:53 PM	R93183
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	12/9/2022 8:09:53 PM	R93183
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	12/9/2022 8:09:53 PM	R93183
Vinyl chloride	ND	0.32	1.0		µg/L	1	12/9/2022 8:09:53 PM	R93183
Xylenes, Total	ND	0.37	1.5		µg/L	1	12/9/2022 8:09:53 PM	R93183
Surr: 1,2-Dichloroethane-d4	117	0	70-130		%Rec	1	12/9/2022 8:09:53 PM	R93183
Surr: 4-Bromofluorobenzene	94.8	0	70-130		%Rec	1	12/9/2022 8:09:53 PM	R93183
Surr: Dibromofluoromethane	116	0	70-130		%Rec	1	12/9/2022 8:09:53 PM	R93183
Surr: Toluene-d8	99.1	0	70-130		%Rec	1	12/9/2022 8:09:53 PM	R93183

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-3
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 10:35:00 AM
Lab ID: 2212303-005B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	12/8/2022 7:58:10 PM	71922

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-3
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 10:35:00 AM
Lab ID: 2212303-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.019	0.016	0.064	JB	mg/L	1	12/14/2022 3:52:38 PM	71994
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/14/2022 3:52:38 PM	71994
Surr: DNOP	100	0	15.9-177		%Rec	1	12/14/2022 3:52:38 PM	71994
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	12/13/2022 4:09:37 PM	71974
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	12/13/2022 4:09:37 PM	71974
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	12/13/2022 4:09:37 PM	71974
Di-n-octyl phthalate	ND	12	20		µg/L	1	12/13/2022 4:09:37 PM	71974
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	12/13/2022 4:09:37 PM	71974
Diethyl phthalate	ND	6.0	10		µg/L	1	12/13/2022 4:09:37 PM	71974
Dimethyl phthalate	ND	6.0	10		µg/L	1	12/13/2022 4:09:37 PM	71974
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	12/13/2022 4:09:37 PM	71974
2,4-Dinitrophenol	ND	16	20		µg/L	1	12/13/2022 4:09:37 PM	71974
2-Methylphenol	ND	5.0	10		µg/L	1	12/13/2022 4:09:37 PM	71974
3+4-Methylphenol	ND	5.1	10		µg/L	1	12/13/2022 4:09:37 PM	71974
Phenol	ND	18	20		µg/L	1	12/13/2022 4:09:37 PM	71974
Pyridine	ND	14	40		µg/L	1	12/13/2022 4:09:37 PM	71974
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	12/13/2022 4:09:37 PM	71974
Surr: 2-Fluorophenol	31.9	0	15-84.5		%Rec	1	12/13/2022 4:09:37 PM	71974
Surr: Phenol-d5	32.9	0	15-67		%Rec	1	12/13/2022 4:09:37 PM	71974
Surr: 2,4,6-Tribromophenol	12.3	0	15-108	S	%Rec	1	12/13/2022 4:09:37 PM	71974
Surr: Nitrobenzene-d5	58.4	0	16.8-112		%Rec	1	12/13/2022 4:09:37 PM	71974
Surr: 2-Fluorobiphenyl	50.0	0	15-101		%Rec	1	12/13/2022 4:09:37 PM	71974
Surr: 4-Terphenyl-d14	80.3	0	34.4-134		%Rec	1	12/13/2022 4:09:37 PM	71974
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	12/12/2022 9:17:00 PM	71974
Naphthalene	ND	0.20	0.30		µg/L	1	12/12/2022 9:17:00 PM	71974
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	12/12/2022 9:17:00 PM	71974
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	12/12/2022 9:17:00 PM	71974
Acenaphthene	ND	0.14	0.30		µg/L	1	12/12/2022 9:17:00 PM	71974
Fluorene	ND	0.095	0.30		µg/L	1	12/12/2022 9:17:00 PM	71974
Phenanthrene	ND	0.16	0.30		µg/L	1	12/12/2022 9:17:00 PM	71974
Anthracene	ND	0.14	0.30		µg/L	1	12/12/2022 9:17:00 PM	71974
Fluoranthene	ND	0.14	0.30		µg/L	1	12/12/2022 9:17:00 PM	71974
Pyrene	ND	0.32	1.0		µg/L	1	12/12/2022 9:17:00 PM	71974
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	12/12/2022 9:17:00 PM	71974
Chrysene	ND	0.25	0.30		µg/L	1	12/12/2022 9:17:00 PM	71974
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	12/12/2022 9:17:00 PM	71974
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	12/12/2022 9:17:00 PM	71974

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-3
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 10:35:00 AM
Lab ID: 2212303-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	57.4	0	15-108		%Rec	1	12/12/2022 9:17:00 PM	71974
Surr: 2-Fluorobiphenyl	52.1	0	15-107		%Rec	1	12/12/2022 9:17:00 PM	71974
Surr: 4-Terphenyl-d14	108	0	15-166		%Rec	1	12/12/2022 9:17:00 PM	71974

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-3
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 10:35:00 AM
Lab ID: 2212303-005D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.014	0.0016	0.0030		mg/L	1	12/12/2022 5:41:34 PM	71965
Beryllium	ND	0.00060	0.0020		mg/L	1	12/12/2022 5:41:34 PM	71965
Cadmium	ND	0.0018	0.0020		mg/L	1	12/12/2022 5:41:34 PM	71965
Chromium	ND	0.0020	0.0060		mg/L	1	12/12/2022 5:41:34 PM	71965
Cobalt	0.013	0.0035	0.0060		mg/L	1	12/12/2022 5:41:34 PM	71965
Nickel	ND	0.0053	0.010		mg/L	1	12/12/2022 5:41:34 PM	71965
Silver	0.0033	0.0018	0.0050	J	mg/L	1	12/12/2022 5:41:34 PM	71965
Vanadium	ND	0.0035	0.050		mg/L	1	12/12/2022 5:41:34 PM	71965
Zinc	0.034	0.0039	0.010		mg/L	1	12/12/2022 5:41:34 PM	71965
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	12/19/2022 1:43:35 PM	71965
Arsenic	0.0035	0.00022	0.0010		mg/L	1	12/12/2022 3:26:57 PM	71965
Lead	ND	0.00019	0.00050		mg/L	1	12/12/2022 3:26:57 PM	71965
Selenium	0.0014	0.00089	0.0010		mg/L	1	12/12/2022 3:26:57 PM	71965
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00010	0.000091	0.00020	J	mg/L	1	12/16/2022 2:24:02 PM	72127

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-3
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 10:35:00 AM
Lab ID: 2212303-005E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **VP**	
Barium	0.012	0.0011	0.0020		mg/L	1	12/22/2022 4:12:03 PM	B93514
Beryllium	ND	0.00059	0.0020		mg/L	1	12/22/2022 4:12:03 PM	B93514
Cadmium	ND	0.00098	0.0020		mg/L	1	12/22/2022 4:12:03 PM	B93514
Chromium	ND	0.0020	0.0060		mg/L	1	12/22/2022 4:12:03 PM	B93514
Cobalt	ND	0.0024	0.0060		mg/L	1	12/22/2022 4:12:03 PM	B93514
Nickel	ND	0.0033	0.010		mg/L	1	12/22/2022 4:12:03 PM	B93514
Silver	0.0040	0.0013	0.0050	J	mg/L	1	12/22/2022 4:12:03 PM	B93514
Vanadium	0.0038	0.0017	0.050	J	mg/L	1	12/22/2022 4:12:03 PM	B93514
Zinc	0.065	0.0032	0.010		mg/L	1	12/22/2022 4:12:03 PM	B93514
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	0.00066	0.00044	0.0010	J	mg/L	1	12/8/2022 5:58:33 PM	A93132
Arsenic	0.0038	0.00012	0.0010		mg/L	1	12/8/2022 5:58:33 PM	A93132
Lead	ND	0.000057	0.00050		mg/L	1	12/15/2022 1:24:33 PM	A93335
Selenium	0.0011	0.00034	0.0010		mg/L	1	12/8/2022 5:58:33 PM	A93132
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00011	0.000091	0.00020	J	mg/L	1	12/16/2022 2:26:11 PM	72127

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-3
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 10:35:00 AM
Lab ID: 2212303-005F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PAC**	
Cyanide	ND	0.00500	0.00500		mg/L	1	12/14/2022 2:38:00 PM	R93762

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: East LDU
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 10:50:00 AM
Lab ID: 2212303-006A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **CCM**	
Gasoline Range Organics (GRO)	0.52	0.0090	0.050		mg/L	1	12/13/2022 5:08:00 PM	R93213
Surr: BFB	206	0	70-130	S	%Rec	1	12/13/2022 5:08:00 PM	R93213
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	37	0.23	1.0		µg/L	1	12/9/2022 8:38:31 PM	R93183
Toluene	13	0.20	1.0		µg/L	1	12/9/2022 8:38:31 PM	R93183
Ethylbenzene	17	0.21	1.0		µg/L	1	12/9/2022 8:38:31 PM	R93183
Methyl tert-butyl ether (MTBE)	1.9	0.39	1.0		µg/L	1	12/9/2022 8:38:31 PM	R93183
1,2,4-Trimethylbenzene	14	0.12	1.0		µg/L	1	12/9/2022 8:38:31 PM	R93183
1,3,5-Trimethylbenzene	12	0.18	1.0		µg/L	1	12/9/2022 8:38:31 PM	R93183
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	12/9/2022 8:38:31 PM	R93183
Acetone	44	2.5	10		µg/L	1	12/9/2022 8:38:31 PM	R93183
Bromomethane	ND	0.85	3.0		µg/L	1	12/9/2022 8:38:31 PM	R93183
2-Butanone	ND	2.0	10		µg/L	1	12/9/2022 8:38:31 PM	R93183
Carbon disulfide	ND	0.59	10		µg/L	1	12/9/2022 8:38:31 PM	R93183
Chlorobenzene	ND	0.16	1.0		µg/L	1	12/9/2022 8:38:31 PM	R93183
Chloroform	ND	0.13	1.0		µg/L	1	12/9/2022 8:38:31 PM	R93183
Chloromethane	ND	0.41	3.0		µg/L	1	12/9/2022 8:38:31 PM	R93183
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	12/9/2022 8:38:31 PM	R93183
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	12/9/2022 8:38:31 PM	R93183
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	12/9/2022 8:38:31 PM	R93183
Isopropylbenzene	3.4	0.18	1.0		µg/L	1	12/9/2022 8:38:31 PM	R93183
4-Isopropyltoluene	2.0	0.20	1.0		µg/L	1	12/9/2022 8:38:31 PM	R93183
Methylene Chloride	2.9	0.50	3.0	J	µg/L	1	12/12/2022 12:11:38 P	R93209
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/9/2022 8:38:31 PM	R93183
n-Propylbenzene	4.0	0.18	1.0		µg/L	1	12/9/2022 8:38:31 PM	R93183
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	12/9/2022 8:38:31 PM	R93183
Styrene	ND	0.14	1.0		µg/L	1	12/9/2022 8:38:31 PM	R93183
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/9/2022 8:38:31 PM	R93183
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	12/9/2022 8:38:31 PM	R93183
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	12/9/2022 8:38:31 PM	R93183
Vinyl chloride	ND	0.32	1.0		µg/L	1	12/9/2022 8:38:31 PM	R93183
Xylenes, Total	35	0.37	1.5		µg/L	1	12/9/2022 8:38:31 PM	R93183
Surr: 1,2-Dichloroethane-d4	111	0	70-130		%Rec	1	12/9/2022 8:38:31 PM	R93183
Surr: 4-Bromofluorobenzene	70.2	0	70-130		%Rec	1	12/9/2022 8:38:31 PM	R93183
Surr: Dibromofluoromethane	94.6	0	70-130		%Rec	1	12/9/2022 8:38:31 PM	R93183
Surr: Toluene-d8	107	0	70-130		%Rec	1	12/9/2022 8:38:31 PM	R93183

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: East LDU
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 10:50:00 AM
Lab ID: 2212303-006B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	12/8/2022 8:28:03 PM	71922

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: East LDU
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 10:50:00 AM
Lab ID: 2212303-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	2.8	0.016	0.064	B	mg/L	1	12/14/2022 4:40:05 PM	71994
Motor Oil Range Organics (MRO)	0.13	0.052	0.080		mg/L	1	12/14/2022 4:40:05 PM	71994
Surr: DNOP	107	0	15.9-177		%Rec	1	12/14/2022 4:40:05 PM	71994
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	12/13/2022 4:51:09 PM	71974
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	12/13/2022 4:51:09 PM	71974
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	12/13/2022 4:51:09 PM	71974
Di-n-octyl phthalate	ND	12	20		µg/L	1	12/13/2022 4:51:09 PM	71974
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	12/13/2022 4:51:09 PM	71974
Diethyl phthalate	ND	6.0	10		µg/L	1	12/13/2022 4:51:09 PM	71974
Dimethyl phthalate	ND	6.0	10		µg/L	1	12/13/2022 4:51:09 PM	71974
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	12/13/2022 4:51:09 PM	71974
2,4-Dinitrophenol	ND	16	20		µg/L	1	12/13/2022 4:51:09 PM	71974
2-Methylphenol	ND	5.0	10		µg/L	1	12/13/2022 4:51:09 PM	71974
3+4-Methylphenol	ND	5.1	10		µg/L	1	12/13/2022 4:51:09 PM	71974
Phenol	ND	18	20		µg/L	1	12/13/2022 4:51:09 PM	71974
Pyridine	ND	14	40		µg/L	1	12/13/2022 4:51:09 PM	71974
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	12/13/2022 4:51:09 PM	71974
Surr: 2-Fluorophenol	42.9	0	15-84.5		%Rec	1	12/13/2022 4:51:09 PM	71974
Surr: Phenol-d5	35.1	0	15-67		%Rec	1	12/13/2022 4:51:09 PM	71974
Surr: 2,4,6-Tribromophenol	70.6	0	15-108		%Rec	1	12/13/2022 4:51:09 PM	71974
Surr: Nitrobenzene-d5	58.2	0	16.8-112		%Rec	1	12/13/2022 4:51:09 PM	71974
Surr: 2-Fluorobiphenyl	51.5	0	15-101		%Rec	1	12/13/2022 4:51:09 PM	71974
Surr: 4-Terphenyl-d14	75.7	0	34.4-134		%Rec	1	12/13/2022 4:51:09 PM	71974
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	0.26	0.11	1.0	J	µg/L	1	12/12/2022 10:00:00 P	71974
Naphthalene	1.3	0.20	0.30		µg/L	1	12/12/2022 10:00:00 P	71974
1-Methylnaphthalene	4.0	0.15	0.30		µg/L	1	12/12/2022 10:00:00 P	71974
2-Methylnaphthalene	3.0	0.14	0.30		µg/L	1	12/12/2022 10:00:00 P	71974
Acenaphthene	1.1	0.14	0.30		µg/L	1	12/12/2022 10:00:00 P	71974
Fluorene	1.2	0.095	0.30		µg/L	1	12/12/2022 10:00:00 P	71974
Phenanthrene	1.7	0.16	0.30		µg/L	1	12/12/2022 10:00:00 P	71974
Anthracene	0.44	0.14	0.30		µg/L	1	12/12/2022 10:00:00 P	71974
Fluoranthene	0.48	0.14	0.30		µg/L	1	12/12/2022 10:00:00 P	71974
Pyrene	ND	0.32	1.0		µg/L	1	12/12/2022 10:00:00 P	71974
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	12/12/2022 10:00:00 P	71974
Chrysene	ND	0.25	0.30		µg/L	1	12/12/2022 10:00:00 P	71974
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	12/12/2022 10:00:00 P	71974
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	12/12/2022 10:00:00 P	71974

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: East LDU
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 10:50:00 AM
Lab ID: 2212303-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	57.2	0	15-108		%Rec	1	12/12/2022 10:00:00 P	71974
Surr: 2-Fluorobiphenyl	47.7	0	15-107		%Rec	1	12/12/2022 10:00:00 P	71974
Surr: 4-Terphenyl-d14	76.0	0	15-166		%Rec	1	12/12/2022 10:00:00 P	71974

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: East LDU
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 10:50:00 AM
Lab ID: 2212303-006D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.080	0.0016	0.0030		mg/L	1	12/12/2022 5:46:22 PM	71965
Beryllium	0.0012	0.00060	0.0020	J	mg/L	1	12/12/2022 5:46:22 PM	71965
Cadmium	ND	0.0018	0.0020		mg/L	1	12/12/2022 5:46:22 PM	71965
Chromium	1.7	0.0098	0.030	*	mg/L	5	12/12/2022 5:47:43 PM	71965
Cobalt	0.10	0.0035	0.0060		mg/L	1	12/12/2022 5:46:22 PM	71965
Nickel	1.4	0.027	0.050	*	mg/L	5	12/12/2022 5:47:43 PM	71965
Silver	ND	0.0018	0.0050		mg/L	1	12/12/2022 5:46:22 PM	71965
Vanadium	0.055	0.0035	0.050		mg/L	1	12/12/2022 5:46:22 PM	71965
Zinc	0.22	0.0039	0.010		mg/L	1	12/12/2022 5:46:22 PM	71965
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	12/19/2022 1:46:01 PM	71965
Arsenic	0.00079	0.00022	0.0010	J	mg/L	1	12/12/2022 3:29:25 PM	71965
Lead	ND	0.00019	0.00050		mg/L	1	12/12/2022 3:29:25 PM	71965
Selenium	0.0011	0.00089	0.0010		mg/L	1	12/12/2022 3:29:25 PM	71965
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00013	0.000091	0.00020	J	mg/L	1	12/16/2022 4:18:48 PM	72127

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: East LDU
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 10:50:00 AM
Lab ID: 2212303-006E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **VP**	
Barium	0.015	0.0011	0.0020		mg/L	1	12/22/2022 4:15:45 PM	B93514
Beryllium	0.0016	0.00059	0.0020	J	mg/L	1	12/22/2022 4:15:45 PM	B93514
Cadmium	ND	0.00098	0.0020		mg/L	1	12/22/2022 4:15:45 PM	B93514
Chromium	1.5	0.0098	0.030	*	mg/L	5	12/22/2022 4:17:30 PM	B93514
Cobalt	0.015	0.0024	0.0060		mg/L	1	12/22/2022 4:15:45 PM	B93514
Nickel	1.4	0.016	0.050	*	mg/L	5	12/22/2022 4:17:30 PM	B93514
Silver	ND	0.0013	0.0050		mg/L	1	12/22/2022 4:15:45 PM	B93514
Vanadium	0.0061	0.0017	0.050	J	mg/L	1	12/22/2022 4:15:45 PM	B93514
Zinc	0.086	0.0032	0.010		mg/L	1	12/22/2022 4:15:45 PM	B93514
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	12/8/2022 6:03:40 PM	A93132
Arsenic	0.00058	0.00012	0.0010	J	mg/L	1	12/8/2022 6:03:40 PM	A93132
Lead	ND	0.000057	0.00050		mg/L	1	12/15/2022 3:43:33 PM	D93335
Selenium	0.00071	0.00034	0.0010	J	mg/L	1	12/8/2022 6:03:40 PM	A93132
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00014	0.000091	0.00020	J	mg/L	1	12/16/2022 2:34:46 PM	72127

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: East LDU
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 10:50:00 AM
Lab ID: 2212303-006F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PAC**	
Cyanide	ND	0.00500	0.00500		mg/L	1	12/14/2022 2:39:00 PM	R93762

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: West LDU
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 11:00:00 AM
Lab ID: 2212303-007A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **CCM**	
Gasoline Range Organics (GRO)	0.31	0.0090	0.050		mg/L	1	12/13/2022 5:28:00 PM	R93213
Surr: BFB	230	0	70-130	S	%Rec	1	12/13/2022 5:28:00 PM	R93213
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	27	0.23	1.0		µg/L	1	12/9/2022 9:07:10 PM	R93183
Toluene	2.4	0.20	1.0		µg/L	1	12/9/2022 9:07:10 PM	R93183
Ethylbenzene	10	0.21	1.0		µg/L	1	12/9/2022 9:07:10 PM	R93183
Methyl tert-butyl ether (MTBE)	9.4	0.39	1.0		µg/L	1	12/9/2022 9:07:10 PM	R93183
1,2,4-Trimethylbenzene	0.85	0.12	1.0	J	µg/L	1	12/9/2022 9:07:10 PM	R93183
1,3,5-Trimethylbenzene	2.7	0.18	1.0		µg/L	1	12/9/2022 9:07:10 PM	R93183
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	12/9/2022 9:07:10 PM	R93183
Acetone	ND	2.5	10		µg/L	1	12/9/2022 9:07:10 PM	R93183
Bromomethane	ND	0.85	3.0		µg/L	1	12/9/2022 9:07:10 PM	R93183
2-Butanone	ND	2.0	10		µg/L	1	12/9/2022 9:07:10 PM	R93183
Carbon disulfide	ND	0.59	10		µg/L	1	12/9/2022 9:07:10 PM	R93183
Chlorobenzene	ND	0.16	1.0		µg/L	1	12/9/2022 9:07:10 PM	R93183
Chloroform	ND	0.13	1.0		µg/L	1	12/9/2022 9:07:10 PM	R93183
Chloromethane	ND	0.41	3.0		µg/L	1	12/9/2022 9:07:10 PM	R93183
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	12/9/2022 9:07:10 PM	R93183
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	12/9/2022 9:07:10 PM	R93183
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	12/9/2022 9:07:10 PM	R93183
Isopropylbenzene	2.2	0.18	1.0		µg/L	1	12/9/2022 9:07:10 PM	R93183
4-Isopropyltoluene	0.64	0.20	1.0	J	µg/L	1	12/9/2022 9:07:10 PM	R93183
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/9/2022 9:07:10 PM	R93183
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/9/2022 9:07:10 PM	R93183
n-Propylbenzene	1.6	0.18	1.0		µg/L	1	12/9/2022 9:07:10 PM	R93183
sec-Butylbenzene	0.70	0.14	1.0	J	µg/L	1	12/9/2022 9:07:10 PM	R93183
Styrene	ND	0.14	1.0		µg/L	1	12/9/2022 9:07:10 PM	R93183
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/9/2022 9:07:10 PM	R93183
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	12/9/2022 9:07:10 PM	R93183
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	12/9/2022 9:07:10 PM	R93183
Vinyl chloride	ND	0.32	1.0		µg/L	1	12/9/2022 9:07:10 PM	R93183
Xylenes, Total	0.88	0.37	1.5	J	µg/L	1	12/9/2022 9:07:10 PM	R93183
Surr: 1,2-Dichloroethane-d4	122	0	70-130		%Rec	1	12/9/2022 9:07:10 PM	R93183
Surr: 4-Bromofluorobenzene	72.7	0	70-130		%Rec	1	12/9/2022 9:07:10 PM	R93183
Surr: Dibromofluoromethane	102	0	70-130		%Rec	1	12/9/2022 9:07:10 PM	R93183
Surr: Toluene-d8	104	0	70-130		%Rec	1	12/9/2022 9:07:10 PM	R93183

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: West LDU
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 11:00:00 AM
Lab ID: 2212303-007B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	12/8/2022 8:57:48 PM	71922

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: West LDU
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 11:00:00 AM
Lab ID: 2212303-007C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	2.9	0.016	0.064	B	mg/L	1	12/14/2022 5:03:49 PM	71994
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/14/2022 5:03:49 PM	71994
Surr: DNOP	101	0	15.9-177		%Rec	1	12/14/2022 5:03:49 PM	71994
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	12/13/2022 5:32:16 PM	71974
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	12/13/2022 5:32:16 PM	71974
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	12/13/2022 5:32:16 PM	71974
Di-n-octyl phthalate	ND	12	20		µg/L	1	12/13/2022 5:32:16 PM	71974
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	12/13/2022 5:32:16 PM	71974
Diethyl phthalate	ND	6.0	10		µg/L	1	12/13/2022 5:32:16 PM	71974
Dimethyl phthalate	ND	6.0	10		µg/L	1	12/13/2022 5:32:16 PM	71974
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	12/13/2022 5:32:16 PM	71974
2,4-Dinitrophenol	ND	16	20		µg/L	1	12/13/2022 5:32:16 PM	71974
2-Methylphenol	ND	5.0	10		µg/L	1	12/13/2022 5:32:16 PM	71974
3+4-Methylphenol	ND	5.1	10		µg/L	1	12/13/2022 5:32:16 PM	71974
Phenol	ND	18	20		µg/L	1	12/13/2022 5:32:16 PM	71974
Pyridine	ND	14	40		µg/L	1	12/13/2022 5:32:16 PM	71974
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	12/13/2022 5:32:16 PM	71974
Surr: 2-Fluorophenol	51.7	0	15-84.5		%Rec	1	12/13/2022 5:32:16 PM	71974
Surr: Phenol-d5	0	0	15-67	S	%Rec	1	12/13/2022 5:32:16 PM	71974
Surr: 2,4,6-Tribromophenol	79.2	0	15-108		%Rec	1	12/13/2022 5:32:16 PM	71974
Surr: Nitrobenzene-d5	64.7	0	16.8-112		%Rec	1	12/13/2022 5:32:16 PM	71974
Surr: 2-Fluorobiphenyl	54.9	0	15-101		%Rec	1	12/13/2022 5:32:16 PM	71974
Surr: 4-Terphenyl-d14	80.6	0	34.4-134		%Rec	1	12/13/2022 5:32:16 PM	71974
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	4.7	0.11	1.0		µg/L	1	12/12/2022 10:43:00 P	71974
Naphthalene	0.84	0.20	0.30		µg/L	1	12/12/2022 10:43:00 P	71974
1-Methylnaphthalene	1.2	0.15	0.30		µg/L	1	12/12/2022 10:43:00 P	71974
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	12/12/2022 10:43:00 P	71974
Acenaphthene	0.40	0.14	0.30		µg/L	1	12/12/2022 10:43:00 P	71974
Fluorene	0.54	0.095	0.30		µg/L	1	12/12/2022 10:43:00 P	71974
Phenanthrene	0.40	0.16	0.30		µg/L	1	12/12/2022 10:43:00 P	71974
Anthracene	ND	0.14	0.30		µg/L	1	12/12/2022 10:43:00 P	71974
Fluoranthene	0.14	0.14	0.30	J	µg/L	1	12/12/2022 10:43:00 P	71974
Pyrene	ND	0.32	1.0		µg/L	1	12/12/2022 10:43:00 P	71974
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	12/12/2022 10:43:00 P	71974
Chrysene	ND	0.25	0.30		µg/L	1	12/12/2022 10:43:00 P	71974
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	12/12/2022 10:43:00 P	71974
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	12/12/2022 10:43:00 P	71974

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: West LDU
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 11:00:00 AM
Lab ID: 2212303-007C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	61.1	0	15-108		%Rec	1	12/12/2022 10:43:00 P	71974
Surr: 2-Fluorobiphenyl	47.9	0	15-107		%Rec	1	12/12/2022 10:43:00 P	71974
Surr: 4-Terphenyl-d14	74.0	0	15-166		%Rec	1	12/12/2022 10:43:00 P	71974

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: West LDU
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 11:00:00 AM
Lab ID: 2212303-007D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.098	0.0016	0.0030		mg/L	1	12/12/2022 5:56:49 PM	71965
Beryllium	ND	0.00060	0.0020		mg/L	1	12/12/2022 5:56:49 PM	71965
Cadmium	ND	0.0018	0.0020		mg/L	1	12/12/2022 5:56:49 PM	71965
Chromium	0.33	0.0020	0.0060	*	mg/L	1	12/12/2022 5:56:49 PM	71965
Cobalt	0.12	0.0035	0.0060		mg/L	1	12/12/2022 5:56:49 PM	71965
Nickel	1.0	0.027	0.050	*	mg/L	5	12/12/2022 5:58:12 PM	71965
Silver	ND	0.0018	0.0050		mg/L	1	12/12/2022 5:56:49 PM	71965
Vanadium	0.077	0.0035	0.050		mg/L	1	12/12/2022 5:56:49 PM	71965
Zinc	0.026	0.0039	0.010		mg/L	1	12/12/2022 5:56:49 PM	71965
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	12/19/2022 1:48:27 PM	71965
Arsenic	0.00059	0.00022	0.0010	J	mg/L	1	12/12/2022 3:31:51 PM	71965
Lead	ND	0.00019	0.00050		mg/L	1	12/12/2022 3:31:51 PM	71965
Selenium	ND	0.00089	0.0010		mg/L	1	12/12/2022 3:31:51 PM	71965
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00014	0.000091	0.00020	J	mg/L	1	12/16/2022 2:36:55 PM	72127

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: West LDU
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 11:00:00 AM
Lab ID: 2212303-007E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **VP**	
Barium	0.039	0.0011	0.0020		mg/L	1	12/22/2022 4:21:15 PM	B93514
Beryllium	0.0010	0.00059	0.0020	J	mg/L	1	12/22/2022 4:21:15 PM	B93514
Cadmium	ND	0.00098	0.0020		mg/L	1	12/22/2022 4:21:15 PM	B93514
Chromium	0.12	0.0020	0.0060	*	mg/L	1	12/22/2022 4:21:15 PM	B93514
Cobalt	ND	0.0024	0.0060		mg/L	1	12/22/2022 4:21:15 PM	B93514
Nickel	0.98	0.0033	0.010	*	mg/L	1	12/22/2022 4:21:15 PM	B93514
Silver	ND	0.0013	0.0050		mg/L	1	12/22/2022 4:21:15 PM	B93514
Vanadium	0.0051	0.0017	0.050	J	mg/L	1	12/22/2022 4:21:15 PM	B93514
Zinc	0.13	0.0032	0.010		mg/L	1	12/22/2022 4:21:15 PM	B93514
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	12/8/2022 6:19:03 PM	A93132
Arsenic	0.00062	0.00012	0.0010	J	mg/L	1	12/8/2022 6:19:03 PM	A93132
Lead	ND	0.000057	0.00050		mg/L	1	12/15/2022 3:47:25 PM	D93335
Selenium	0.00048	0.00034	0.0010	J	mg/L	1	12/8/2022 6:19:03 PM	A93132
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/16/2022 4:25:15 PM	72127

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: West LDU
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 11:00:00 AM
Lab ID: 2212303-007F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PAC**	
Cyanide	ND	0.00500	0.00500		mg/L	1	12/14/2022 2:40:00 PM	R93762

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB-12-6-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 11:00:00 AM
Lab ID: 2212303-008A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	12/9/2022 9:35:47 PM	R93183
Toluene	ND	0.20	1.0		µg/L	1	12/9/2022 9:35:47 PM	R93183
Ethylbenzene	ND	0.21	1.0		µg/L	1	12/9/2022 9:35:47 PM	R93183
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	12/9/2022 9:35:47 PM	R93183
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	12/9/2022 9:35:47 PM	R93183
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	12/9/2022 9:35:47 PM	R93183
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	12/9/2022 9:35:47 PM	R93183
Acetone	ND	2.5	10		µg/L	1	12/9/2022 9:35:47 PM	R93183
Bromomethane	ND	0.85	3.0		µg/L	1	12/9/2022 9:35:47 PM	R93183
2-Butanone	ND	2.0	10		µg/L	1	12/9/2022 9:35:47 PM	R93183
Carbon disulfide	ND	0.59	10		µg/L	1	12/9/2022 9:35:47 PM	R93183
Chlorobenzene	ND	0.16	1.0		µg/L	1	12/9/2022 9:35:47 PM	R93183
Chloroform	ND	0.13	1.0		µg/L	1	12/9/2022 9:35:47 PM	R93183
Chloromethane	ND	0.41	3.0		µg/L	1	12/9/2022 9:35:47 PM	R93183
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	12/9/2022 9:35:47 PM	R93183
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	12/9/2022 9:35:47 PM	R93183
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	12/9/2022 9:35:47 PM	R93183
Isopropylbenzene	ND	0.18	1.0		µg/L	1	12/9/2022 9:35:47 PM	R93183
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	12/9/2022 9:35:47 PM	R93183
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/9/2022 9:35:47 PM	R93183
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/9/2022 9:35:47 PM	R93183
n-Propylbenzene	ND	0.18	1.0		µg/L	1	12/9/2022 9:35:47 PM	R93183
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	12/9/2022 9:35:47 PM	R93183
Styrene	ND	0.14	1.0		µg/L	1	12/9/2022 9:35:47 PM	R93183
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/9/2022 9:35:47 PM	R93183
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	12/9/2022 9:35:47 PM	R93183
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	12/9/2022 9:35:47 PM	R93183
Vinyl chloride	ND	0.32	1.0		µg/L	1	12/9/2022 9:35:47 PM	R93183
Xylenes, Total	ND	0.37	1.5		µg/L	1	12/9/2022 9:35:47 PM	R93183
Surr: 1,2-Dichloroethane-d4	117	0	70-130		%Rec	1	12/9/2022 9:35:47 PM	R93183
Surr: 4-Bromofluorobenzene	92.1	0	70-130		%Rec	1	12/9/2022 9:35:47 PM	R93183
Surr: Dibromofluoromethane	113	0	70-130		%Rec	1	12/9/2022 9:35:47 PM	R93183
Surr: Toluene-d8	101	0	70-130		%Rec	1	12/9/2022 9:35:47 PM	R93183

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-12-6-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022
Lab ID: 2212303-009A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **CCM**	
Gasoline Range Organics (GRO)	0.030	0.0090	0.050	J	mg/L	1	12/13/2022 5:47:00 PM	R93213
Surr: BFB	104	0	70-130		%Rec	1	12/13/2022 5:47:00 PM	R93213
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	12/9/2022 10:04:24 PM	R93183
Toluene	ND	0.20	1.0		µg/L	1	12/9/2022 10:04:24 PM	R93183
Ethylbenzene	ND	0.21	1.0		µg/L	1	12/9/2022 10:04:24 PM	R93183
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	12/9/2022 10:04:24 PM	R93183
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	12/9/2022 10:04:24 PM	R93183
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	12/9/2022 10:04:24 PM	R93183
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	12/9/2022 10:04:24 PM	R93183
Acetone	ND	2.5	10		µg/L	1	12/9/2022 10:04:24 PM	R93183
Bromomethane	ND	0.85	3.0		µg/L	1	12/9/2022 10:04:24 PM	R93183
2-Butanone	ND	2.0	10		µg/L	1	12/9/2022 10:04:24 PM	R93183
Carbon disulfide	ND	0.59	10		µg/L	1	12/9/2022 10:04:24 PM	R93183
Chlorobenzene	0.67	0.16	1.0	J	µg/L	1	12/9/2022 10:04:24 PM	R93183
Chloroform	ND	0.13	1.0		µg/L	1	12/9/2022 10:04:24 PM	R93183
Chloromethane	ND	0.41	3.0		µg/L	1	12/9/2022 10:04:24 PM	R93183
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	12/9/2022 10:04:24 PM	R93183
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	12/9/2022 10:04:24 PM	R93183
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	12/9/2022 10:04:24 PM	R93183
Isopropylbenzene	ND	0.18	1.0		µg/L	1	12/9/2022 10:04:24 PM	R93183
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	12/9/2022 10:04:24 PM	R93183
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/9/2022 10:04:24 PM	R93183
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/9/2022 10:04:24 PM	R93183
n-Propylbenzene	ND	0.18	1.0		µg/L	1	12/9/2022 10:04:24 PM	R93183
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	12/9/2022 10:04:24 PM	R93183
Styrene	ND	0.14	1.0		µg/L	1	12/9/2022 10:04:24 PM	R93183
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/9/2022 10:04:24 PM	R93183
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	12/9/2022 10:04:24 PM	R93183
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	12/9/2022 10:04:24 PM	R93183
Vinyl chloride	ND	0.32	1.0		µg/L	1	12/9/2022 10:04:24 PM	R93183
Xylenes, Total	ND	0.37	1.5		µg/L	1	12/9/2022 10:04:24 PM	R93183
Surr: 1,2-Dichloroethane-d4	107	0	70-130		%Rec	1	12/9/2022 10:04:24 PM	R93183
Surr: 4-Bromofluorobenzene	95.3	0	70-130		%Rec	1	12/9/2022 10:04:24 PM	R93183
Surr: Dibromofluoromethane	113	0	70-130		%Rec	1	12/9/2022 10:04:24 PM	R93183
Surr: Toluene-d8	103	0	70-130		%Rec	1	12/9/2022 10:04:24 PM	R93183

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-12-6-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022
Lab ID: 2212303-009B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0093		µg/L	1	12/8/2022 9:27:28 PM	71922

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-12-6-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022
Lab ID: 2212303-009C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.077	0.016	0.064	B	mg/L	1	12/14/2022 5:27:27 PM	71994
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/14/2022 5:27:27 PM	71994
Surr: DNOP	99.0	0	15.9-177		%Rec	1	12/14/2022 5:27:27 PM	71994
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	12/13/2022 6:13:00 PM	71974
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	12/13/2022 6:13:00 PM	71974
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	12/13/2022 6:13:00 PM	71974
Di-n-octyl phthalate	ND	12	20		µg/L	1	12/13/2022 6:13:00 PM	71974
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	12/13/2022 6:13:00 PM	71974
Diethyl phthalate	ND	6.0	10		µg/L	1	12/13/2022 6:13:00 PM	71974
Dimethyl phthalate	ND	6.0	10		µg/L	1	12/13/2022 6:13:00 PM	71974
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	12/13/2022 6:13:00 PM	71974
2,4-Dinitrophenol	ND	16	20		µg/L	1	12/13/2022 6:13:00 PM	71974
2-Methylphenol	ND	5.0	10		µg/L	1	12/13/2022 6:13:00 PM	71974
3+4-Methylphenol	ND	5.1	10		µg/L	1	12/13/2022 6:13:00 PM	71974
Phenol	ND	18	20		µg/L	1	12/13/2022 6:13:00 PM	71974
Pyridine	ND	14	40		µg/L	1	12/13/2022 6:13:00 PM	71974
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	12/13/2022 6:13:00 PM	71974
Surr: 2-Fluorophenol	33.0	0	15-84.5		%Rec	1	12/13/2022 6:13:00 PM	71974
Surr: Phenol-d5	25.8	0	15-67		%Rec	1	12/13/2022 6:13:00 PM	71974
Surr: 2,4,6-Tribromophenol	34.4	0	15-108		%Rec	1	12/13/2022 6:13:00 PM	71974
Surr: Nitrobenzene-d5	48.8	0	16.8-112		%Rec	1	12/13/2022 6:13:00 PM	71974
Surr: 2-Fluorobiphenyl	41.4	0	15-101		%Rec	1	12/13/2022 6:13:00 PM	71974
Surr: 4-Terphenyl-d14	81.1	0	34.4-134		%Rec	1	12/13/2022 6:13:00 PM	71974
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	1.1	0.11	1.0		µg/L	1	12/12/2022 11:26:00 P	71974
Naphthalene	ND	0.20	0.30		µg/L	1	12/12/2022 11:26:00 P	71974
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	12/12/2022 11:26:00 P	71974
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	12/12/2022 11:26:00 P	71974
Acenaphthene	ND	0.14	0.30		µg/L	1	12/12/2022 11:26:00 P	71974
Fluorene	ND	0.095	0.30		µg/L	1	12/12/2022 11:26:00 P	71974
Phenanthrene	ND	0.16	0.30		µg/L	1	12/12/2022 11:26:00 P	71974
Anthracene	ND	0.14	0.30		µg/L	1	12/12/2022 11:26:00 P	71974
Fluoranthene	ND	0.14	0.30		µg/L	1	12/12/2022 11:26:00 P	71974
Pyrene	ND	0.32	1.0		µg/L	1	12/12/2022 11:26:00 P	71974
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	12/12/2022 11:26:00 P	71974
Chrysene	ND	0.25	0.30		µg/L	1	12/12/2022 11:26:00 P	71974
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	12/12/2022 11:26:00 P	71974
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	12/12/2022 11:26:00 P	71974

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-12-6-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022
Lab ID: 2212303-009C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	43.4	0	15-108		%Rec	1	12/12/2022 11:26:00 P	71974
Surr: 2-Fluorobiphenyl	37.3	0	15-107		%Rec	1	12/12/2022 11:26:00 P	71974
Surr: 4-Terphenyl-d14	83.8	0	15-166		%Rec	1	12/12/2022 11:26:00 P	71974

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-12-6-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022
Lab ID: 2212303-009D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.087	0.0016	0.0030		mg/L	1	12/12/2022 6:00:52 PM	71965
Beryllium	ND	0.00060	0.0020		mg/L	1	12/12/2022 6:00:52 PM	71965
Cadmium	ND	0.0018	0.0020		mg/L	1	12/12/2022 6:00:52 PM	71965
Chromium	ND	0.0020	0.0060		mg/L	1	12/12/2022 6:00:52 PM	71965
Cobalt	0.016	0.0035	0.0060		mg/L	1	12/12/2022 6:00:52 PM	71965
Nickel	ND	0.0053	0.010		mg/L	1	12/12/2022 6:00:52 PM	71965
Silver	0.0022	0.0018	0.0050	J	mg/L	1	12/12/2022 6:00:52 PM	71965
Vanadium	0.0044	0.0035	0.050	J	mg/L	1	12/12/2022 6:00:52 PM	71965
Zinc	ND	0.0039	0.010		mg/L	1	12/12/2022 6:00:52 PM	71965
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	12/19/2022 1:50:52 PM	71965
Arsenic	0.0010	0.00022	0.0010		mg/L	1	12/12/2022 3:34:18 PM	71965
Lead	0.0011	0.00019	0.00050		mg/L	1	12/12/2022 3:34:18 PM	71965
Selenium	ND	0.00089	0.0010		mg/L	1	12/12/2022 3:34:18 PM	71965
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00014	0.000091	0.00020	J	mg/L	1	12/16/2022 4:27:23 PM	72127

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-12-6-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022
Lab ID: 2212303-009E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **VP**	
Barium	0.041	0.0011	0.0020		mg/L	1	12/22/2022 4:24:56 PM	B93514
Beryllium	ND	0.00059	0.0020		mg/L	1	12/22/2022 4:24:56 PM	B93514
Cadmium	ND	0.00098	0.0020		mg/L	1	12/22/2022 4:24:56 PM	B93514
Chromium	ND	0.0020	0.0060		mg/L	1	12/22/2022 4:24:56 PM	B93514
Cobalt	ND	0.0024	0.0060		mg/L	1	12/22/2022 4:24:56 PM	B93514
Nickel	ND	0.0033	0.010		mg/L	1	12/22/2022 4:24:56 PM	B93514
Silver	0.0030	0.0013	0.0050	J	mg/L	1	12/22/2022 4:24:56 PM	B93514
Vanadium	0.0034	0.0017	0.050	J	mg/L	1	12/22/2022 4:24:56 PM	B93514
Zinc	0.0044	0.0032	0.010	J	mg/L	1	12/22/2022 4:24:56 PM	B93514
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	12/8/2022 6:24:10 PM	A93132
Arsenic	0.00071	0.00012	0.0010	J	mg/L	1	12/8/2022 6:24:10 PM	A93132
Lead	ND	0.00028	0.0025		mg/L	5	12/15/2022 3:59:05 PM	D93335
Selenium	0.00060	0.00034	0.0010	J	mg/L	1	12/8/2022 6:24:10 PM	A93132
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/16/2022 4:29:31 PM	72127

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-12-6-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022
Lab ID: 2212303-009F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PAC**	
Cyanide	ND	0.00500	0.00500		mg/L	1	12/14/2022 2:41:00 PM	R93762

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 10:00:00 AM
Lab ID: 2212303-010A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **CCM**	
Gasoline Range Organics (GRO)	0.29	0.0090	0.050		mg/L	1	12/13/2022 6:07:00 PM	R93213
Surr: BFB	149	0	70-130	S	%Rec	1	12/13/2022 6:07:00 PM	R93213
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	16	0.23	1.0		µg/L	1	12/12/2022 12:40:22 P	R93209
Toluene	ND	0.20	1.0		µg/L	1	12/12/2022 12:40:22 P	R93209
Ethylbenzene	3.8	0.21	1.0		µg/L	1	12/12/2022 12:40:22 P	R93209
Methyl tert-butyl ether (MTBE)	0.91	0.39	1.0	J	µg/L	1	12/12/2022 12:40:22 P	R93209
1,2,4-Trimethylbenzene	22	0.12	1.0		µg/L	1	12/12/2022 12:40:22 P	R93209
1,3,5-Trimethylbenzene	7.7	0.18	1.0		µg/L	1	12/12/2022 12:40:22 P	R93209
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	12/12/2022 12:40:22 P	R93209
Acetone	16	2.5	10		µg/L	1	12/12/2022 12:40:22 P	R93209
Bromomethane	ND	0.85	3.0		µg/L	1	12/12/2022 12:40:22 P	R93209
2-Butanone	3.7	2.0	10	J	µg/L	1	12/12/2022 12:40:22 P	R93209
Carbon disulfide	ND	0.59	10		µg/L	1	12/12/2022 12:40:22 P	R93209
Chlorobenzene	ND	0.16	1.0		µg/L	1	12/12/2022 12:40:22 P	R93209
Chloroform	ND	0.13	1.0		µg/L	1	12/12/2022 12:40:22 P	R93209
Chloromethane	ND	0.41	3.0		µg/L	1	12/12/2022 12:40:22 P	R93209
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	12/12/2022 12:40:22 P	R93209
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	12/12/2022 12:40:22 P	R93209
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	12/12/2022 12:40:22 P	R93209
Isopropylbenzene	3.7	0.18	1.0		µg/L	1	12/12/2022 12:40:22 P	R93209
4-Isopropyltoluene	1.3	0.20	1.0		µg/L	1	12/12/2022 12:40:22 P	R93209
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/12/2022 12:40:22 P	R93209
n-Butylbenzene	0.85	0.25	3.0	J	µg/L	1	12/12/2022 12:40:22 P	R93209
n-Propylbenzene	3.8	0.18	1.0		µg/L	1	12/12/2022 12:40:22 P	R93209
sec-Butylbenzene	0.98	0.14	1.0	J	µg/L	1	12/12/2022 12:40:22 P	R93209
Styrene	ND	0.14	1.0		µg/L	1	12/12/2022 12:40:22 P	R93209
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/12/2022 12:40:22 P	R93209
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	12/12/2022 12:40:22 P	R93209
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	12/12/2022 12:40:22 P	R93209
Vinyl chloride	ND	0.32	1.0		µg/L	1	12/12/2022 12:40:22 P	R93209
Xylenes, Total	5.3	0.37	1.5		µg/L	1	12/12/2022 12:40:22 P	R93209
Surr: 1,2-Dichloroethane-d4	108	0	70-130		%Rec	1	12/12/2022 12:40:22 P	R93209
Surr: 4-Bromofluorobenzene	79.2	0	70-130		%Rec	1	12/12/2022 12:40:22 P	R93209
Surr: Dibromofluoromethane	97.1	0	70-130		%Rec	1	12/12/2022 12:40:22 P	R93209
Surr: Toluene-d8	106	0	70-130		%Rec	1	12/12/2022 12:40:22 P	R93209

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 10:00:00 AM
Lab ID: 2212303-010B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	12/8/2022 9:57:11 PM	71922

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 10:00:00 AM
Lab ID: 2212303-010C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.43	0.016	0.064	B	mg/L	1	12/14/2022 5:50:58 PM	71994
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/14/2022 5:50:58 PM	71994
Surr: DNOP	106	0	15.9-177		%Rec	1	12/14/2022 5:50:58 PM	71994
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	12/13/2022 6:54:19 PM	71974
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	12/13/2022 6:54:19 PM	71974
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	12/13/2022 6:54:19 PM	71974
Di-n-octyl phthalate	ND	12	20		µg/L	1	12/13/2022 6:54:19 PM	71974
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	12/13/2022 6:54:19 PM	71974
Diethyl phthalate	ND	6.0	10		µg/L	1	12/13/2022 6:54:19 PM	71974
Dimethyl phthalate	ND	6.0	10		µg/L	1	12/13/2022 6:54:19 PM	71974
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	12/13/2022 6:54:19 PM	71974
2,4-Dinitrophenol	ND	16	20		µg/L	1	12/13/2022 6:54:19 PM	71974
2-Methylphenol	ND	5.0	10		µg/L	1	12/13/2022 6:54:19 PM	71974
3+4-Methylphenol	ND	5.1	10		µg/L	1	12/13/2022 6:54:19 PM	71974
Phenol	ND	18	20		µg/L	1	12/13/2022 6:54:19 PM	71974
Pyridine	ND	14	40		µg/L	1	12/13/2022 6:54:19 PM	71974
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	12/13/2022 6:54:19 PM	71974
Surr: 2-Fluorophenol	41.4	0	15-84.5		%Rec	1	12/13/2022 6:54:19 PM	71974
Surr: Phenol-d5	32.5	0	15-67		%Rec	1	12/13/2022 6:54:19 PM	71974
Surr: 2,4,6-Tribromophenol	46.3	0	15-108		%Rec	1	12/13/2022 6:54:19 PM	71974
Surr: Nitrobenzene-d5	63.0	0	16.8-112		%Rec	1	12/13/2022 6:54:19 PM	71974
Surr: 2-Fluorobiphenyl	56.5	0	15-101		%Rec	1	12/13/2022 6:54:19 PM	71974
Surr: 4-Terphenyl-d14	82.6	0	34.4-134		%Rec	1	12/13/2022 6:54:19 PM	71974
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	1.6	0.11	1.0		µg/L	1	12/13/2022 12:09:00 A	71974
Naphthalene	7.6	0.20	0.30		µg/L	1	12/13/2022 12:09:00 A	71974
1-Methylnaphthalene	8.1	0.15	0.30		µg/L	1	12/13/2022 12:09:00 A	71974
2-Methylnaphthalene	7.3	0.14	0.30		µg/L	1	12/13/2022 12:09:00 A	71974
Acenaphthene	0.24	0.14	0.30	J	µg/L	1	12/13/2022 12:09:00 A	71974
Fluorene	0.50	0.095	0.30		µg/L	1	12/13/2022 12:09:00 A	71974
Phenanthrene	ND	0.16	0.30		µg/L	1	12/13/2022 12:09:00 A	71974
Anthracene	ND	0.14	0.30		µg/L	1	12/13/2022 12:09:00 A	71974
Fluoranthene	ND	0.14	0.30		µg/L	1	12/13/2022 12:09:00 A	71974
Pyrene	ND	0.32	1.0		µg/L	1	12/13/2022 12:09:00 A	71974
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	12/13/2022 12:09:00 A	71974
Chrysene	ND	0.25	0.30		µg/L	1	12/13/2022 12:09:00 A	71974
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	12/13/2022 12:09:00 A	71974
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	12/13/2022 12:09:00 A	71974

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 10:00:00 AM
Lab ID: 2212303-010C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	60.3	0	15-108		%Rec	1	12/13/2022 12:09:00 A	71974
Surr: 2-Fluorobiphenyl	51.2	0	15-107		%Rec	1	12/13/2022 12:09:00 A	71974
Surr: 4-Terphenyl-d14	86.9	0	15-166		%Rec	1	12/13/2022 12:09:00 A	71974

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 10:00:00 AM
Lab ID: 2212303-010D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.095	0.0016	0.0030		mg/L	1	12/12/2022 6:05:39 PM	71965
Beryllium	ND	0.00060	0.0020		mg/L	1	12/12/2022 6:05:39 PM	71965
Cadmium	ND	0.0018	0.0020		mg/L	1	12/12/2022 6:05:39 PM	71965
Chromium	ND	0.0020	0.0060		mg/L	1	12/12/2022 6:05:39 PM	71965
Cobalt	0.011	0.0035	0.0060		mg/L	1	12/12/2022 6:05:39 PM	71965
Nickel	ND	0.0053	0.010		mg/L	1	12/12/2022 6:05:39 PM	71965
Silver	0.0021	0.0018	0.0050	J	mg/L	1	12/12/2022 6:05:39 PM	71965
Vanadium	ND	0.0035	0.050		mg/L	1	12/12/2022 6:05:39 PM	71965
Zinc	ND	0.0039	0.010		mg/L	1	12/12/2022 6:05:39 PM	71965
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	12/19/2022 1:58:12 PM	71965
Arsenic	0.011	0.00022	0.0010	*	mg/L	1	12/12/2022 3:36:44 PM	71965
Lead	0.00098	0.00019	0.00050		mg/L	1	12/12/2022 3:36:44 PM	71965
Selenium	0.0016	0.00089	0.0010		mg/L	1	12/12/2022 3:36:44 PM	71965
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00012	0.000091	0.00020	J	mg/L	1	12/16/2022 2:51:54 PM	72127

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 10:00:00 AM
Lab ID: 2212303-010E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **VP**	
Barium	0.084	0.0011	0.0020		mg/L	1	12/22/2022 4:40:07 PM	B93514
Beryllium	0.0019	0.00059	0.0020	J	mg/L	1	12/22/2022 4:40:07 PM	B93514
Cadmium	0.0011	0.00098	0.0020	J	mg/L	1	12/22/2022 4:40:07 PM	B93514
Chromium	ND	0.0020	0.0060		mg/L	1	12/22/2022 4:40:07 PM	B93514
Cobalt	ND	0.0024	0.0060		mg/L	1	12/22/2022 4:40:07 PM	B93514
Nickel	ND	0.0033	0.010		mg/L	1	12/22/2022 4:40:07 PM	B93514
Silver	0.0035	0.0013	0.0050	J	mg/L	1	12/22/2022 4:40:07 PM	B93514
Vanadium	0.0038	0.0017	0.050	J	mg/L	1	12/22/2022 4:40:07 PM	B93514
Zinc	0.016	0.0032	0.010		mg/L	1	12/22/2022 4:40:07 PM	B93514
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	0.00085	0.00044	0.0010	J	mg/L	1	12/8/2022 6:29:17 PM	A93132
Arsenic	0.010	0.00061	0.0050	*	mg/L	5	12/15/2022 4:18:35 PM	D93335
Lead	ND	0.00028	0.0025		mg/L	5	12/15/2022 4:18:35 PM	D93335
Selenium	ND	0.0017	0.0050		mg/L	5	12/15/2022 4:18:35 PM	D93335
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00010	0.000091	0.00020	J	mg/L	1	12/16/2022 2:54:03 PM	72127

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/6/2022 10:00:00 AM
Lab ID: 2212303-010F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PAC**	
Cyanide	ND	0.00500	0.00500		mg/L	1	12/14/2022 2:42:00 PM	R93762

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 4th Quarter
Collection Date:
Lab ID: 2212303-011A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	12/12/2022 2:06:30 PM	R93209
Toluene	ND	0.20	1.0		µg/L	1	12/12/2022 2:06:30 PM	R93209
Ethylbenzene	ND	0.21	1.0		µg/L	1	12/12/2022 2:06:30 PM	R93209
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	12/12/2022 2:06:30 PM	R93209
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	12/12/2022 2:06:30 PM	R93209
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	12/12/2022 2:06:30 PM	R93209
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	12/12/2022 2:06:30 PM	R93209
Acetone	ND	2.5	10		µg/L	1	12/12/2022 2:06:30 PM	R93209
Bromomethane	ND	0.85	3.0		µg/L	1	12/12/2022 2:06:30 PM	R93209
2-Butanone	ND	2.0	10		µg/L	1	12/12/2022 2:06:30 PM	R93209
Carbon disulfide	ND	0.59	10		µg/L	1	12/12/2022 2:06:30 PM	R93209
Chlorobenzene	ND	0.16	1.0		µg/L	1	12/12/2022 2:06:30 PM	R93209
Chloroform	ND	0.13	1.0		µg/L	1	12/12/2022 2:06:30 PM	R93209
Chloromethane	ND	0.41	3.0		µg/L	1	12/12/2022 2:06:30 PM	R93209
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	12/12/2022 2:06:30 PM	R93209
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	12/12/2022 2:06:30 PM	R93209
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	12/12/2022 2:06:30 PM	R93209
Isopropylbenzene	ND	0.18	1.0		µg/L	1	12/12/2022 2:06:30 PM	R93209
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	12/12/2022 2:06:30 PM	R93209
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/12/2022 2:06:30 PM	R93209
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/12/2022 2:06:30 PM	R93209
n-Propylbenzene	ND	0.18	1.0		µg/L	1	12/12/2022 2:06:30 PM	R93209
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	12/12/2022 2:06:30 PM	R93209
Styrene	ND	0.14	1.0		µg/L	1	12/12/2022 2:06:30 PM	R93209
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/12/2022 2:06:30 PM	R93209
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	12/12/2022 2:06:30 PM	R93209
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	12/12/2022 2:06:30 PM	R93209
Vinyl chloride	ND	0.32	1.0		µg/L	1	12/12/2022 2:06:30 PM	R93209
Xylenes, Total	ND	0.37	1.5		µg/L	1	12/12/2022 2:06:30 PM	R93209
Surr: 1,2-Dichloroethane-d4	116	0	70-130		%Rec	1	12/12/2022 2:06:30 PM	R93209
Surr: 4-Bromofluorobenzene	98.0	0	70-130		%Rec	1	12/12/2022 2:06:30 PM	R93209
Surr: Dibromofluoromethane	113	0	70-130		%Rec	1	12/12/2022 2:06:30 PM	R93209
Surr: Toluene-d8	104	0	70-130		%Rec	1	12/12/2022 2:06:30 PM	R93209

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212303**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 4th Quarter
Collection Date:
Lab ID: 2212303-011B
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	12/8/2022 10:26:49 PM	71922

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

ANALYTICAL REPORT

December 14, 2022

Hall Environmental Analysis Laboratory

Sample Delivery Group: L1565219

Samples Received: 12/08/2022

Project Number:

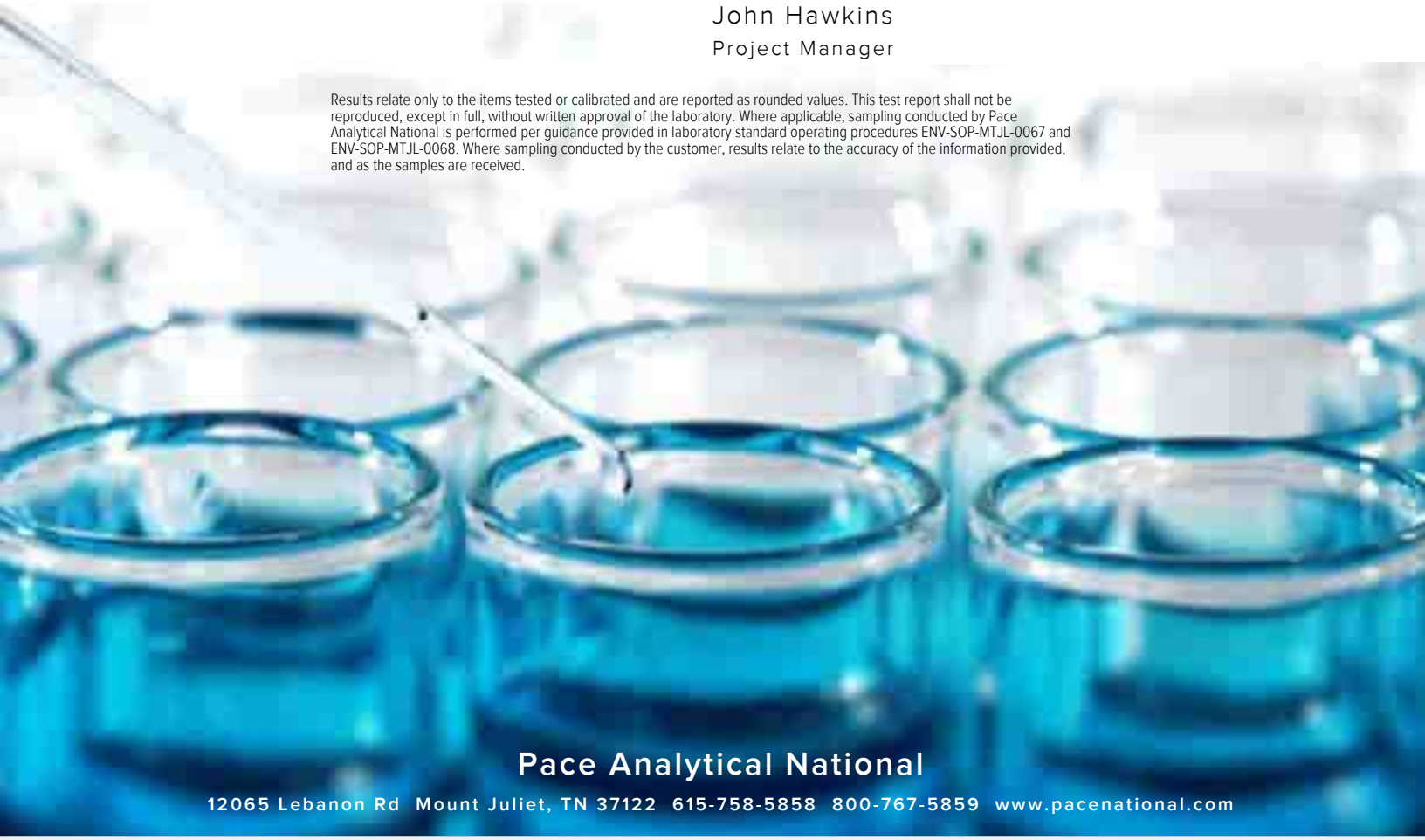
Description:

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By:

John Hawkins
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 4

Sr: Sample Results 5

2212303-001F EB-12-6-22 L1565219-01 5

2212303-002F MKTF-46 L1565219-02 6

2212303-003F MKTF-18R L1565219-03 7

2212303-005F PW-3 L1565219-04 8

2212303-006F EAST LDU L1565219-05 9

2212303-007F WEST LDU L1565219-06 10

2212303-009F DUP-12-6-22 L1565219-07 11

2212303-010F MKTF-38 L1565219-08 12

Qc: Quality Control Summary 13

Wet Chemistry by Method 4500CN E-2016 13

Gl: Glossary of Terms 14

Al: Accreditations & Locations 15

Sc: Sample Chain of Custody 16

SAMPLE SUMMARY

2212303-001F EB-12-6-22 L1565219-01 GW

Collected by	Collected date/time	Received date/time
	12/06/22 09:10	12/08/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1971426	1	12/13/22 02:21	12/14/22 14:34	LDT	Mt. Juliet, TN

2212303-002F MKTF-46 L1565219-02 GW

Collected by	Collected date/time	Received date/time
	12/06/22 09:20	12/08/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1971426	1	12/13/22 02:21	12/14/22 14:36	LDT	Mt. Juliet, TN

2212303-003F MKTF-18R L1565219-03 GW

Collected by	Collected date/time	Received date/time
	12/06/22 09:50	12/08/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1971426	1	12/13/22 02:21	12/14/22 14:37	LDT	Mt. Juliet, TN

2212303-005F PW-3 L1565219-04 GW

Collected by	Collected date/time	Received date/time
	12/06/22 10:35	12/08/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1971426	1	12/13/22 02:21	12/14/22 14:38	LDT	Mt. Juliet, TN

2212303-006F EAST LDU L1565219-05 GW

Collected by	Collected date/time	Received date/time
	12/06/22 10:50	12/08/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1971426	1	12/13/22 02:21	12/14/22 14:39	LDT	Mt. Juliet, TN

2212303-007F WEST LDU L1565219-06 GW

Collected by	Collected date/time	Received date/time
	12/06/22 11:00	12/08/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1971426	1	12/13/22 02:21	12/14/22 14:40	LDT	Mt. Juliet, TN

2212303-009F DUP-12-6-22 L1565219-07 GW

Collected by	Collected date/time	Received date/time
	12/06/22 00:00	12/08/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1971426	1	12/13/22 02:21	12/14/22 14:41	LDT	Mt. Juliet, TN

2212303-010F MKTF-38 L1565219-08 GW

Collected by	Collected date/time	Received date/time
	12/06/22 10:00	12/08/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1971426	1	12/13/22 02:21	12/14/22 14:42	LDT	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND	J4	0.00500	1	12/14/2022 14:34	WG1971426

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND	J4	0.00500	1	12/14/2022 14:36	WG1971426

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND	J4	0.00500	1	12/14/2022 14:37	WG1971426

221203-0051 FW-3
Collected date/time: 12/06/22 10:35
L1565219

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND	J4	0.00500	1	12/14/2022 14:38	WG1971426

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND	J4	0.00500	1	12/14/2022 14:39	WG1971426

Received by OCD: 4/21/2023 9:21:57 AM

SAMPLE RESULTS - 06

221203-0071 WEST LEG

Collected date/time: 12/06/22 11:00

L1565219

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND	J4	0.00500	1	12/14/2022 14:40	WG1971426

Released to Imaging: 4/21/2023 9:40:26 AM

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND	J4	0.00500	1	12/14/2022 14:41	WG1971426

Received by OCD: 4/21/2023 9:21:57 AM

221203-0101 MRTT-38
Collected date/time: 12/06/22 10:00
L1565219

Wet Chemistry by Method 4500CN E-2016

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Cyanide	ND	J4	0.00500	1	12/14/2022 14:42	WG1971426

Released to Imaging: 4/21/2023 9:40:26 AM

Method Blank (MB)

(MB) R3871820-19 12/14/22 14:21

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1564687-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1564687-02 12/14/22 14:25 • (DUP) R3871820-26 12/14/22 14:26

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

L1565219-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1565219-01 12/14/22 14:34 • (DUP) R3871820-30 12/14/22 14:35

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

L1564687-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1564687-03 12/14/22 14:27 • (MS) R3871820-27 12/14/22 14:28 • (MSD) R3871820-28 12/14/22 14:29

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0989	0.0985	98.9	98.5	1	90.0-110			0.405	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J4	The associated batch QC was outside the established quality control range for accuracy.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

E179

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

SUB CONTRATOR: Pace TN	COMPANY: PACE TN	PHONE: (800) 767-5859	FAX: (615) 758-5859
ADDRESS: 12065 Lebanon Rd		ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: Mt. Juliet, TN 37122			

712 L1565219

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS	
1	2212303-001F	EB-12-6-22	500AMBHDP F-NAOH	Groundwater	12/6/2022 9:10:00 AM	1	Total Cyanide J and MDL	-01
2	2212303-002F	MKTF-46	500AMBHDP F-NAOH	Groundwater	12/6/2022 9:20:00 AM	1	Total Cyanide J and MDL	-02
3	2212303-003F	MKTF-18R	500AMBHDP F-NAOH	Groundwater	12/6/2022 9:50:00 AM	1	Total Cyanide J and MDL	-03
4	2212303-005F	PW-3	500AMBHDP F-NAOH	Groundwater	12/6/2022 10:35:00 AM	1	Total Cyanide J and MDL	-04
5	2212303-006F	East LDU	500AMBHDP F-NAOH	Groundwater	12/6/2022 10:50:00 AM	1	Total Cyanide J and MDL	-05
6	2212303-007F	West LDU	500AMBHDP F-NAOH	Groundwater	12/6/2022 11:00:00 AM	1	Total Cyanide J and MDL	-06
7	2212303-009F	DUP-12-6-22	500AMBHDP F-NAOH	Groundwater	12/6/2022	1	Total Cyanide J and MDL	-07
8	2212303-010F	MKTF-38	500AMBHDP F-NAOH	Groundwater	12/6/2022 10:00:00 AM	1	Total Cyanide J and MDL	-08

Sample Receipt Checklist

COC Seal Present/Intact:	✓ Y ___ N	If Applicable	
COC Signed/Accurate:	✓ Y ___ N	VOA Zero Headspace:	___ Y ___ N
Bottles arrive intact:	✓ Y ___ N	Proj.Correct/Check:	___ Y ___ N
Correct bottles used:	✓ Y ___ N	GBA2	
Sufficient volume sent:	✓ Y ___ N		
RAD Screen <0.5 mR/hr:	✓ Y ___ N	0.4+0=0.4	

SPECIAL INSTRUCTIONS / COMMENTS: 770708221628

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By: Sam	Date: 12/7/2022	Time: 12:34 PM	Received By: Jennifer Jullian	Date: 12-8-22	Time: 0900
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☑ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:

☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY

Temp of samples _____ °C Attempt to Cool ? _____

Comments: _____

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212303**

09-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-71965**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **71965**	RunNo: **93212**
Prep Date: **12/8/2022**	Analysis Date: **12/12/2022**	SeqNo: **3358950** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LCSLL-71965**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **71965**	RunNo: **93212**
Prep Date: **12/8/2022**	Analysis Date: **12/12/2022**	SeqNo: **3358951** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0019	0.0030	0.002000	0	93.5	50	150			J
Beryllium	0.0019	0.0020	0.002000	0	93.8	50	150			J
Cadmium	0.0016	0.0020	0.002000	0	80.8	50	150			J
Chromium	0.0050	0.0060	0.006000	0	83.1	50	150			J
Cobalt	0.0070	0.0060	0.006000	0	116	50	150			
Nickel	0.0043	0.010	0.005000	0	86.2	50	150			J
Silver	0.0039	0.0050	0.005000	0	78.3	50	150			J
Vanadium	0.0095	0.050	0.01000	0	95.2	50	150			J
Zinc	0.012	0.010	0.01000	0	118	50	150			

Sample ID: **LCS-71965**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **71965**	RunNo: **93212**
Prep Date: **12/8/2022**	Analysis Date: **12/12/2022**	SeqNo: **3358955** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.52	0.0030	0.5000	0	103	85	115			
Beryllium	0.53	0.0020	0.5000	0	106	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.9	85	115			
Chromium	0.50	0.0060	0.5000	0	99.8	85	115			
Cobalt	0.51	0.0060	0.5000	0	103	85	115			
Nickel	0.49	0.010	0.5000	0	98.2	85	115			
Silver	0.095	0.0050	0.1000	0	94.7	85	115			
Vanadium	0.52	0.050	0.5000	0	104	85	115			
Zinc	0.53	0.010	0.5000	0	106	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212303**

09-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-B** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**

Client ID: **PBW** Batch ID: **B93514** RunNo: **93514**

Prep Date: Analysis Date: **12/22/2022** SeqNo: **3373357** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0013	0.0020								J
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LCSLL-B** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**

Client ID: **BatchQC** Batch ID: **B93514** RunNo: **93514**

Prep Date: Analysis Date: **12/22/2022** SeqNo: **3373358** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0019	0.0020	0.002000	0	95.0	50	150			J
Beryllium	0.0020	0.0020	0.002000	0	97.8	50	150			J
Cadmium	0.0017	0.0020	0.002000	0	83.5	50	150			J
Chromium	0.0057	0.0060	0.006000	0	95.6	50	150			J
Cobalt	0.0067	0.0060	0.006000	0	112	50	150			
Nickel	0.0040	0.010	0.005000	0	80.5	50	150			J
Silver	0.0047	0.0050	0.005000	0	93.9	50	150			J
Vanadium	0.0094	0.050	0.01000	0	94.4	50	150			J
Zinc	0.0094	0.010	0.01000	0	93.5	50	150			J

Sample ID: **LCS-B** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**

Client ID: **LCSW** Batch ID: **B93514** RunNo: **93514**

Prep Date: Analysis Date: **12/22/2022** SeqNo: **3373359** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.52	0.0020	0.5000	0	105	85	115			
Beryllium	0.51	0.0020	0.5000	0	101	85	115			
Cadmium	0.50	0.0020	0.5000	0	101	85	115			
Chromium	0.51	0.0060	0.5000	0	102	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.9	85	115			
Nickel	0.51	0.010	0.5000	0	103	85	115			
Silver	0.10	0.0050	0.1000	0	102	85	115			
Vanadium	0.51	0.050	0.5000	0	102	85	115			
Zinc	0.51	0.010	0.5000	0	102	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2212303**
09-Jan-23

Client: Marathon
Project: 2022 GW Sampling 4th Quarter

Sample ID: **2212303-009EMS** SampType: **MS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **DUP-12-6-22** Batch ID: **B93514** RunNo: **93514**
Prep Date: Analysis Date: **12/22/2022** SeqNo: **3373375** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.54	0.0020	0.5000	0.04092	99.1	70	130			
Beryllium	0.52	0.0020	0.5000	0	103	70	130			
Cadmium	0.50	0.0020	0.5000	0	99.0	70	130			
Chromium	0.48	0.0060	0.5000	0	95.2	70	130			
Cobalt	0.45	0.0060	0.5000	0	90.6	70	130			
Nickel	0.47	0.010	0.5000	0	94.8	70	130			
Silver	0.10	0.0050	0.1000	0.002964	99.2	70	130			
Vanadium	0.50	0.050	0.5000	0.003351	99.1	70	130			
Zinc	0.49	0.010	0.5000	0.004425	96.9	70	130			

Sample ID: **2212303-009EMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **DUP-12-6-22** Batch ID: **B93514** RunNo: **93514**
Prep Date: Analysis Date: **12/22/2022** SeqNo: **3373378** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.52	0.0020	0.5000	0.04092	96.3	70	130	2.65	20	
Beryllium	0.52	0.0020	0.5000	0	103	70	130	0.316	20	
Cadmium	0.48	0.0020	0.5000	0	95.1	70	130	4.09	20	
Chromium	0.46	0.0060	0.5000	0	92.2	70	130	3.15	20	
Cobalt	0.44	0.0060	0.5000	0	87.6	70	130	3.37	20	
Nickel	0.46	0.010	0.5000	0	92.0	70	130	2.96	20	
Silver	0.097	0.0050	0.1000	0.002964	94.5	70	130	4.66	20	
Vanadium	0.50	0.050	0.5000	0.003351	99.7	70	130	0.562	20	
Zinc	0.47	0.010	0.5000	0.004425	93.9	70	130	3.18	20	

Sample ID: **2212303-010EMS** SampType: **MS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **MKTF-38** Batch ID: **B93514** RunNo: **93514**
Prep Date: Analysis Date: **12/22/2022** SeqNo: **3373383** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.57	0.0020	0.5000	0.08376	97.7	70	130			
Beryllium	0.51	0.0020	0.5000	0.001916	102	70	130			
Cadmium	0.50	0.0020	0.5000	0.001105	99.6	70	130			
Chromium	0.48	0.0060	0.5000	0	95.0	70	130			
Cobalt	0.45	0.0060	0.5000	0	90.2	70	130			
Nickel	0.47	0.010	0.5000	0	93.7	70	130			
Silver	0.10	0.0050	0.1000	0.003473	98.5	70	130			
Vanadium	0.51	0.050	0.5000	0.003763	101	70	130			
Zinc	0.48	0.010	0.5000	0.01630	92.9	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2212303**
09-Jan-23

Client: Marathon
Project: 2022 GW Sampling 4th Quarter

Sample ID: **2212303-010EMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **MKTF-38**	Batch ID: **B93514**	RunNo: **93514**
Prep Date:	Analysis Date: **12/22/2022**	SeqNo: **3373384** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.55	0.0020	0.5000	0.08376	92.3	70	130	4.85	20	
Beryllium	0.49	0.0020	0.5000	0.001916	98.4	70	130	3.84	20	
Cadmium	0.47	0.0020	0.5000	0.001105	94.3	70	130	5.51	20	
Chromium	0.45	0.0060	0.5000	0	90.0	70	130	5.44	20	
Cobalt	0.43	0.0060	0.5000	0	85.3	70	130	5.61	20	
Nickel	0.45	0.010	0.5000	0	89.6	70	130	4.43	20	
Silver	0.097	0.0050	0.1000	0.003473	93.1	70	130	5.47	20	
Vanadium	0.48	0.050	0.5000	0.003763	96.0	70	130	4.94	20	
Zinc	0.46	0.010	0.5000	0.01630	88.0	70	130	5.19	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2212303**
09-Jan-23

Client: Marathon
Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-71965**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **71965**	RunNo: **93211**
Prep Date: **12/8/2022**	Analysis Date: **12/12/2022**	SeqNo: **3359459** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **MSLCSLL-71965**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **71965**	RunNo: **93211**
Prep Date: **12/8/2022**	Analysis Date: **12/12/2022**	SeqNo: **3359460** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0010	0.0010	0.001000	0	105	50	150			
Arsenic	0.0010	0.0010	0.001000	0	103	50	150			
Lead	0.00051	0.00050	0.0005000	0	102	50	150			
Selenium	0.0011	0.0010	0.001000	0	110	50	150			

Sample ID: **MSLCS-71965**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **71965**	RunNo: **93211**
Prep Date: **12/8/2022**	Analysis Date: **12/12/2022**	SeqNo: **3359461** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	102	85	115			
Arsenic	0.025	0.0010	0.02500	0	99.1	85	115			
Lead	0.012	0.00050	0.01250	0	98.7	85	115			

Sample ID: **MSLCS-71965**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **71965**	RunNo: **93211**
Prep Date: **12/8/2022**	Analysis Date: **12/12/2022**	SeqNo: **3359502** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.025	0.0010	0.02500	0	101	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212303**

09-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A93132**	RunNo: **93132**
Prep Date:	Analysis Date: **12/8/2022**	SeqNo: **3354932** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0012	0.0010								
Arsenic	ND	0.0010								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A93132**	RunNo: **93132**
Prep Date:	Analysis Date: **12/8/2022**	SeqNo: **3354933** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0012	0.0010	0.001000	0	120	50	150			B
Arsenic	0.00094	0.0010	0.001000	0	94.1	50	150			J
Selenium	0.00092	0.0010	0.001000	0	91.7	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A93132**	RunNo: **93132**
Prep Date:	Analysis Date: **12/8/2022**	SeqNo: **3354934** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.2	85	115			B
Arsenic	0.024	0.0010	0.02500	0	97.2	85	115			
Selenium	0.024	0.0010	0.02500	0	97.4	85	115			

Sample ID: **2212303-001EMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **EB-12-6-22**	Batch ID: **A93132**	RunNo: **93132**
Prep Date:	Analysis Date: **12/8/2022**	SeqNo: **3354949** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.027	0.0010	0.02500	0	107	70	130			
Selenium	0.029	0.0010	0.02500	0	116	70	130			

Sample ID: **2212303-001EMSDL**	SampType: **MSD**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **EB-12-6-22**	Batch ID: **A93132**	RunNo: **93132**
Prep Date:	Analysis Date: **12/8/2022**	SeqNo: **3354950** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.026	0.0010	0.02500	0	103	70	130	3.29	20	
Selenium	0.029	0.0010	0.02500	0	114	70	130	1.17	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212303**

09-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **2212303-002EMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **MKTF-46**	Batch ID: **A93132**	RunNo: **93132**
Prep Date:	Analysis Date: **12/8/2022**	SeqNo: **3354952** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.029	0.0010	0.02500	0.0008063	111	70	130			
Selenium	0.030	0.0010	0.02500	0.0006863	117	70	130			

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A93305**	RunNo: **93305**
Prep Date:	Analysis Date: **12/14/2022**	SeqNo: **3363137** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A93305**	RunNo: **93305**
Prep Date:	Analysis Date: **12/14/2022**	SeqNo: **3363138** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.00098	0.0010	0.001000	0	97.5	50	150			J
Lead	0.00050	0.00050	0.0005000	0	100	50	150			
Selenium	0.00096	0.0010	0.001000	0	95.5	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A93305**	RunNo: **93305**
Prep Date:	Analysis Date: **12/14/2022**	SeqNo: **3363139** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	94.4	85	115			
Lead	0.012	0.00050	0.01250	0	98.4	85	115			
Selenium	0.025	0.0010	0.02500	0	101	85	115			

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A93335**	RunNo: **93335**
Prep Date:	Analysis Date: **12/15/2022**	SeqNo: **3364955** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.00050								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2212303**
09-Jan-23

Client: Marathon
Project: 2022 GW Sampling 4th Quarter

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**							
Client ID: **BatchQC**	Batch ID: **A93335**	RunNo: **93335**							
Prep Date:	Analysis Date: **12/15/2022**	SeqNo: **3364956**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.00051	0.00050	0.0005000	0	102	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**							
Client ID: **LCSW**	Batch ID: **A93335**	RunNo: **93335**							
Prep Date:	Analysis Date: **12/15/2022**	SeqNo: **3364957**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.012	0.00050	0.01250	0	95.7	85	115			

Sample ID: **2212303-002EMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Dissolved Metals**							
Client ID: **MKTF-46**	Batch ID: **A93335**	RunNo: **93335**							
Prep Date:	Analysis Date: **12/15/2022**	SeqNo: **3364991**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.011	0.00050	0.01250	0	90.8	70	130			

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **D93335**	RunNo: **93335**
Prep Date:	Analysis Date: **12/15/2022**	SeqNo: **3367248** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**							
Client ID: **BatchQC**	Batch ID: **D93335**	RunNo: **93335**							
Prep Date:	Analysis Date: **12/15/2022**	SeqNo: **3367249**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.0011	0.0010	0.001000	0	105	50	150			
Lead	0.00058	0.00050	0.0005000	0	117	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**							
Client ID: **LCSW**	Batch ID: **D93335**	RunNo: **93335**							
Prep Date:	Analysis Date: **12/15/2022**	SeqNo: **3367250**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	97.9	85	115			
Lead	0.013	0.00050	0.01250	0	101	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2212303**
09-Jan-23

Client: Marathon
Project: 2022 GW Sampling 4th Quarter

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **D93335**	RunNo: **93335**
Prep Date:	Analysis Date: **12/15/2022**	SeqNo: **3367250** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.026	0.0010	0.02500	0	104	85	115			

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **D93335**	RunNo: **93335**
Prep Date:	Analysis Date: **12/15/2022**	SeqNo: **3367251** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.0011	0.0010	0.001000	0	108	50	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2212303**
09-Jan-23

Client: Marathon
Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-72127**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **PBW**	Batch ID: **72127**	RunNo: **93362**							
Prep Date: **12/15/2022**	Analysis Date: **12/16/2022**	SeqNo: **3366414**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-72127**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **BatchQC**	Batch ID: **72127**	RunNo: **93362**							
Prep Date: **12/15/2022**	Analysis Date: **12/16/2022**	SeqNo: **3366415**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00020	0.00020	0.0001500	0	134	50	150			

Sample ID: **LCS-72127**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **LCSW**	Batch ID: **72127**	RunNo: **93362**							
Prep Date: **12/15/2022**	Analysis Date: **12/16/2022**	SeqNo: **3366416**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0049	0.00020	0.005000	0	97.5	85	115			

Sample ID: **2212303-006DMS**	SampType: **MS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **East LDU**	Batch ID: **72127**	RunNo: **93362**							
Prep Date: **12/15/2022**	Analysis Date: **12/16/2022**	SeqNo: **3367156**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0052	0.00020	0.005000	0.0001347	101	75	125			

Sample ID: **2212303-006DMSD**	SampType: **MSD**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **East LDU**	Batch ID: **72127**	RunNo: **93362**							
Prep Date: **12/15/2022**	Analysis Date: **12/16/2022**	SeqNo: **3367157**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0.0001347	99.0	75	125	2.02	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212303**

09-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-71922**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **71922**	RunNo: **93151**
Prep Date: **12/8/2022**	Analysis Date: **12/8/2022**	SeqNo: **3355987** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-71922**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW**	Batch ID: **71922**	RunNo: **93151**
Prep Date: **12/8/2022**	Analysis Date: **12/8/2022**	SeqNo: **3355989** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.10	0.010	0.1000	0	104	70	130			

Sample ID: **LCSD-71922**	SampType: **LCSD**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSS02**	Batch ID: **71922**	RunNo: **93151**
Prep Date: **12/8/2022**	Analysis Date: **12/8/2022**	SeqNo: **3355990** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	111	70	130	6.20	20	

Sample ID: **MB-71922**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **71922**	RunNo: **93151**
Prep Date: **12/8/2022**	Analysis Date: **12/8/2022**	SeqNo: **3356024** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2212303**
09-Jan-23

Client: Marathon
Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-71994**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **PBW**	Batch ID: **71994**	RunNo: **93268**							
Prep Date: **12/9/2022**	Analysis Date: **12/14/2022**	SeqNo: **3365633**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.15	0.064								
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.033		0.03750		86.7	15.9	177			

Sample ID: **LCS-71994**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSW**	Batch ID: **71994**	RunNo: **93268**							
Prep Date: **12/9/2022**	Analysis Date: **12/14/2022**	SeqNo: **3365634**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.21	0.064	0.1875	0	112	31.2	125			B
Surr: DNOP	0.018		0.01875		97.7	15.9	177			

Sample ID: **LCSD-71994**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSS02**	Batch ID: **71994**	RunNo: **93268**							
Prep Date: **12/9/2022**	Analysis Date: **12/14/2022**	SeqNo: **3365635**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.21	0.064	0.1875	0	114	31.2	125	1.68	20	B
Surr: DNOP	0.017		0.01875		91.3	15.9	177	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212303**

09-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **R93213**	RunNo: **93213**
Prep Date:	Analysis Date: **12/13/2022**	SeqNo: **3368698** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.47	0.050	0.5000	0	94.6	80	120			
Surr: BFB	46		20.00		228	70	130			S

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **R93213**	RunNo: **93213**
Prep Date:	Analysis Date: **12/13/2022**	SeqNo: **3368699** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	21		20.00		105	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2212303**
09-Jan-23

Client: Marathon
Project: 2022 GW Sampling 4th Quarter

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R93183**	RunNo: **93183**
Prep Date:	Analysis Date: **12/9/2022**	SeqNo: **3357436** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	24	1.0	20.00	0	119	70	130			
Toluene	22	1.0	20.00	0	108	70	130			
Chlorobenzene	21	1.0	20.00	0	103	70	130			
1,1-Dichloroethene	22	1.0	20.00	0	108	70	130			
Trichloroethene (TCE)	21	1.0	20.00	0	103	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		104	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.9	70	130			
Surr: Dibromofluoromethane	10		10.00		105	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R93183**	RunNo: **93183**
Prep Date:	Analysis Date: **12/9/2022**	SeqNo: **3357463** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212303**

09-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R93183**	RunNo: **93183**
Prep Date:	Analysis Date: **12/9/2022**	SeqNo: **3357463** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	12		10.00		122	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		98.0	70	130			
Surr: Dibromofluoromethane	12		10.00		115	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R93209**	RunNo: **93209**
Prep Date:	Analysis Date: **12/12/2022**	SeqNo: **3359106** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	111	70	130			
Toluene	21	1.0	20.00	0	107	70	130			
Chlorobenzene	21	1.0	20.00	0	104	70	130			
1,1-Dichloroethene	22	1.0	20.00	0	112	70	130			
Trichloroethene (TCE)	22	1.0	20.00	0	112	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		106	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	11		10.00		109	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Sample ID: **2212303-010ams**	SampType: **MS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **MKTF-38**	Batch ID: **R93209**	RunNo: **93209**
Prep Date:	Analysis Date: **12/12/2022**	SeqNo: **3359112** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	38	1.0	20.00	16.24	107	70	130			
Toluene	22	1.0	20.00	0	111	70	130			
Chlorobenzene	21	1.0	20.00	0	107	70	130			
1,1-Dichloroethene	19	1.0	20.00	0	95.4	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	102	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		99.6	70	130			
Surr: 4-Bromofluorobenzene	8.0		10.00		80.0	70	130			
Surr: Dibromofluoromethane	9.7		10.00		97.1	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2212303**
09-Jan-23

Client: Marathon
Project: 2022 GW Sampling 4th Quarter

Sample ID: **2212303-010amsd** SampType: **MSD** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **MKTF-38** Batch ID: **R93209** RunNo: **93209**
Prep Date: Analysis Date: **12/12/2022** SeqNo: **3359113** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	36	1.0	20.00	16.24	98.3	70	130	4.48	20	
Toluene	21	1.0	20.00	0	103	70	130	8.00	20	
Chlorobenzene	20	1.0	20.00	0	99.0	70	130	7.82	20	
1,1-Dichloroethene	18	1.0	20.00	0	88.2	70	130	7.84	20	
Trichloroethene (TCE)	19	1.0	20.00	0	97.3	70	130	5.12	20	
Surr: 1,2-Dichloroethane-d4	9.5		10.00		95.1	70	130	0	0	
Surr: 4-Bromofluorobenzene	8.0		10.00		79.6	70	130	0	0	
Surr: Dibromofluoromethane	9.5		10.00		95.5	70	130	0	0	
Surr: Toluene-d8	9.8		10.00		98.3	70	130	0	0	

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW** Batch ID: **R93209** RunNo: **93209**
Prep Date: Analysis Date: **12/12/2022** SeqNo: **3359144** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2212303**
09-Jan-23

Client: Marathon
Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R93209**	RunNo: **93209**
Prep Date:	Analysis Date: **12/12/2022**	SeqNo: **3359144** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		106	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	11		10.00		106	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2212303**
09-Jan-23

Client: Marathon
Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb-71974**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **71974**	RunNo: **93247**
Prep Date: **12/9/2022**	Analysis Date: **12/13/2022**	SeqNo: **3360800** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Anthracene	ND	10								
Benz(a)anthracene	ND	5.0								
Benzo(b)fluoranthene	ND	10								
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	10								
2,4-Dinitrophenol	ND	20								
Fluoranthene	ND	10								
Fluorene	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
1-Methylnaphthalene	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
Naphthalene	ND	5.0								
Phenanthrene	ND	10								
Phenol	ND	20								
Pyrene	ND	10								
Pyridine	ND	40								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	79		200.0		39.6	15	84.5			
Surr: Phenol-d5	62		200.0		30.9	15	67			
Surr: 2,4,6-Tribromophenol	110		200.0		52.7	15	108			
Surr: Nitrobenzene-d5	51		100.0		51.1	16.8	112			
Surr: 2-Fluorobiphenyl	44		100.0		44.2	15	101			
Surr: 4-Terphenyl-d14	84		100.0		84.4	34.4	134			

Sample ID: **lcs-71974**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **71974**	RunNo: **93247**
Prep Date: **12/9/2022**	Analysis Date: **12/13/2022**	SeqNo: **3360801** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212303**

09-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **lcs-71974**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **71974**	RunNo: **93247**
Prep Date: **12/9/2022**	Analysis Date: **12/13/2022**	SeqNo: **3360801** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	63	10	100.0	0	62.7	21.3	104			
1,4-Dichlorobenzene	45	5.0	100.0	0	44.6	15	89.8			
Phenol	90	20	200.0	0	44.9	17	61.1			
Pyrene	89	10	100.0	0	89.1	61	123			
Surr: 2-Fluorophenol	100		200.0		50.6	15	84.5			
Surr: Phenol-d5	78		200.0		39.1	15	67			
Surr: 2,4,6-Tribromophenol	170		200.0		83.5	15	108			
Surr: Nitrobenzene-d5	70		100.0		70.4	16.8	112			
Surr: 2-Fluorobiphenyl	60		100.0		60.2	15	101			
Surr: 4-Terphenyl-d14	98		100.0		97.9	34.4	134			

Sample ID: **lcsD-71974**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **71974**	RunNo: **93247**
Prep Date: **12/9/2022**	Analysis Date: **12/13/2022**	SeqNo: **3360802** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	57	10	100.0	0	57.2	21.3	104	9.14	45.3	
1,4-Dichlorobenzene	39	5.0	100.0	0	39.0	15	89.8	13.5	39.6	
Phenol	75	20	200.0	0	37.7	17	61.1	17.4	42.5	
Pyrene	79	10	100.0	0	78.8	61	123	12.3	11.8	R
Surr: 2-Fluorophenol	69		200.0		34.6	15	84.5	0	0	
Surr: Phenol-d5	69		200.0		34.3	15	67	0	0	
Surr: 2,4,6-Tribromophenol	94		200.0		47.2	15	108	0	0	
Surr: Nitrobenzene-d5	62		100.0		61.6	16.8	112	0	0	
Surr: 2-Fluorobiphenyl	56		100.0		55.7	15	101	0	0	
Surr: 4-Terphenyl-d14	94		100.0		94.1	34.4	134	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212303**

09-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb-71974**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **71974**	RunNo: **93217**
Prep Date: **12/9/2022**	Analysis Date: **12/12/2022**	SeqNo: **3359415** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.30								
1-Methylnaphthalene	ND	0.30								
2-Methylnaphthalene	ND	0.30								
Acenaphthene	ND	0.30								
Fluorene	ND	0.30								
Phenanthrene	ND	0.30								
Anthracene	ND	0.30								
Fluoranthene	ND	0.30								
Pyrene	ND	1.0								
Benz(a)anthracene	ND	0.30								
Chrysene	ND	0.30								
Benzo(b)fluoranthene	ND	0.40								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	53		100.0		52.6	15	108			
Surr: 2,4,6-Tribromophenol	77		200.0		38.7	15	112			
Surr: 2-Fluorobiphenyl	49		100.0		48.7	15	107			
Surr: 4-Terphenyl-d14	130		100.0		130	15	166			

Sample ID: **lcs-71974-lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **71974**	RunNo: **93217**
Prep Date: **12/9/2022**	Analysis Date: **12/12/2022**	SeqNo: **3359416** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.88	1.0	2.000	0	44.0	15	60.5			J
Naphthalene	1.3	0.30	2.000	0	67.0	15	78.3			
1-Methylnaphthalene	1.3	0.30	2.000	0	65.0	15	79.6			
2-Methylnaphthalene	1.3	0.30	2.000	0	64.0	15	78.6			
Acenaphthene	1.4	0.30	2.000	0	72.0	15	92			
Fluorene	1.5	0.30	2.000	0	76.0	15	96			
Phenanthrene	1.7	0.30	2.000	0	85.0	21	103			
Anthracene	1.7	0.30	2.000	0	84.0	21.1	106			
Fluoranthene	1.8	0.30	2.000	0	88.0	32.8	119			
Pyrene	1.8	1.0	2.000	0	89.0	34.1	110			
Benz(a)anthracene	1.8	0.30	2.000	0	92.0	32	132			
Chrysene	1.9	0.30	2.000	0	93.0	31.3	112			
Benzo(b)fluoranthene	1.8	0.40	2.000	0	89.0	34.1	119			
Indeno(1,2,3-cd)pyrene	1.9	0.30	2.000	0	93.0	24.7	152			
Surr: Nitrobenzene-d5	68		100.0		67.7	15	108			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2212303**
09-Jan-23

Client: Marathon
Project: 2022 GW Sampling 4th Quarter

Sample ID: **lcs-71974-lf** SampType: **LCS** TestCode: **EPA Method 8270SIM**
Client ID: **LCSW** Batch ID: **71974** RunNo: **93217**
Prep Date: **12/9/2022** Analysis Date: **12/12/2022** SeqNo: **3359416** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	0		200.0		0	15	112			S
Surr: 2-Fluorobiphenyl	56		100.0		56.2	15	107			
Surr: 4-Terphenyl-d14	100		100.0		100	15	166			

Sample ID: **lcsd-71974-lf** SampType: **LCSD** TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02** Batch ID: **71974** RunNo: **93217**
Prep Date: **12/9/2022** Analysis Date: **12/12/2022** SeqNo: **3359417** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.86	1.0	2.000	0	43.0	15	60.5	2.30	29.7	J
Naphthalene	1.3	0.30	2.000	0	66.0	15	78.3	1.50	31.7	
1-Methylnaphthalene	1.3	0.30	2.000	0	65.0	15	79.6	0	31.4	
2-Methylnaphthalene	1.3	0.30	2.000	0	64.0	15	78.6	0	30.5	
Acenaphthene	1.4	0.30	2.000	0	71.0	15	92	1.40	30.5	
Fluorene	1.5	0.30	2.000	0	75.0	15	96	1.32	25.1	
Phenanthrene	1.7	0.30	2.000	0	84.0	21	103	1.18	26.4	
Anthracene	1.7	0.30	2.000	0	84.0	21.1	106	0	14.4	
Fluoranthene	1.8	0.30	2.000	0	90.0	32.8	119	2.25	14.8	
Pyrene	1.8	1.0	2.000	0	91.0	34.1	110	2.22	19.2	
Benz(a)anthracene	1.9	0.30	2.000	0	95.0	32	132	3.21	29.3	
Chrysene	1.9	0.30	2.000	0	93.0	31.3	112	0	19	
Benzo(b)fluoranthene	1.8	0.40	2.000	0	90.0	34.1	119	1.12	31.6	
Indeno(1,2,3-cd)pyrene	1.9	0.30	2.000	0	97.0	24.7	152	4.21	21.3	
Surr: Nitrobenzene-d5	66		100.0		65.7	15	108	0	0	
Surr: 2,4,6-Tribromophenol	0		200.0		0	15	112	0	0	S
Surr: 2-Fluorobiphenyl	58		100.0		57.8	15	107	0	0	
Surr: 4-Terphenyl-d14	90		100.0		89.9	15	166	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 3528 of 3808

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Marathon | Work Order Number: 2212393 | ReptNo: 1

Received By: Juan Rojas 12/7/2022 7:30:00 AM

Completed By: Sean Livingston 12/7/2022 7:51:40 AM

Reviewed By: 12-7-22

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐	
2. How was the sample delivered?	Courier			

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☑	No ☐	NA ☐
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

3m 12/7/22

# of preserved bottles checked for pH: 16 8 (<2 or >12 unless noted)

Adjusted? YES

Checked by: JM 12/7/22

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: | Date:

By Whom: | Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks: 0.4 ml of HNO3 was added to samples 003E, 005E for pH<2. JM 12/7/22

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.9	Good				
2	0.8	Good				
3	0.2	Good				
4	1.3	Good				

Received by OCD: 4/21/2023 9:21:57 AM

Released to Imaging: 4/21/2023 9:40:26 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Client: Marathon Gallup Refinery
Mailing Address: 92 Giant Crossing Road, Jamestown NM 87301
Phone #: 808-640-1823
email or Fax#:
QA/QC Package: X Standard ☐ Level 4 (Full Validation)
Accreditation: ☐ Az Compliance ☐ NELAC ☐ Other
X EDD (Type)

X Standard Rush
Project Name: 2022 GW Sampling 4th Quarter
Project #: 697-080-001
Project Manager: Lesli Alexander
Sampler:
On Ice: ☑ Yes ☐ No
# of Coolers: 4
Cooler Temp(including CF): See Remarks

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 22123O3	See Analyte	8260B VOC	8270C:SVOC	8270CSIM: PAH, 1,4 Dioxane	8015: TPH GRO/DRO/MRO	E200.7: Metals	E200.7: Dissolved Metals	E245.1 Mercury	E504.1 EDB	E335.4 Cyanide Subbed	537.1:PFAS	SM 5210B: BOD	410.4: COD	
12/6	9:10		EB-12-6-22	13		001		X	X	X	X	X	X	X	X	X				
12/6	9:20		MKTF-4b	13		002		X	X	X	X	X	X	X	X	X				
12/6	9:28		MKTF-18R	13		003		X	X	X	X	X	X	X	X	X				
12/6	10:20		MKTF-16	7		004		X	X											
12/6	10:35		Blank	13		005		X	X	X	X	X	X	X	X	X				
12/6	10:50		EAST LDW	13		006		X	X	X	X	X	X	X	X	X				
12/6	11:00		WEST LDW	13		007		X	X	X	X	X	X	X	X	X				
12/6	11:00		FB-12-6-22	3		008		X	X											
12/6	—		DUP 12-6-22	13		009		X	X	X	X	X	X	X	X	X				
12/6	10:30		MKTF-3B			010														
			Trip Blank			011														

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
12/6	12:00	Hilario Tapia		courier	12/7/22	7:30
Date	Time	Relinquished by:	Received by:	Via:	Date	Time

MKTF-16 only had enough fluid to fill VOCs
0.8+0.1=0.9 0.1+0.1=0.2
0.7+0.1=0.8 1.2+0.1=1.3

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

January 17, 2023

Lesli Alexander

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX: (505) 632-3911

RE: 2022 GW Sampling 4th Quarter OrderNo.: 2212442

Dear Lesli Alexander:

Hall Environmental Analysis Laboratory received 10 sample(s) on 12/8/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **2212442**
Date: **1/17/2023**

CLIENT: Marathon
Project: 2022 GW Sampling 4th Quarter

Analytical Notes Regarding EPA Method 8015D DRO/MRO:
The method blank had a low level detection for DRO. Samples with detections are flagged with a "B".

"S" flagged surrogates/spikes denote that the analyte recovery was outstide of the standard limits.

Analytical Notes Regarding EPA Method 8270 and 8270 SIMS:
1-Methylnaphthalene, 2-Methylnaphthalene and Naphthalene were reported by EPA Method 8270 instead of EPA Method 8270SIMs becuase of their elevated concentrations for samples OW-57 and OW-63.

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-7-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/7/2022 9:30:00 AM
Lab ID: 2212442-001A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **CCM**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	12/13/2022 6:27:00 PM	R93213
Surr: BFB	98.8	0	70-130		%Rec	1	12/13/2022 6:27:00 PM	R93213
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	12/16/2022 4:14:07 AM	R93331
Toluene	ND	0.20	1.0		µg/L	1	12/16/2022 4:14:07 AM	R93331
Ethylbenzene	ND	0.21	1.0		µg/L	1	12/16/2022 4:14:07 AM	R93331
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	12/16/2022 4:14:07 AM	R93331
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	12/16/2022 4:14:07 AM	R93331
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	12/16/2022 4:14:07 AM	R93331
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	12/16/2022 4:14:07 AM	R93331
Acetone	ND	2.5	10		µg/L	1	12/16/2022 4:14:07 AM	R93331
Bromomethane	ND	0.85	3.0		µg/L	1	12/16/2022 4:14:07 AM	R93331
2-Butanone	ND	2.0	10		µg/L	1	12/16/2022 4:14:07 AM	R93331
Carbon disulfide	ND	0.59	10		µg/L	1	12/16/2022 4:14:07 AM	R93331
Chlorobenzene	ND	0.16	1.0		µg/L	1	12/16/2022 4:14:07 AM	R93331
Chloroform	ND	0.13	1.0		µg/L	1	12/16/2022 4:14:07 AM	R93331
Chloromethane	ND	0.41	3.0		µg/L	1	12/16/2022 4:14:07 AM	R93331
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	12/16/2022 4:14:07 AM	R93331
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	12/16/2022 4:14:07 AM	R93331
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	12/16/2022 4:14:07 AM	R93331
Isopropylbenzene	ND	0.18	1.0		µg/L	1	12/16/2022 4:14:07 AM	R93331
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	12/16/2022 4:14:07 AM	R93331
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/16/2022 4:14:07 AM	R93331
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/16/2022 4:14:07 AM	R93331
n-Propylbenzene	ND	0.18	1.0		µg/L	1	12/16/2022 4:14:07 AM	R93331
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	12/16/2022 4:14:07 AM	R93331
Styrene	ND	0.14	1.0		µg/L	1	12/16/2022 4:14:07 AM	R93331
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/16/2022 4:14:07 AM	R93331
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	12/16/2022 4:14:07 AM	R93331
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	12/16/2022 4:14:07 AM	R93331
Vinyl chloride	ND	0.32	1.0		µg/L	1	12/16/2022 4:14:07 AM	R93331
Xylenes, Total	ND	0.37	1.5		µg/L	1	12/16/2022 4:14:07 AM	R93331
Surr: 1,2-Dichloroethane-d4	103	0	70-130		%Rec	1	12/16/2022 4:14:07 AM	R93331
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	1	12/16/2022 4:14:07 AM	R93331
Surr: Dibromofluoromethane	99.3	0	70-130		%Rec	1	12/16/2022 4:14:07 AM	R93331
Surr: Toluene-d8	105	0	70-130		%Rec	1	12/16/2022 4:14:07 AM	R93331

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-7-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/7/2022 9:30:00 AM
Lab ID: 2212442-001B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	12/21/2022 6:12:19 AM	72189

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-7-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/7/2022 9:30:00 AM
Lab ID: 2212442-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.035	0.016	0.064	JB	mg/L	1	12/14/2022 6:14:21 PM	71994
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/14/2022 6:14:21 PM	71994
Surr: DNOP	105	0	15.9-177		%Rec	1	12/14/2022 6:14:21 PM	71994
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	12/13/2022 7:34:50 PM	71974
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	12/13/2022 7:34:50 PM	71974
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	12/13/2022 7:34:50 PM	71974
Di-n-octyl phthalate	ND	12	20		µg/L	1	12/13/2022 7:34:50 PM	71974
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	12/13/2022 7:34:50 PM	71974
Diethyl phthalate	ND	6.0	10		µg/L	1	12/13/2022 7:34:50 PM	71974
Dimethyl phthalate	ND	6.0	10		µg/L	1	12/13/2022 7:34:50 PM	71974
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	12/13/2022 7:34:50 PM	71974
2,4-Dinitrophenol	ND	16	20		µg/L	1	12/13/2022 7:34:50 PM	71974
2-Methylphenol	ND	5.0	10		µg/L	1	12/13/2022 7:34:50 PM	71974
3+4-Methylphenol	ND	5.1	10		µg/L	1	12/13/2022 7:34:50 PM	71974
Phenol	ND	18	20		µg/L	1	12/13/2022 7:34:50 PM	71974
Pyridine	ND	14	40		µg/L	1	12/13/2022 7:34:50 PM	71974
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	12/13/2022 7:34:50 PM	71974
Surr: 2-Fluorophenol	41.3	0	15-84.5		%Rec	1	12/13/2022 7:34:50 PM	71974
Surr: Phenol-d5	31.0	0	15-67		%Rec	1	12/13/2022 7:34:50 PM	71974
Surr: 2,4,6-Tribromophenol	52.0	0	15-108		%Rec	1	12/13/2022 7:34:50 PM	71974
Surr: Nitrobenzene-d5	56.5	0	16.8-112		%Rec	1	12/13/2022 7:34:50 PM	71974
Surr: 2-Fluorobiphenyl	47.0	0	15-101		%Rec	1	12/13/2022 7:34:50 PM	71974
Surr: 4-Terphenyl-d14	86.1	0	34.4-134		%Rec	1	12/13/2022 7:34:50 PM	71974
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	12/13/2022 12:51:00 AM	71974
Naphthalene	ND	0.20	0.30		µg/L	1	12/13/2022 12:51:00 AM	71974
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	12/13/2022 12:51:00 AM	71974
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	12/13/2022 12:51:00 AM	71974
Acenaphthene	ND	0.14	0.30		µg/L	1	12/13/2022 12:51:00 AM	71974
Fluorene	ND	0.095	0.30		µg/L	1	12/13/2022 12:51:00 AM	71974
Phenanthrene	ND	0.16	0.30		µg/L	1	12/13/2022 12:51:00 AM	71974
Anthracene	ND	0.14	0.30		µg/L	1	12/13/2022 12:51:00 AM	71974
Fluoranthene	ND	0.14	0.30		µg/L	1	12/13/2022 12:51:00 AM	71974
Pyrene	ND	0.32	1.0		µg/L	1	12/13/2022 12:51:00 AM	71974
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	12/13/2022 12:51:00 AM	71974
Chrysene	ND	0.25	0.30		µg/L	1	12/13/2022 12:51:00 AM	71974
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	12/13/2022 12:51:00 AM	71974
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	12/13/2022 12:51:00 AM	71974

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-7-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/7/2022 9:30:00 AM
Lab ID: 2212442-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	55.8	0	15-108		%Rec	1	12/13/2022 12:51:00 AM	71974
Surr: 2-Fluorobiphenyl	50.3	0	15-107		%Rec	1	12/13/2022 12:51:00 AM	71974
Surr: 4-Terphenyl-d14	104	0	15-166		%Rec	1	12/13/2022 12:51:00 AM	71974

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-7-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/7/2022 9:30:00 AM
Lab ID: 2212442-001D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	ND	0.0016	0.0030		mg/L	1	12/12/2022 6:15:15 PM	71980
Beryllium	ND	0.00060	0.0020		mg/L	1	12/12/2022 6:15:15 PM	71980
Cadmium	ND	0.0018	0.0020		mg/L	1	12/12/2022 6:15:15 PM	71980
Chromium	ND	0.0020	0.0060		mg/L	1	12/12/2022 6:15:15 PM	71980
Cobalt	ND	0.0035	0.0060		mg/L	1	12/12/2022 6:15:15 PM	71980
Nickel	ND	0.0053	0.010		mg/L	1	12/12/2022 6:15:15 PM	71980
Silver	ND	0.0018	0.0050		mg/L	1	12/12/2022 6:15:15 PM	71980
Vanadium	ND	0.0035	0.050		mg/L	1	12/12/2022 6:15:15 PM	71980
Zinc	ND	0.0039	0.010		mg/L	1	12/12/2022 6:15:15 PM	71980
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	12/19/2022 2:00:38 PM	71980
Arsenic	ND	0.00022	0.0010		mg/L	1	12/12/2022 3:39:11 PM	71980
Lead	ND	0.00019	0.00050		mg/L	1	12/12/2022 3:39:11 PM	71980
Selenium	ND	0.00089	0.0010		mg/L	1	12/12/2022 3:39:11 PM	71980
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.000095	0.000091	0.00020	J	mg/L	1	12/16/2022 2:56:12 PM	72128

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-7-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/7/2022 9:30:00 AM
Lab ID: 2212442-001E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **VP**	
Barium	ND	0.0011	0.0020		mg/L	1	12/22/2022 4:56:44 PM	B93514
Beryllium	ND	0.00059	0.0020		mg/L	1	12/22/2022 4:56:44 PM	B93514
Cadmium	ND	0.00098	0.0020		mg/L	1	12/22/2022 4:56:44 PM	B93514
Chromium	ND	0.0020	0.0060		mg/L	1	12/22/2022 4:56:44 PM	B93514
Cobalt	ND	0.0024	0.0060		mg/L	1	12/22/2022 4:56:44 PM	B93514
Nickel	ND	0.0033	0.010		mg/L	1	12/22/2022 4:56:44 PM	B93514
Silver	ND	0.0013	0.0050		mg/L	1	12/22/2022 4:56:44 PM	B93514
Vanadium	ND	0.0017	0.050		mg/L	1	12/22/2022 4:56:44 PM	B93514
Zinc	0.0065	0.0032	0.010	J	mg/L	1	12/22/2022 4:56:44 PM	B93514
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	12/15/2022 11:20:08 AM	A93335
Arsenic	ND	0.00012	0.0010		mg/L	1	12/15/2022 11:20:08 AM	A93335
Lead	ND	0.000057	0.00050		mg/L	1	12/15/2022 11:20:08 AM	A93335
Selenium	ND	0.0017	0.0050		mg/L	5	12/20/2022 1:57:13 PM	A93438
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/16/2022 2:58:20 PM	72128

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-64
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/7/2022 9:40:00 AM
Lab ID: 2212442-002A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **CCM**	
Gasoline Range Organics (GRO)	0.47	0.0090	0.050		mg/L	1	12/13/2022 6:46:00 PM	R93213
Surr: BFB	184	0	70-130	S	%Rec	1	12/13/2022 6:46:00 PM	R93213
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	5.0	0.23	1.0		µg/L	1	12/16/2022 4:42:27 AM	R93331
Toluene	ND	0.20	1.0		µg/L	1	12/16/2022 4:42:27 AM	R93331
Ethylbenzene	20	0.21	1.0		µg/L	1	12/16/2022 4:42:27 AM	R93331
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	12/16/2022 4:42:27 AM	R93331
1,2,4-Trimethylbenzene	33	0.12	1.0		µg/L	1	12/16/2022 4:42:27 AM	R93331
1,3,5-Trimethylbenzene	1.7	0.18	1.0		µg/L	1	12/16/2022 4:42:27 AM	R93331
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	12/16/2022 4:42:27 AM	R93331
Acetone	ND	2.5	10		µg/L	1	12/16/2022 4:42:27 AM	R93331
Bromomethane	ND	0.85	3.0		µg/L	1	12/16/2022 4:42:27 AM	R93331
2-Butanone	ND	2.0	10		µg/L	1	12/16/2022 4:42:27 AM	R93331
Carbon disulfide	ND	0.59	10		µg/L	1	12/16/2022 4:42:27 AM	R93331
Chlorobenzene	ND	0.16	1.0		µg/L	1	12/16/2022 4:42:27 AM	R93331
Chloroform	ND	0.13	1.0		µg/L	1	12/16/2022 4:42:27 AM	R93331
Chloromethane	ND	0.41	3.0		µg/L	1	12/16/2022 4:42:27 AM	R93331
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	12/16/2022 4:42:27 AM	R93331
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	12/16/2022 4:42:27 AM	R93331
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	12/16/2022 4:42:27 AM	R93331
Isopropylbenzene	5.1	0.18	1.0		µg/L	1	12/16/2022 4:42:27 AM	R93331
4-Isopropyltoluene	0.95	0.20	1.0	J	µg/L	1	12/16/2022 4:42:27 AM	R93331
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/16/2022 4:42:27 AM	R93331
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/16/2022 4:42:27 AM	R93331
n-Propylbenzene	2.4	0.18	1.0		µg/L	1	12/16/2022 4:42:27 AM	R93331
sec-Butylbenzene	1.8	0.14	1.0		µg/L	1	12/16/2022 4:42:27 AM	R93331
Styrene	ND	0.14	1.0		µg/L	1	12/16/2022 4:42:27 AM	R93331
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/16/2022 4:42:27 AM	R93331
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	12/16/2022 4:42:27 AM	R93331
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	12/16/2022 4:42:27 AM	R93331
Vinyl chloride	ND	0.32	1.0		µg/L	1	12/16/2022 4:42:27 AM	R93331
Xylenes, Total	2.7	0.37	1.5		µg/L	1	12/16/2022 4:42:27 AM	R93331
Surr: 1,2-Dichloroethane-d4	115	0	70-130		%Rec	1	12/16/2022 4:42:27 AM	R93331
Surr: 4-Bromofluorobenzene	91.0	0	70-130		%Rec	1	12/16/2022 4:42:27 AM	R93331
Surr: Dibromofluoromethane	88.8	0	70-130		%Rec	1	12/16/2022 4:42:27 AM	R93331
Surr: Toluene-d8	108	0	70-130		%Rec	1	12/16/2022 4:42:27 AM	R93331

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-64
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/7/2022 9:40:00 AM
Lab ID: 2212442-002B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0093		µg/L	1	12/21/2022 6:56:54 AM	72189

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-64
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/7/2022 9:40:00 AM
Lab ID: 2212442-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.54	0.016	0.064	B	mg/L	1	12/14/2022 6:37:43 PM	71994
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/14/2022 6:37:43 PM	71994
Surr: DNOP	103	0	15.9-177		%Rec	1	12/14/2022 6:37:43 PM	71994
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	12/13/2022 8:16:05 PM	71974
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	12/13/2022 8:16:05 PM	71974
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	12/13/2022 8:16:05 PM	71974
Di-n-octyl phthalate	ND	12	20		µg/L	1	12/13/2022 8:16:05 PM	71974
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	12/13/2022 8:16:05 PM	71974
Diethyl phthalate	ND	6.0	10		µg/L	1	12/13/2022 8:16:05 PM	71974
Dimethyl phthalate	ND	6.0	10		µg/L	1	12/13/2022 8:16:05 PM	71974
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	12/13/2022 8:16:05 PM	71974
2,4-Dinitrophenol	ND	16	20		µg/L	1	12/13/2022 8:16:05 PM	71974
2-Methylphenol	ND	5.0	10		µg/L	1	12/13/2022 8:16:05 PM	71974
3+4-Methylphenol	ND	5.1	10		µg/L	1	12/13/2022 8:16:05 PM	71974
Phenol	ND	18	20		µg/L	1	12/13/2022 8:16:05 PM	71974
Pyridine	ND	14	40		µg/L	1	12/13/2022 8:16:05 PM	71974
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	12/13/2022 8:16:05 PM	71974
Surr: 2-Fluorophenol	30.9	0	15-84.5		%Rec	1	12/13/2022 8:16:05 PM	71974
Surr: Phenol-d5	25.2	0	15-67		%Rec	1	12/13/2022 8:16:05 PM	71974
Surr: 2,4,6-Tribromophenol	55.3	0	15-108		%Rec	1	12/13/2022 8:16:05 PM	71974
Surr: Nitrobenzene-d5	43.6	0	16.8-112		%Rec	1	12/13/2022 8:16:05 PM	71974
Surr: 2-Fluorobiphenyl	37.8	0	15-101		%Rec	1	12/13/2022 8:16:05 PM	71974
Surr: 4-Terphenyl-d14	73.1	0	34.4-134		%Rec	1	12/13/2022 8:16:05 PM	71974
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	12/13/2022 1:34:00 AM	71974
Naphthalene	0.94	0.20	0.30		µg/L	1	12/13/2022 1:34:00 AM	71974
1-Methylnaphthalene	0.76	0.15	0.30		µg/L	1	12/13/2022 1:34:00 AM	71974
2-Methylnaphthalene	0.16	0.14	0.30	J	µg/L	1	12/13/2022 1:34:00 AM	71974
Acenaphthene	ND	0.14	0.30		µg/L	1	12/13/2022 1:34:00 AM	71974
Fluorene	0.22	0.095	0.30	J	µg/L	1	12/13/2022 1:34:00 AM	71974
Phenanthrene	0.44	0.16	0.30		µg/L	1	12/13/2022 1:34:00 AM	71974
Anthracene	0.20	0.14	0.30	J	µg/L	1	12/13/2022 1:34:00 AM	71974
Fluoranthene	0.48	0.14	0.30		µg/L	1	12/13/2022 1:34:00 AM	71974
Pyrene	0.34	0.32	1.0	J	µg/L	1	12/13/2022 1:34:00 AM	71974
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	12/13/2022 1:34:00 AM	71974
Chrysene	ND	0.25	0.30		µg/L	1	12/13/2022 1:34:00 AM	71974
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	12/13/2022 1:34:00 AM	71974
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	12/13/2022 1:34:00 AM	71974

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-64
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/7/2022 9:40:00 AM
Lab ID: 2212442-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	42.1	0	15-108		%Rec	1	12/13/2022 1:34:00 AM	71974
Surr: 2-Fluorobiphenyl	35.2	0	15-107		%Rec	1	12/13/2022 1:34:00 AM	71974
Surr: 4-Terphenyl-d14	69.9	0	15-166		%Rec	1	12/13/2022 1:34:00 AM	71974

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-64
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/7/2022 9:40:00 AM
Lab ID: 2212442-002D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.30	0.0016	0.0030		mg/L	1	12/12/2022 6:20:01 PM	71980
Beryllium	ND	0.00060	0.0020		mg/L	1	12/12/2022 6:20:01 PM	71980
Cadmium	ND	0.0018	0.0020		mg/L	1	12/12/2022 6:20:01 PM	71980
Chromium	ND	0.0020	0.0060		mg/L	1	12/12/2022 6:20:01 PM	71980
Cobalt	ND	0.0035	0.0060		mg/L	1	12/12/2022 6:20:01 PM	71980
Nickel	ND	0.0053	0.010		mg/L	1	12/12/2022 6:20:01 PM	71980
Silver	ND	0.0018	0.0050		mg/L	1	12/12/2022 6:20:01 PM	71980
Vanadium	0.0058	0.0035	0.050	J	mg/L	1	12/12/2022 6:20:01 PM	71980
Zinc	ND	0.0039	0.010		mg/L	1	12/12/2022 6:20:01 PM	71980
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	12/19/2022 2:03:03 PM	71980
Arsenic	0.0022	0.00022	0.0010		mg/L	1	12/12/2022 3:41:37 PM	71980
Lead	0.00036	0.00019	0.00050	J	mg/L	1	12/12/2022 3:41:37 PM	71980
Selenium	0.0010	0.00089	0.0010		mg/L	1	12/12/2022 3:41:37 PM	71980
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/16/2022 3:00:29 PM	72128

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-64
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/7/2022 9:40:00 AM
Lab ID: 2212442-002E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **VP**	
Barium	0.29	0.0011	0.0020		mg/L	1	12/22/2022 4:59:50 PM	B93514
Beryllium	ND	0.00059	0.0020		mg/L	1	12/22/2022 4:59:50 PM	B93514
Cadmium	ND	0.00098	0.0020		mg/L	1	12/22/2022 4:59:50 PM	B93514
Chromium	ND	0.0020	0.0060		mg/L	1	12/22/2022 4:59:50 PM	B93514
Cobalt	ND	0.0024	0.0060		mg/L	1	12/22/2022 4:59:50 PM	B93514
Nickel	ND	0.0033	0.010		mg/L	1	12/22/2022 4:59:50 PM	B93514
Silver	ND	0.0013	0.0050		mg/L	1	12/22/2022 4:59:50 PM	B93514
Vanadium	0.0048	0.0017	0.050	J	mg/L	1	12/22/2022 4:59:50 PM	B93514
Zinc	ND	0.0032	0.010		mg/L	1	12/22/2022 4:59:50 PM	B93514
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	12/15/2022 11:22:50 AM	A93335
Arsenic	0.0025	0.00012	0.0010		mg/L	1	12/15/2022 11:22:50 AM	A93335
Lead	0.000087	0.000057	0.00050	J	mg/L	1	12/15/2022 11:22:50 AM	A93335
Selenium	ND	0.00034	0.0010		mg/L	1	12/15/2022 11:22:50 AM	A93335
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/16/2022 3:02:38 PM	72128

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-12
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/7/2022 10:05:00 AM
Lab ID: 2212442-003A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **CCM**	
Gasoline Range Organics (GRO)	1.0	0.0090	0.050		mg/L	1	12/13/2022 7:06:00 PM	R93213
Surr: BFB	101	0	70-130		%Rec	1	12/13/2022 7:06:00 PM	R93213
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	200	2.3	10		µg/L	10	12/16/2022 4:08:55 PM	R93377
Toluene	86	0.20	1.0		µg/L	1	12/16/2022 5:10:46 AM	R93331
Ethylbenzene	5.8	0.21	1.0		µg/L	1	12/16/2022 5:10:46 AM	R93331
Methyl tert-butyl ether (MTBE)	1.9	0.39	1.0		µg/L	1	12/16/2022 5:10:46 AM	R93331
1,2,4-Trimethylbenzene	1.5	0.12	1.0		µg/L	1	12/16/2022 5:10:46 AM	R93331
1,3,5-Trimethylbenzene	0.69	0.18	1.0	J	µg/L	1	12/16/2022 5:10:46 AM	R93331
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	12/16/2022 5:10:46 AM	R93331
Acetone	ND	2.5	10		µg/L	1	12/16/2022 5:10:46 AM	R93331
Bromomethane	ND	0.85	3.0		µg/L	1	12/16/2022 5:10:46 AM	R93331
2-Butanone	ND	2.0	10		µg/L	1	12/16/2022 5:10:46 AM	R93331
Carbon disulfide	ND	0.59	10		µg/L	1	12/16/2022 5:10:46 AM	R93331
Chlorobenzene	ND	0.16	1.0		µg/L	1	12/16/2022 5:10:46 AM	R93331
Chloroform	ND	0.13	1.0		µg/L	1	12/16/2022 5:10:46 AM	R93331
Chloromethane	ND	0.41	3.0		µg/L	1	12/16/2022 5:10:46 AM	R93331
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	12/16/2022 5:10:46 AM	R93331
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	12/16/2022 5:10:46 AM	R93331
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	12/16/2022 5:10:46 AM	R93331
Isopropylbenzene	ND	0.18	1.0		µg/L	1	12/16/2022 5:10:46 AM	R93331
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	12/16/2022 5:10:46 AM	R93331
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/16/2022 5:10:46 AM	R93331
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/16/2022 5:10:46 AM	R93331
n-Propylbenzene	ND	0.18	1.0		µg/L	1	12/16/2022 5:10:46 AM	R93331
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	12/16/2022 5:10:46 AM	R93331
Styrene	ND	0.14	1.0		µg/L	1	12/16/2022 5:10:46 AM	R93331
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/16/2022 5:10:46 AM	R93331
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	12/16/2022 5:10:46 AM	R93331
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	12/16/2022 5:10:46 AM	R93331
Vinyl chloride	ND	0.32	1.0		µg/L	1	12/16/2022 5:10:46 AM	R93331
Xylenes, Total	78	0.37	1.5		µg/L	1	12/16/2022 5:10:46 AM	R93331
Surr: 1,2-Dichloroethane-d4	90.8	0	70-130		%Rec	1	12/16/2022 5:10:46 AM	R93331
Surr: 4-Bromofluorobenzene	97.9	0	70-130		%Rec	1	12/16/2022 5:10:46 AM	R93331
Surr: Dibromofluoromethane	81.9	0	70-130		%Rec	1	12/16/2022 5:10:46 AM	R93331
Surr: Toluene-d8	105	0	70-130		%Rec	1	12/16/2022 5:10:46 AM	R93331

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-12
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/7/2022 10:05:00 AM
Lab ID: 2212442-003B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	12/21/2022 7:26:31 AM	72189

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-12
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/7/2022 10:05:00 AM
Lab ID: 2212442-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **DGH**	
Diesel Range Organics (DRO)	0.022	0.016	0.064	JB	mg/L	1	12/14/2022 7:01:23 PM	71994
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/14/2022 7:01:23 PM	71994
Surr: DNOP	99.9	0	15.9-177		%Rec	1	12/14/2022 7:01:23 PM	71994
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	12/13/2022 8:56:33 PM	71974
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	12/13/2022 8:56:33 PM	71974
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	12/13/2022 8:56:33 PM	71974
Di-n-octyl phthalate	ND	12	20		µg/L	1	12/13/2022 8:56:33 PM	71974
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	12/13/2022 8:56:33 PM	71974
Diethyl phthalate	ND	6.0	10		µg/L	1	12/13/2022 8:56:33 PM	71974
Dimethyl phthalate	ND	6.0	10		µg/L	1	12/13/2022 8:56:33 PM	71974
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	12/13/2022 8:56:33 PM	71974
2,4-Dinitrophenol	ND	16	20		µg/L	1	12/13/2022 8:56:33 PM	71974
2-Methylphenol	ND	5.0	10		µg/L	1	12/13/2022 8:56:33 PM	71974
3+4-Methylphenol	ND	5.1	10		µg/L	1	12/13/2022 8:56:33 PM	71974
Phenol	ND	18	20		µg/L	1	12/13/2022 8:56:33 PM	71974
Pyridine	ND	14	40		µg/L	1	12/13/2022 8:56:33 PM	71974
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	12/13/2022 8:56:33 PM	71974
Surr: 2-Fluorophenol	36.9	0	15-84.5		%Rec	1	12/13/2022 8:56:33 PM	71974
Surr: Phenol-d5	28.4	0	15-67		%Rec	1	12/13/2022 8:56:33 PM	71974
Surr: 2,4,6-Tribromophenol	50.6	0	15-108		%Rec	1	12/13/2022 8:56:33 PM	71974
Surr: Nitrobenzene-d5	52.4	0	16.8-112		%Rec	1	12/13/2022 8:56:33 PM	71974
Surr: 2-Fluorobiphenyl	45.0	0	15-101		%Rec	1	12/13/2022 8:56:33 PM	71974
Surr: 4-Terphenyl-d14	76.8	0	34.4-134		%Rec	1	12/13/2022 8:56:33 PM	71974
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	12/13/2022 2:17:00 AM	71974
Naphthalene	ND	0.20	0.30		µg/L	1	12/13/2022 2:17:00 AM	71974
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	12/13/2022 2:17:00 AM	71974
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	12/13/2022 2:17:00 AM	71974
Acenaphthene	ND	0.14	0.30		µg/L	1	12/13/2022 2:17:00 AM	71974
Fluorene	ND	0.095	0.30		µg/L	1	12/13/2022 2:17:00 AM	71974
Phenanthrene	ND	0.16	0.30		µg/L	1	12/13/2022 2:17:00 AM	71974
Anthracene	ND	0.14	0.30		µg/L	1	12/13/2022 2:17:00 AM	71974
Fluoranthene	ND	0.14	0.30		µg/L	1	12/13/2022 2:17:00 AM	71974
Pyrene	ND	0.32	1.0		µg/L	1	12/13/2022 2:17:00 AM	71974
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	12/13/2022 2:17:00 AM	71974
Chrysene	ND	0.25	0.30		µg/L	1	12/13/2022 2:17:00 AM	71974
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	12/13/2022 2:17:00 AM	71974
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	12/13/2022 2:17:00 AM	71974

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-12
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/7/2022 10:05:00 AM
Lab ID: 2212442-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	51.4	0	15-108		%Rec	1	12/13/2022 2:17:00 AM	71974
Surr: 2-Fluorobiphenyl	45.2	0	15-107		%Rec	1	12/13/2022 2:17:00 AM	71974
Surr: 4-Terphenyl-d14	97.9	0	15-166		%Rec	1	12/13/2022 2:17:00 AM	71974

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-12
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/7/2022 10:05:00 AM
Lab ID: 2212442-003D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.019	0.0016	0.0030		mg/L	1	12/12/2022 6:24:45 PM	71980
Beryllium	ND	0.00060	0.0020		mg/L	1	12/12/2022 6:24:45 PM	71980
Cadmium	ND	0.0018	0.0020		mg/L	1	12/12/2022 6:24:45 PM	71980
Chromium	ND	0.0020	0.0060		mg/L	1	12/12/2022 6:24:45 PM	71980
Cobalt	ND	0.0035	0.0060		mg/L	1	12/12/2022 6:24:45 PM	71980
Nickel	ND	0.0053	0.010		mg/L	1	12/12/2022 6:24:45 PM	71980
Silver	ND	0.0018	0.0050		mg/L	1	12/12/2022 6:24:45 PM	71980
Vanadium	0.012	0.0035	0.050	J	mg/L	1	12/12/2022 6:24:45 PM	71980
Zinc	ND	0.0039	0.010		mg/L	1	12/12/2022 6:24:45 PM	71980
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	12/19/2022 2:05:29 PM	71980
Arsenic	0.0015	0.00022	0.0010		mg/L	1	12/12/2022 3:48:59 PM	71980
Lead	ND	0.00019	0.00050		mg/L	1	12/12/2022 3:48:59 PM	71980
Selenium	ND	0.00089	0.0010		mg/L	1	12/12/2022 3:48:59 PM	71980
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00013	0.000091	0.00020	J	mg/L	1	12/16/2022 3:04:47 PM	72128

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-12
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/7/2022 10:05:00 AM
Lab ID: 2212442-003E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **VP**	
Barium	0.020	0.0011	0.0020		mg/L	1	12/22/2022 5:03:23 PM	B93514
Beryllium	ND	0.00059	0.0020		mg/L	1	12/22/2022 5:03:23 PM	B93514
Cadmium	ND	0.00098	0.0020		mg/L	1	12/22/2022 5:03:23 PM	B93514
Chromium	ND	0.0020	0.0060		mg/L	1	12/22/2022 5:03:23 PM	B93514
Cobalt	ND	0.0024	0.0060		mg/L	1	12/22/2022 5:03:23 PM	B93514
Nickel	ND	0.0033	0.010		mg/L	1	12/22/2022 5:03:23 PM	B93514
Silver	ND	0.0013	0.0050		mg/L	1	12/22/2022 5:03:23 PM	B93514
Vanadium	0.013	0.0017	0.050	J	mg/L	1	12/22/2022 5:03:23 PM	B93514
Zinc	0.011	0.0032	0.010		mg/L	1	12/22/2022 5:03:23 PM	B93514
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	12/15/2022 11:25:31 AM	A93335
Arsenic	0.0018	0.00012	0.0010		mg/L	1	12/15/2022 11:25:31 AM	A93335
Lead	0.000071	0.000057	0.00050	J	mg/L	1	12/15/2022 11:25:31 AM	A93335
Selenium	ND	0.00034	0.0010		mg/L	1	12/15/2022 11:25:31 AM	A93335
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00013	0.000091	0.00020	J	mg/L	1	12/16/2022 3:17:42 PM	72128

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-12A
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/7/2022 10:20:00 AM
Lab ID: 2212442-004A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **CCM**	
Gasoline Range Organics (GRO)	14	0.45	2.5		mg/L	50	12/13/2022 7:25:00 PM	R93213
Surr: BFB	143	0	70-130	S	%Rec	50	12/13/2022 7:25:00 PM	R93213
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	960	11	50		µg/L	50	12/16/2022 4:37:33 PM	R93377
Toluene	39	1.0	5.0		µg/L	5	12/16/2022 5:39:05 AM	R93331
Ethylbenzene	310	1.1	5.0		µg/L	5	12/16/2022 5:39:05 AM	R93331
Methyl tert-butyl ether (MTBE)	ND	2.0	5.0		µg/L	5	12/16/2022 5:39:05 AM	R93331
1,2,4-Trimethylbenzene	710	6.1	50		µg/L	50	12/16/2022 4:37:33 PM	R93377
1,3,5-Trimethylbenzene	260	0.91	5.0		µg/L	5	12/16/2022 5:39:05 AM	R93331
1,2-Dichloroethane (EDC)	ND	1.3	5.0		µg/L	5	12/16/2022 5:39:05 AM	R93331
Acetone	100	13	50		µg/L	5	12/16/2022 5:39:05 AM	R93331
Bromomethane	ND	4.3	15		µg/L	5	12/16/2022 5:39:05 AM	R93331
2-Butanone	55	10	50		µg/L	5	12/16/2022 5:39:05 AM	R93331
Carbon disulfide	ND	3.0	50		µg/L	5	12/16/2022 5:39:05 AM	R93331
Chlorobenzene	ND	0.78	5.0		µg/L	5	12/16/2022 5:39:05 AM	R93331
Chloroform	ND	0.67	5.0		µg/L	5	12/16/2022 5:39:05 AM	R93331
Chloromethane	ND	2.1	15		µg/L	5	12/16/2022 5:39:05 AM	R93331
cis-1,2-DCE	ND	1.9	5.0		µg/L	5	12/16/2022 5:39:05 AM	R93331
1,1-Dichloroethane	ND	1.4	5.0		µg/L	5	12/16/2022 5:39:05 AM	R93331
1,1-Dichloroethene	ND	1.0	5.0		µg/L	5	12/16/2022 5:39:05 AM	R93331
Isopropylbenzene	110	0.91	5.0		µg/L	5	12/16/2022 5:39:05 AM	R93331
4-Isopropyltoluene	31	1.0	5.0		µg/L	5	12/16/2022 5:39:05 AM	R93331
Methylene Chloride	ND	2.5	15		µg/L	5	12/16/2022 5:39:05 AM	R93331
n-Butylbenzene	19	1.3	15		µg/L	5	12/16/2022 5:39:05 AM	R93331
n-Propylbenzene	86	0.91	5.0		µg/L	5	12/16/2022 5:39:05 AM	R93331
sec-Butylbenzene	21	0.72	5.0		µg/L	5	12/16/2022 5:39:05 AM	R93331
Styrene	ND	0.68	5.0		µg/L	5	12/16/2022 5:39:05 AM	R93331
Tetrachloroethene (PCE)	ND	1.8	5.0		µg/L	5	12/16/2022 5:39:05 AM	R93331
1,1,1-Trichloroethane	ND	1.5	5.0		µg/L	5	12/16/2022 5:39:05 AM	R93331
Trichloroethene (TCE)	ND	1.0	5.0		µg/L	5	12/16/2022 5:39:05 AM	R93331
Vinyl chloride	ND	1.6	5.0		µg/L	5	12/16/2022 5:39:05 AM	R93331
Xylenes, Total	1800	19	75		µg/L	50	12/16/2022 4:37:33 PM	R93377
Surr: 1,2-Dichloroethane-d4	122	0	70-130		%Rec	5	12/16/2022 5:39:05 AM	R93331
Surr: 4-Bromofluorobenzene	72.0	0	70-130		%Rec	5	12/16/2022 5:39:05 AM	R93331
Surr: Dibromofluoromethane	82.6	0	70-130		%Rec	5	12/16/2022 5:39:05 AM	R93331
Surr: Toluene-d8	107	0	70-130		%Rec	5	12/16/2022 5:39:05 AM	R93331

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-12A
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/7/2022 10:20:00 AM
Lab ID: 2212442-004B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	12/21/2022 7:56:08 AM	72189

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-12A
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/7/2022 10:20:00 AM
Lab ID: 2212442-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **JME**	
Diesel Range Organics (DRO)	5.8	0.16	0.64	B	mg/L	10	12/16/2022 2:11:37 PM	71994
Motor Oil Range Organics (MRO)	ND	0.52	0.80	D	mg/L	10	12/16/2022 2:11:37 PM	71994
Surr: DNOP	0	0	15.9-177	S	%Rec	10	12/16/2022 2:11:37 PM	71994
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	12/16/2022 1:54:30 PM	72036
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	12/16/2022 1:54:30 PM	72036
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	12/16/2022 1:54:30 PM	72036
Di-n-octyl phthalate	ND	12	20		µg/L	1	12/16/2022 1:54:30 PM	72036
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	12/16/2022 1:54:30 PM	72036
Diethyl phthalate	ND	6.0	10		µg/L	1	12/16/2022 1:54:30 PM	72036
Dimethyl phthalate	ND	6.0	10		µg/L	1	12/16/2022 1:54:30 PM	72036
2,4-Dimethylphenol	7.2	5.8	10	J	µg/L	1	12/16/2022 1:54:30 PM	72036
2,4-Dinitrophenol	ND	16	20		µg/L	1	12/16/2022 1:54:30 PM	72036
2-Methylphenol	ND	5.0	10		µg/L	1	12/16/2022 1:54:30 PM	72036
3+4-Methylphenol	ND	5.1	10		µg/L	1	12/16/2022 1:54:30 PM	72036
Phenol	ND	18	20		µg/L	1	12/16/2022 1:54:30 PM	72036
Pyridine	ND	14	40		µg/L	1	12/16/2022 1:54:30 PM	72036
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	12/16/2022 1:54:30 PM	72036
Surr: 2-Fluorophenol	0	0	15-84.5	S	%Rec	1	12/16/2022 1:54:30 PM	72036
Surr: Phenol-d5	0	0	15-67	S	%Rec	1	12/16/2022 1:54:30 PM	72036
Surr: 2,4,6-Tribromophenol	39.0	0	15-108		%Rec	1	12/16/2022 1:54:30 PM	72036
Surr: Nitrobenzene-d5	31.6	0	16.8-112		%Rec	1	12/16/2022 1:54:30 PM	72036
Surr: 2-Fluorobiphenyl	27.9	0	15-101		%Rec	1	12/16/2022 1:54:30 PM	72036
Surr: 4-Terphenyl-d14	37.7	0	34.4-134		%Rec	1	12/16/2022 1:54:30 PM	72036
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	5.3	0.11	1.0		µg/L	1	12/16/2022 1:57:00 AM	72036
Naphthalene	3.4	0.20	0.30		µg/L	1	12/16/2022 1:57:00 AM	72036
1-Methylnaphthalene	1.3	0.15	0.30		µg/L	1	12/16/2022 1:57:00 AM	72036
2-Methylnaphthalene	0.68	0.14	0.30		µg/L	1	12/16/2022 1:57:00 AM	72036
Acenaphthene	ND	0.14	0.30		µg/L	1	12/16/2022 1:57:00 AM	72036
Fluorene	0.12	0.095	0.30	J	µg/L	1	12/16/2022 1:57:00 AM	72036
Phenanthrene	ND	0.16	0.30		µg/L	1	12/16/2022 1:57:00 AM	72036
Anthracene	ND	0.14	0.30		µg/L	1	12/16/2022 1:57:00 AM	72036
Fluoranthene	ND	0.14	0.30		µg/L	1	12/16/2022 1:57:00 AM	72036
Pyrene	ND	0.32	1.0		µg/L	1	12/16/2022 1:57:00 AM	72036
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	12/16/2022 1:57:00 AM	72036
Chrysene	ND	0.25	0.30		µg/L	1	12/16/2022 1:57:00 AM	72036
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	12/16/2022 1:57:00 AM	72036
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	12/16/2022 1:57:00 AM	72036

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-12A
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/7/2022 10:20:00 AM
Lab ID: 2212442-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	41.6	0	15-108		%Rec	1	12/16/2022 1:57:00 AM	72036
Surr: 2-Fluorobiphenyl	25.5	0	15-107		%Rec	1	12/16/2022 1:57:00 AM	72036
Surr: 4-Terphenyl-d14	48.6	0	15-166		%Rec	1	12/16/2022 1:57:00 AM	72036

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-12A
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/7/2022 10:20:00 AM
Lab ID: 2212442-004D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.24	0.0016	0.0030		mg/L	1	12/12/2022 6:26:20 PM	71980
Beryllium	ND	0.00060	0.0020		mg/L	1	12/12/2022 6:26:20 PM	71980
Cadmium	ND	0.0018	0.0020		mg/L	1	12/12/2022 6:26:20 PM	71980
Chromium	ND	0.0020	0.0060		mg/L	1	12/12/2022 6:26:20 PM	71980
Cobalt	0.017	0.0035	0.0060		mg/L	1	12/12/2022 6:26:20 PM	71980
Nickel	ND	0.0053	0.010		mg/L	1	12/12/2022 6:26:20 PM	71980
Silver	ND	0.0018	0.0050		mg/L	1	12/12/2022 6:26:20 PM	71980
Vanadium	ND	0.0035	0.050		mg/L	1	12/12/2022 6:26:20 PM	71980
Zinc	0.0056	0.0039	0.010	J	mg/L	1	12/12/2022 6:26:20 PM	71980
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	12/19/2022 2:07:55 PM	71980
Arsenic	0.016	0.00022	0.0010	*	mg/L	1	12/12/2022 3:51:25 PM	71980
Lead	0.0054	0.00019	0.00050		mg/L	1	12/12/2022 3:51:25 PM	71980
Selenium	0.0016	0.00089	0.0010		mg/L	1	12/12/2022 3:51:25 PM	71980
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/16/2022 4:31:40 PM	72128

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-12A
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/7/2022 10:20:00 AM
Lab ID: 2212442-004E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **VP**	
Barium	0.17	0.0011	0.0020		mg/L	1	12/22/2022 5:08:38 PM	B93514
Beryllium	ND	0.00059	0.0020		mg/L	1	12/22/2022 5:08:38 PM	B93514
Cadmium	ND	0.00098	0.0020		mg/L	1	12/22/2022 5:08:38 PM	B93514
Chromium	ND	0.0020	0.0060		mg/L	1	12/22/2022 5:08:38 PM	B93514
Cobalt	ND	0.0024	0.0060		mg/L	1	12/22/2022 5:08:38 PM	B93514
Nickel	0.0055	0.0033	0.010	J	mg/L	1	12/22/2022 5:08:38 PM	B93514
Silver	0.0020	0.0013	0.0050	J	mg/L	1	12/22/2022 5:08:38 PM	B93514
Vanadium	ND	0.0017	0.050		mg/L	1	12/22/2022 5:08:38 PM	B93514
Zinc	0.0080	0.0032	0.010	J	mg/L	1	12/22/2022 5:08:38 PM	B93514
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	0.0010	0.00044	0.0010		mg/L	1	12/15/2022 11:28:13 AM	A93335
Arsenic	0.015	0.00012	0.0010	*	mg/L	1	12/15/2022 11:28:13 AM	A93335
Lead	0.00065	0.000057	0.00050		mg/L	1	12/15/2022 11:28:13 AM	A93335
Selenium	0.0020	0.00034	0.0010		mg/L	1	12/15/2022 11:28:13 AM	A93335
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/16/2022 4:41:04 PM	72128

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-63
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/7/2022 10:35:00 AM
Lab ID: 2212442-005A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **CCM**	
Gasoline Range Organics (GRO)	26	0.45	2.5		mg/L	50	12/13/2022 7:45:00 PM	R93213
Surr: BFB	115	0	70-130		%Rec	50	12/13/2022 7:45:00 PM	R93213
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	9600	110	500		µg/L	500	12/16/2022 5:06:09 PM	R93377
Toluene	42	10	50	J	µg/L	50	12/16/2022 6:07:28 AM	R93331
Ethylbenzene	1300	11	50		µg/L	50	12/16/2022 6:07:28 AM	R93331
Methyl tert-butyl ether (MTBE)	ND	20	50		µg/L	50	12/16/2022 6:07:28 AM	R93331
1,2,4-Trimethylbenzene	ND	6.1	50		µg/L	50	12/16/2022 6:07:28 AM	R93331
1,3,5-Trimethylbenzene	ND	9.1	50		µg/L	50	12/16/2022 6:07:28 AM	R93331
1,2-Dichloroethane (EDC)	ND	13	50		µg/L	50	12/16/2022 6:07:28 AM	R93331
Acetone	ND	130	500		µg/L	50	12/16/2022 6:07:28 AM	R93331
Bromomethane	ND	43	150		µg/L	50	12/16/2022 6:07:28 AM	R93331
2-Butanone	ND	100	500		µg/L	50	12/16/2022 6:07:28 AM	R93331
Carbon disulfide	ND	30	500		µg/L	50	12/16/2022 6:07:28 AM	R93331
Chlorobenzene	ND	7.8	50		µg/L	50	12/16/2022 6:07:28 AM	R93331
Chloroform	ND	6.7	50		µg/L	50	12/16/2022 6:07:28 AM	R93331
Chloromethane	ND	21	150		µg/L	50	12/16/2022 6:07:28 AM	R93331
cis-1,2-DCE	ND	19	50		µg/L	50	12/16/2022 6:07:28 AM	R93331
1,1-Dichloroethane	ND	14	50		µg/L	50	12/16/2022 6:07:28 AM	R93331
1,1-Dichloroethene	ND	10	50		µg/L	50	12/16/2022 6:07:28 AM	R93331
Isopropylbenzene	59	9.1	50		µg/L	50	12/16/2022 6:07:28 AM	R93331
4-Isopropyltoluene	ND	10	50		µg/L	50	12/16/2022 6:07:28 AM	R93331
Methylene Chloride	ND	25	150		µg/L	50	12/16/2022 6:07:28 AM	R93331
n-Butylbenzene	ND	13	150		µg/L	50	12/16/2022 6:07:28 AM	R93331
n-Propylbenzene	160	9.1	50		µg/L	50	12/16/2022 6:07:28 AM	R93331
sec-Butylbenzene	ND	7.2	50		µg/L	50	12/16/2022 6:07:28 AM	R93331
Styrene	ND	6.8	50		µg/L	50	12/16/2022 6:07:28 AM	R93331
Tetrachloroethene (PCE)	ND	18	50		µg/L	50	12/16/2022 6:07:28 AM	R93331
1,1,1-Trichloroethane	ND	15	50		µg/L	50	12/16/2022 6:07:28 AM	R93331
Trichloroethene (TCE)	ND	10	50		µg/L	50	12/16/2022 6:07:28 AM	R93331
Vinyl chloride	ND	16	50		µg/L	50	12/16/2022 6:07:28 AM	R93331
Xylenes, Total	130	19	75		µg/L	50	12/16/2022 6:07:28 AM	R93331
Surr: 1,2-Dichloroethane-d4	95.4	0	70-130		%Rec	50	12/16/2022 6:07:28 AM	R93331
Surr: 4-Bromofluorobenzene	83.2	0	70-130		%Rec	50	12/16/2022 6:07:28 AM	R93331
Surr: Dibromofluoromethane	93.5	0	70-130		%Rec	50	12/16/2022 6:07:28 AM	R93331
Surr: Toluene-d8	107	0	70-130		%Rec	50	12/16/2022 6:07:28 AM	R93331

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-63
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/7/2022 10:35:00 AM
Lab ID: 2212442-005B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	12/21/2022 8:24:24 AM	72189

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-63
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/7/2022 10:35:00 AM
Lab ID: 2212442-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **JME**	
Diesel Range Organics (DRO)	2.8	0.016	0.064	B	mg/L	1	12/16/2022 9:51:16 AM	72049
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/16/2022 9:51:16 AM	72049
Surr: DNOP	102	0	15.9-177		%Rec	1	12/16/2022 9:51:16 AM	72049
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	12/16/2022 2:35:43 PM	72036
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	12/16/2022 2:35:43 PM	72036
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	12/16/2022 2:35:43 PM	72036
Di-n-octyl phthalate	ND	12	20		µg/L	1	12/16/2022 2:35:43 PM	72036
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	12/16/2022 2:35:43 PM	72036
Diethyl phthalate	ND	6.0	10		µg/L	1	12/16/2022 2:35:43 PM	72036
Dimethyl phthalate	ND	6.0	10		µg/L	1	12/16/2022 2:35:43 PM	72036
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	12/16/2022 2:35:43 PM	72036
2,4-Dinitrophenol	ND	16	20		µg/L	1	12/16/2022 2:35:43 PM	72036
1-Methylnaphthalene	41	4.3	5.0		µg/L	1	12/16/2022 2:35:43 PM	72036
2-Methylnaphthalene	58	4.2	5.0		µg/L	1	12/16/2022 2:35:43 PM	72036
2-Methylphenol	ND	5.0	10		µg/L	1	12/16/2022 2:35:43 PM	72036
3+4-Methylphenol	ND	5.1	10		µg/L	1	12/16/2022 2:35:43 PM	72036
Naphthalene	140	3.2	5.0		µg/L	1	12/16/2022 2:35:43 PM	72036
Phenol	21	18	20		µg/L	1	12/16/2022 2:35:43 PM	72036
Pyridine	ND	14	40		µg/L	1	12/16/2022 2:35:43 PM	72036
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	12/16/2022 2:35:43 PM	72036
Surr: 2-Fluorophenol	34.2	0	15-84.5		%Rec	1	12/16/2022 2:35:43 PM	72036
Surr: Phenol-d5	26.4	0	15-67		%Rec	1	12/16/2022 2:35:43 PM	72036
Surr: 2,4,6-Tribromophenol	71.4	0	15-108		%Rec	1	12/16/2022 2:35:43 PM	72036
Surr: Nitrobenzene-d5	47.8	0	16.8-112		%Rec	1	12/16/2022 2:35:43 PM	72036
Surr: 2-Fluorobiphenyl	41.2	0	15-101		%Rec	1	12/16/2022 2:35:43 PM	72036
Surr: 4-Terphenyl-d14	68.3	0	34.4-134		%Rec	1	12/16/2022 2:35:43 PM	72036
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	1.1	0.11	1.0		µg/L	1	12/16/2022 2:40:00 AM	72036
Acenaphthene	0.74	0.14	0.30		µg/L	1	12/16/2022 2:40:00 AM	72036
Fluorene	1.3	0.095	0.30		µg/L	1	12/16/2022 2:40:00 AM	72036
Phenanthrene	1.1	0.16	0.30		µg/L	1	12/16/2022 2:40:00 AM	72036
Anthracene	0.18	0.14	0.30	J	µg/L	1	12/16/2022 2:40:00 AM	72036
Fluoranthene	ND	0.14	0.30		µg/L	1	12/16/2022 2:40:00 AM	72036
Pyrene	ND	0.32	1.0		µg/L	1	12/16/2022 2:40:00 AM	72036
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	12/16/2022 2:40:00 AM	72036
Chrysene	ND	0.25	0.30		µg/L	1	12/16/2022 2:40:00 AM	72036
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	12/16/2022 2:40:00 AM	72036
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	12/16/2022 2:40:00 AM	72036

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-63
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/7/2022 10:35:00 AM
Lab ID: 2212442-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	61.1	0	15-108		%Rec	1	12/16/2022 2:40:00 AM	72036
Surr: 2-Fluorobiphenyl	48.9	0	15-107		%Rec	1	12/16/2022 2:40:00 AM	72036
Surr: 4-Terphenyl-d14	96.5	0	15-166		%Rec	1	12/16/2022 2:40:00 AM	72036

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-63
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/7/2022 10:35:00 AM
Lab ID: 2212442-005D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	4.9	0.0079	0.015	*	mg/L	5	12/13/2022 6:31:14 PM	71980
Beryllium	ND	0.00060	0.0020		mg/L	1	12/12/2022 6:27:58 PM	71980
Cadmium	ND	0.0018	0.0020		mg/L	1	12/12/2022 6:27:58 PM	71980
Chromium	ND	0.0020	0.0060		mg/L	1	12/12/2022 6:27:58 PM	71980
Cobalt	0.013	0.0035	0.0060		mg/L	1	12/12/2022 6:27:58 PM	71980
Nickel	0.028	0.0053	0.010		mg/L	1	12/12/2022 6:27:58 PM	71980
Silver	ND	0.0018	0.0050		mg/L	1	12/12/2022 6:27:58 PM	71980
Vanadium	ND	0.0035	0.050		mg/L	1	12/12/2022 6:27:58 PM	71980
Zinc	ND	0.0039	0.010		mg/L	1	12/12/2022 6:27:58 PM	71980
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	12/19/2022 2:10:21 PM	71980
Arsenic	0.0064	0.00022	0.0010		mg/L	1	12/12/2022 3:53:52 PM	71980
Lead	ND	0.00019	0.00050		mg/L	1	12/12/2022 3:53:52 PM	71980
Selenium	ND	0.00089	0.0010		mg/L	1	12/12/2022 3:53:52 PM	71980
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/16/2022 4:43:13 PM	72128

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-63
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/7/2022 10:35:00 AM
Lab ID: 2212442-005E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **VP**	
Barium	4.8	0.0056	0.010	*	mg/L	5	12/22/2022 5:15:23 PM	B93514
Beryllium	ND	0.00059	0.0020		mg/L	1	12/22/2022 5:12:58 PM	B93514
Cadmium	ND	0.00098	0.0020		mg/L	1	12/22/2022 5:12:58 PM	B93514
Chromium	ND	0.0020	0.0060		mg/L	1	12/22/2022 5:12:58 PM	B93514
Cobalt	ND	0.0024	0.0060		mg/L	1	12/22/2022 5:12:58 PM	B93514
Nickel	0.022	0.0033	0.010		mg/L	1	12/22/2022 5:12:58 PM	B93514
Silver	ND	0.0013	0.0050		mg/L	1	12/22/2022 5:12:58 PM	B93514
Vanadium	ND	0.0017	0.050		mg/L	1	12/22/2022 5:12:58 PM	B93514
Zinc	0.0093	0.0032	0.010	J	mg/L	1	12/22/2022 5:12:58 PM	B93514
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	12/27/2022 12:14:38 PM	A93556
Arsenic	0.0057	0.00061	0.0050		mg/L	5	12/20/2022 2:02:19 PM	A93438
Lead	ND	0.000057	0.00050		mg/L	1	12/15/2022 11:39:15 AM	A93335
Selenium	ND	0.0017	0.0050		mg/L	5	12/20/2022 2:02:19 PM	A93438
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/16/2022 4:45:22 PM	72128

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-57
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/7/2022 11:05:00 AM
Lab ID: 2212442-006A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **CCM**	
Gasoline Range Organics (GRO)	27	0.45	2.5		mg/L	50	12/13/2022 8:05:00 PM	R93213
Surr: BFB	108	0	70-130		%Rec	50	12/13/2022 8:05:00 PM	R93213
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	14000	110	500		µg/L	500	12/16/2022 5:34:44 PM	R93377
Toluene	27	10	50	J	µg/L	50	12/16/2022 6:36:23 AM	R93331
Ethylbenzene	590	11	50		µg/L	50	12/16/2022 6:36:23 AM	R93331
Methyl tert-butyl ether (MTBE)	ND	20	50		µg/L	50	12/16/2022 6:36:23 AM	R93331
1,2,4-Trimethylbenzene	ND	6.1	50		µg/L	50	12/16/2022 6:36:23 AM	R93331
1,3,5-Trimethylbenzene	ND	9.1	50		µg/L	50	12/16/2022 6:36:23 AM	R93331
1,2-Dichloroethane (EDC)	ND	13	50		µg/L	50	12/16/2022 6:36:23 AM	R93331
Acetone	ND	130	500		µg/L	50	12/16/2022 6:36:23 AM	R93331
Bromomethane	ND	43	150		µg/L	50	12/16/2022 6:36:23 AM	R93331
2-Butanone	ND	100	500		µg/L	50	12/16/2022 6:36:23 AM	R93331
Carbon disulfide	ND	30	500		µg/L	50	12/16/2022 6:36:23 AM	R93331
Chlorobenzene	ND	7.8	50		µg/L	50	12/16/2022 6:36:23 AM	R93331
Chloroform	ND	6.7	50		µg/L	50	12/16/2022 6:36:23 AM	R93331
Chloromethane	ND	21	150		µg/L	50	12/16/2022 6:36:23 AM	R93331
cis-1,2-DCE	ND	19	50		µg/L	50	12/16/2022 6:36:23 AM	R93331
1,1-Dichloroethane	ND	14	50		µg/L	50	12/16/2022 6:36:23 AM	R93331
1,1-Dichloroethene	ND	10	50		µg/L	50	12/16/2022 6:36:23 AM	R93331
Isopropylbenzene	ND	9.1	50		µg/L	50	12/16/2022 6:36:23 AM	R93331
4-Isopropyltoluene	ND	10	50		µg/L	50	12/16/2022 6:36:23 AM	R93331
Methylene Chloride	ND	25	150		µg/L	50	12/16/2022 6:36:23 AM	R93331
n-Butylbenzene	ND	13	150		µg/L	50	12/16/2022 6:36:23 AM	R93331
n-Propylbenzene	41	9.1	50	J	µg/L	50	12/16/2022 6:36:23 AM	R93331
sec-Butylbenzene	ND	7.2	50		µg/L	50	12/16/2022 6:36:23 AM	R93331
Styrene	ND	6.8	50		µg/L	50	12/16/2022 6:36:23 AM	R93331
Tetrachloroethene (PCE)	ND	18	50		µg/L	50	12/16/2022 6:36:23 AM	R93331
1,1,1-Trichloroethane	ND	15	50		µg/L	50	12/16/2022 6:36:23 AM	R93331
Trichloroethene (TCE)	ND	10	50		µg/L	50	12/16/2022 6:36:23 AM	R93331
Vinyl chloride	ND	16	50		µg/L	50	12/16/2022 6:36:23 AM	R93331
Xylenes, Total	79	19	75		µg/L	50	12/16/2022 6:36:23 AM	R93331
Surr: 1,2-Dichloroethane-d4	99.2	0	70-130		%Rec	50	12/16/2022 6:36:23 AM	R93331
Surr: 4-Bromofluorobenzene	88.3	0	70-130		%Rec	50	12/16/2022 6:36:23 AM	R93331
Surr: Dibromofluoromethane	104	0	70-130		%Rec	50	12/16/2022 6:36:23 AM	R93331
Surr: Toluene-d8	103	0	70-130		%Rec	50	12/16/2022 6:36:23 AM	R93331

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-57
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/7/2022 11:05:00 AM
Lab ID: 2212442-006B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	12/21/2022 8:54:10 AM	72189

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-57
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/7/2022 11:05:00 AM
Lab ID: 2212442-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **JME**	
Diesel Range Organics (DRO)	5.0	0.16	0.64		mg/L	10	12/16/2022 1:47:49 PM	72049
Motor Oil Range Organics (MRO)	ND	0.52	0.80	D	mg/L	10	12/16/2022 1:47:49 PM	72049
Surr: DNOP	0	0	15.9-177	S	%Rec	10	12/16/2022 1:47:49 PM	72049
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	12/16/2022 3:16:53 PM	72036
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	12/16/2022 3:16:53 PM	72036
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	12/16/2022 3:16:53 PM	72036
Di-n-octyl phthalate	ND	12	20		µg/L	1	12/16/2022 3:16:53 PM	72036
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	12/16/2022 3:16:53 PM	72036
Diethyl phthalate	ND	6.0	10		µg/L	1	12/16/2022 3:16:53 PM	72036
Dimethyl phthalate	ND	6.0	10		µg/L	1	12/16/2022 3:16:53 PM	72036
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	12/16/2022 3:16:53 PM	72036
2,4-Dinitrophenol	ND	16	20		µg/L	1	12/16/2022 3:16:53 PM	72036
1-Methylnaphthalene	58	4.3	5.0		µg/L	1	12/16/2022 3:16:53 PM	72036
2-Methylnaphthalene	37	4.2	5.0		µg/L	1	12/16/2022 3:16:53 PM	72036
2-Methylphenol	ND	5.0	10		µg/L	1	12/16/2022 3:16:53 PM	72036
3+4-Methylphenol	ND	5.1	10		µg/L	1	12/16/2022 3:16:53 PM	72036
Naphthalene	81	3.2	5.0		µg/L	1	12/16/2022 3:16:53 PM	72036
Phenol	89	18	20		µg/L	1	12/16/2022 3:16:53 PM	72036
Pyridine	ND	14	40		µg/L	1	12/16/2022 3:16:53 PM	72036
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	12/16/2022 3:16:53 PM	72036
Surr: 2-Fluorophenol	34.5	0	15-84.5		%Rec	1	12/16/2022 3:16:53 PM	72036
Surr: Phenol-d5	27.5	0	15-67		%Rec	1	12/16/2022 3:16:53 PM	72036
Surr: 2,4,6-Tribromophenol	68.9	0	15-108		%Rec	1	12/16/2022 3:16:53 PM	72036
Surr: Nitrobenzene-d5	46.1	0	16.8-112		%Rec	1	12/16/2022 3:16:53 PM	72036
Surr: 2-Fluorobiphenyl	35.3	0	15-101		%Rec	1	12/16/2022 3:16:53 PM	72036
Surr: 4-Terphenyl-d14	76.8	0	34.4-134		%Rec	1	12/16/2022 3:16:53 PM	72036
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	3.1	0.11	1.0		µg/L	1	12/16/2022 3:24:00 AM	R93333
Acenaphthene	2.5	0.14	0.30		µg/L	1	12/16/2022 3:24:00 AM	R93333
Fluorene	4.8	0.095	0.30		µg/L	1	12/16/2022 3:24:00 AM	R93333
Phenanthrene	7.6	0.16	0.30		µg/L	1	12/16/2022 3:24:00 AM	R93333
Anthracene	0.22	0.14	0.30	J	µg/L	1	12/16/2022 3:24:00 AM	R93333
Fluoranthene	0.14	0.14	0.30	J	µg/L	1	12/16/2022 3:24:00 AM	R93333
Pyrene	ND	0.32	1.0		µg/L	1	12/16/2022 3:24:00 AM	R93333
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	12/16/2022 3:24:00 AM	R93333
Chrysene	ND	0.25	0.30		µg/L	1	12/16/2022 3:24:00 AM	R93333
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	12/16/2022 3:24:00 AM	R93333
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	12/16/2022 3:24:00 AM	R93333

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-57
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/7/2022 11:05:00 AM
Lab ID: 2212442-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	53.9	0	15-108		%Rec	1	12/16/2022 3:24:00 AM	R93333
Surr: 2-Fluorobiphenyl	40.3	0	15-107		%Rec	1	12/16/2022 3:24:00 AM	R93333
Surr: 4-Terphenyl-d14	88.7	0	15-166		%Rec	1	12/16/2022 3:24:00 AM	R93333

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-57
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/7/2022 11:05:00 AM
Lab ID: 2212442-006D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	14	0.16	0.30	*	mg/L	100	12/13/2022 6:39:09 PM	71980
Beryllium	0.0088	0.00060	0.0020	*	mg/L	1	12/12/2022 6:29:20 PM	71980
Cadmium	ND	0.0018	0.0020		mg/L	1	12/12/2022 6:29:20 PM	71980
Chromium	0.081	0.0020	0.0060		mg/L	1	12/12/2022 6:29:20 PM	71980
Cobalt	0.058	0.0035	0.0060		mg/L	1	12/12/2022 6:29:20 PM	71980
Nickel	0.094	0.0053	0.010		mg/L	1	12/12/2022 6:29:20 PM	71980
Silver	ND	0.0018	0.0050		mg/L	1	12/12/2022 6:29:20 PM	71980
Vanadium	0.13	0.0035	0.050		mg/L	1	12/12/2022 6:29:20 PM	71980
Zinc	0.091	0.0039	0.010		mg/L	1	12/12/2022 6:29:20 PM	71980
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	12/19/2022 2:12:46 PM	71980
Arsenic	0.020	0.00022	0.0010	*	mg/L	1	12/19/2022 2:12:46 PM	71980
Lead	0.11	0.00097	0.0025	*	mg/L	5	12/21/2022 3:38:46 PM	71980
Selenium	0.054	0.0044	0.0050	*	mg/L	5	12/21/2022 4:29:15 PM	71980
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00031	0.000091	0.00020		mg/L	1	12/20/2022 12:51:28 PM	72200

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-57
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/7/2022 11:05:00 AM
Lab ID: 2212442-006E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **VP**	
Barium	3.6	0.0056	0.010	*	mg/L	5	12/22/2022 5:22:28 PM	B93514
Beryllium	ND	0.00059	0.0020		mg/L	1	12/22/2022 5:20:19 PM	B93514
Cadmium	ND	0.00098	0.0020		mg/L	1	12/22/2022 5:20:19 PM	B93514
Chromium	ND	0.0020	0.0060		mg/L	1	12/22/2022 5:20:19 PM	B93514
Cobalt	ND	0.0024	0.0060		mg/L	1	12/22/2022 5:20:19 PM	B93514
Nickel	0.058	0.0033	0.010		mg/L	1	12/22/2022 5:20:19 PM	B93514
Silver	0.0016	0.0013	0.0050	J	mg/L	1	12/22/2022 5:20:19 PM	B93514
Vanadium	0.0030	0.0017	0.050	J	mg/L	1	12/22/2022 5:20:19 PM	B93514
Zinc	0.0099	0.0032	0.010	J	mg/L	1	12/22/2022 5:20:19 PM	B93514
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	0.0023	0.0022	0.0050	J	mg/L	5	12/27/2022 12:24:52 PM	A93556
Arsenic	0.0020	0.00061	0.0050	J	mg/L	5	12/20/2022 2:07:26 PM	A93438
Lead	ND	0.000057	0.00050		mg/L	1	12/15/2022 11:41:57 AM	A93335
Selenium	ND	0.0017	0.0050		mg/L	5	12/20/2022 2:07:26 PM	A93438
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00011	0.000091	0.00020	J	mg/L	1	12/16/2022 3:30:36 PM	72128

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-12-7-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/7/2022
Lab ID: 2212442-007A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **CCM**	
Gasoline Range Organics (GRO)	0.46	0.0090	0.050		mg/L	1	12/13/2022 8:24:00 PM	R93213
Surr: BFB	188	0	70-130	S	%Rec	1	12/13/2022 8:24:00 PM	R93213
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	4.9	0.45	2.0		µg/L	2	12/21/2022 6:21:01 PM	R93479
Toluene	ND	0.40	2.0		µg/L	2	12/21/2022 6:21:01 PM	R93479
Ethylbenzene	20	0.43	2.0		µg/L	2	12/21/2022 6:21:01 PM	R93479
Methyl tert-butyl ether (MTBE)	ND	0.79	2.0		µg/L	2	12/21/2022 6:21:01 PM	R93479
1,2,4-Trimethylbenzene	33	0.24	2.0		µg/L	2	12/21/2022 6:21:01 PM	R93479
1,3,5-Trimethylbenzene	1.7	0.36	2.0	J	µg/L	2	12/21/2022 6:21:01 PM	R93479
1,2-Dichloroethane (EDC)	ND	0.51	2.0		µg/L	2	12/21/2022 6:21:01 PM	R93479
Acetone	ND	5.0	20		µg/L	2	12/21/2022 6:21:01 PM	R93479
Bromomethane	ND	1.7	6.0		µg/L	2	12/21/2022 6:21:01 PM	R93479
2-Butanone	ND	4.1	20		µg/L	2	12/21/2022 6:21:01 PM	R93479
Carbon disulfide	ND	1.2	20		µg/L	2	12/21/2022 6:21:01 PM	R93479
Chlorobenzene	ND	0.31	2.0		µg/L	2	12/21/2022 6:21:01 PM	R93479
Chloroform	ND	0.27	2.0		µg/L	2	12/21/2022 6:21:01 PM	R93479
Chloromethane	ND	0.82	6.0		µg/L	2	12/21/2022 6:21:01 PM	R93479
cis-1,2-DCE	ND	0.78	2.0		µg/L	2	12/21/2022 6:21:01 PM	R93479
1,1-Dichloroethane	ND	0.55	2.0		µg/L	2	12/21/2022 6:21:01 PM	R93479
1,1-Dichloroethene	ND	0.40	2.0		µg/L	2	12/21/2022 6:21:01 PM	R93479
Isopropylbenzene	5.3	0.37	2.0		µg/L	2	12/21/2022 6:21:01 PM	R93479
4-Isopropyltoluene	1.0	0.40	2.0	J	µg/L	2	12/21/2022 6:21:01 PM	R93479
Methylene Chloride	ND	1.0	6.0		µg/L	2	12/21/2022 6:21:01 PM	R93479
n-Butylbenzene	ND	0.51	6.0		µg/L	2	12/21/2022 6:21:01 PM	R93479
n-Propylbenzene	2.3	0.36	2.0		µg/L	2	12/21/2022 6:21:01 PM	R93479
sec-Butylbenzene	2.0	0.29	2.0		µg/L	2	12/21/2022 6:21:01 PM	R93479
Styrene	ND	0.27	2.0		µg/L	2	12/21/2022 6:21:01 PM	R93479
Tetrachloroethene (PCE)	ND	0.71	2.0		µg/L	2	12/21/2022 6:21:01 PM	R93479
1,1,1-Trichloroethane	ND	0.60	2.0		µg/L	2	12/21/2022 6:21:01 PM	R93479
Trichloroethene (TCE)	ND	0.41	2.0		µg/L	2	12/21/2022 6:21:01 PM	R93479
Vinyl chloride	ND	0.64	2.0		µg/L	2	12/21/2022 6:21:01 PM	R93479
Xylenes, Total	2.4	0.74	3.0	J	µg/L	2	12/21/2022 6:21:01 PM	R93479
Surr: 1,2-Dichloroethane-d4	94.3	0	70-130		%Rec	2	12/21/2022 6:21:01 PM	R93479
Surr: 4-Bromofluorobenzene	95.0	0	70-130		%Rec	2	12/21/2022 6:21:01 PM	R93479
Surr: Dibromofluoromethane	88.0	0	70-130		%Rec	2	12/21/2022 6:21:01 PM	R93479
Surr: Toluene-d8	108	0	70-130		%Rec	2	12/21/2022 6:21:01 PM	R93479

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-12-7-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/7/2022
Lab ID: 2212442-007B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	12/21/2022 9:24:03 AM	72189

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-12-7-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/7/2022
Lab ID: 2212442-007C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **JME**	
Diesel Range Organics (DRO)	0.50	0.016	0.064	B	mg/L	1	12/16/2022 10:38:28 AM	72049
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/16/2022 10:38:28 AM	72049
Surr: DNOP	107	0	15.9-177		%Rec	1	12/16/2022 10:38:28 AM	72049
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	12/16/2022 3:57:44 PM	72036
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	12/16/2022 3:57:44 PM	72036
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	12/16/2022 3:57:44 PM	72036
Di-n-octyl phthalate	ND	12	20		µg/L	1	12/16/2022 3:57:44 PM	72036
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	12/16/2022 3:57:44 PM	72036
Diethyl phthalate	ND	6.0	10		µg/L	1	12/16/2022 3:57:44 PM	72036
Dimethyl phthalate	ND	6.0	10		µg/L	1	12/16/2022 3:57:44 PM	72036
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	12/16/2022 3:57:44 PM	72036
2,4-Dinitrophenol	ND	16	20		µg/L	1	12/16/2022 3:57:44 PM	72036
2-Methylphenol	ND	5.0	10		µg/L	1	12/16/2022 3:57:44 PM	72036
3+4-Methylphenol	ND	5.1	10		µg/L	1	12/16/2022 3:57:44 PM	72036
Phenol	ND	18	20		µg/L	1	12/16/2022 3:57:44 PM	72036
Pyridine	ND	14	40		µg/L	1	12/16/2022 3:57:44 PM	72036
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	12/16/2022 3:57:44 PM	72036
Surr: 2-Fluorophenol	33.3	0	15-84.5		%Rec	1	12/16/2022 3:57:44 PM	72036
Surr: Phenol-d5	25.4	0	15-67		%Rec	1	12/16/2022 3:57:44 PM	72036
Surr: 2,4,6-Tribromophenol	71.7	0	15-108		%Rec	1	12/16/2022 3:57:44 PM	72036
Surr: Nitrobenzene-d5	47.5	0	16.8-112		%Rec	1	12/16/2022 3:57:44 PM	72036
Surr: 2-Fluorobiphenyl	39.1	0	15-101		%Rec	1	12/16/2022 3:57:44 PM	72036
Surr: 4-Terphenyl-d14	74.3	0	34.4-134		%Rec	1	12/16/2022 3:57:44 PM	72036
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	12/16/2022 4:08:00 AM	72036
Naphthalene	1.2	0.20	0.30		µg/L	1	12/16/2022 4:08:00 AM	72036
1-Methylnaphthalene	0.92	0.15	0.30		µg/L	1	12/16/2022 4:08:00 AM	72036
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	12/16/2022 4:08:00 AM	72036
Acenaphthene	0.18	0.14	0.30	J	µg/L	1	12/16/2022 4:08:00 AM	72036
Fluorene	0.28	0.095	0.30	J	µg/L	1	12/16/2022 4:08:00 AM	72036
Phenanthrene	0.52	0.16	0.30		µg/L	1	12/16/2022 4:08:00 AM	72036
Anthracene	0.20	0.14	0.30	J	µg/L	1	12/16/2022 4:08:00 AM	72036
Fluoranthene	0.58	0.14	0.30		µg/L	1	12/16/2022 4:08:00 AM	72036
Pyrene	0.46	0.32	1.0	J	µg/L	1	12/16/2022 4:08:00 AM	72036
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	12/16/2022 4:08:00 AM	72036
Chrysene	ND	0.25	0.30		µg/L	1	12/16/2022 4:08:00 AM	72036
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	12/16/2022 4:08:00 AM	72036
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	12/16/2022 4:08:00 AM	72036

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-12-7-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/7/2022
Lab ID: 2212442-007C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	52.9	0	15-108		%Rec	1	12/16/2022 4:08:00 AM	72036
Surr: 2-Fluorobiphenyl	44.4	0	15-107		%Rec	1	12/16/2022 4:08:00 AM	72036
Surr: 4-Terphenyl-d14	87.5	0	15-166		%Rec	1	12/16/2022 4:08:00 AM	72036

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-12-7-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/7/2022
Lab ID: 2212442-007D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.31	0.0016	0.0030		mg/L	1	12/12/2022 6:36:48 PM	71980
Beryllium	ND	0.00060	0.0020		mg/L	1	12/12/2022 6:36:48 PM	71980
Cadmium	ND	0.0018	0.0020		mg/L	1	12/12/2022 6:36:48 PM	71980
Chromium	ND	0.0020	0.0060		mg/L	1	12/12/2022 6:36:48 PM	71980
Cobalt	ND	0.0035	0.0060		mg/L	1	12/12/2022 6:36:48 PM	71980
Nickel	ND	0.0053	0.010		mg/L	1	12/12/2022 6:36:48 PM	71980
Silver	ND	0.0018	0.0050		mg/L	1	12/12/2022 6:36:48 PM	71980
Vanadium	0.0056	0.0035	0.050	J	mg/L	1	12/12/2022 6:36:48 PM	71980
Zinc	ND	0.0039	0.010		mg/L	1	12/12/2022 6:36:48 PM	71980
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	12/19/2022 2:15:13 PM	71980
Arsenic	0.0022	0.00022	0.0010		mg/L	1	12/12/2022 3:58:45 PM	71980
Lead	0.00032	0.00019	0.00050	J	mg/L	1	12/12/2022 3:58:45 PM	71980
Selenium	ND	0.00089	0.0010		mg/L	1	12/12/2022 3:58:45 PM	71980
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/16/2022 3:32:46 PM	72128

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-12-7-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/7/2022
Lab ID: 2212442-007E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **VP**	
Barium	0.30	0.0011	0.0020		mg/L	1	12/22/2022 5:24:22 PM	B93514
Beryllium	ND	0.00059	0.0020		mg/L	1	12/22/2022 5:24:22 PM	B93514
Cadmium	ND	0.00098	0.0020		mg/L	1	12/22/2022 5:24:22 PM	B93514
Chromium	ND	0.0020	0.0060		mg/L	1	12/22/2022 5:24:22 PM	B93514
Cobalt	ND	0.0024	0.0060		mg/L	1	12/22/2022 5:24:22 PM	B93514
Nickel	ND	0.0033	0.010		mg/L	1	12/22/2022 5:24:22 PM	B93514
Silver	ND	0.0013	0.0050		mg/L	1	12/22/2022 5:24:22 PM	B93514
Vanadium	0.0052	0.0017	0.050	J	mg/L	1	12/22/2022 5:24:22 PM	B93514
Zinc	0.016	0.0032	0.010		mg/L	1	12/22/2022 5:24:22 PM	B93514
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	12/27/2022 12:40:14 PM	A93556
Arsenic	0.0019	0.00061	0.0050	J	mg/L	5	12/20/2022 2:12:33 PM	A93438
Lead	0.000060	0.000057	0.00050	J	mg/L	1	12/15/2022 11:44:38 AM	A93335
Selenium	ND	0.0017	0.0050		mg/L	5	12/20/2022 2:12:33 PM	A93438
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/16/2022 3:41:22 PM	72128

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB-12-7-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/7/2022 11:05:00 AM
Lab ID: 2212442-008A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
Toluene	ND	0.20	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
Ethylbenzene	ND	0.21	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
Naphthalene	ND	0.50	2.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
Acetone	ND	2.5	10		µg/L	1	12/16/2022 7:33:24 AM	R93331
Bromobenzene	ND	0.28	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
Bromodichloromethane	ND	0.20	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
Bromoform	ND	0.31	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
Bromomethane	ND	0.85	3.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
2-Butanone	ND	2.0	10		µg/L	1	12/16/2022 7:33:24 AM	R93331
Carbon disulfide	ND	0.59	10		µg/L	1	12/16/2022 7:33:24 AM	R93331
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
Chlorobenzene	ND	0.16	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
Chloroethane	ND	0.38	2.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
Chloroform	ND	0.13	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
Chloromethane	ND	0.41	3.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
4-Chlorotoluene	ND	0.34	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
Dibromochloromethane	ND	0.28	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
Dibromomethane	ND	0.31	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
Dichlorodifluoromethane	ND	0.40	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
1,2-Dichloropropane	ND	0.20	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB-12-7-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/7/2022 11:05:00 AM
Lab ID: 2212442-008A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Hexachlorobutadiene	ND	0.56	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
2-Hexanone	ND	1.8	10		µg/L	1	12/16/2022 7:33:24 AM	R93331
Isopropylbenzene	ND	0.18	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
4-Methyl-2-pentanone	ND	0.88	10		µg/L	1	12/16/2022 7:33:24 AM	R93331
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
n-Propylbenzene	ND	0.18	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
Styrene	ND	0.14	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
trans-1,2-DCE	ND	0.19	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
1,2,3-Trichlorobenzene	ND	0.25	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
1,1,2-Trichloroethane	ND	0.20	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
Trichlorofluoromethane	ND	0.16	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
Vinyl chloride	ND	0.32	1.0		µg/L	1	12/16/2022 7:33:24 AM	R93331
Xylenes, Total	ND	0.37	1.5		µg/L	1	12/16/2022 7:33:24 AM	R93331
Surr: 1,2-Dichloroethane-d4	104	0	70-130		%Rec	1	12/16/2022 7:33:24 AM	R93331
Surr: 4-Bromofluorobenzene	97.5	0	70-130		%Rec	1	12/16/2022 7:33:24 AM	R93331
Surr: Dibromofluoromethane	108	0	70-130		%Rec	1	12/16/2022 7:33:24 AM	R93331
Surr: Toluene-d8	104	0	70-130		%Rec	1	12/16/2022 7:33:24 AM	R93331

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 4th Quarter
Collection Date:
Lab ID: 2212442-010A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
Toluene	ND	0.20	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
Ethylbenzene	ND	0.21	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
Naphthalene	ND	0.50	2.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
Acetone	ND	2.5	10		µg/L	1	12/16/2022 8:02:00 AM	R93331
Bromobenzene	ND	0.28	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
Bromodichloromethane	ND	0.20	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
Bromoform	ND	0.31	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
Bromomethane	ND	0.85	3.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
2-Butanone	ND	2.0	10		µg/L	1	12/16/2022 8:02:00 AM	R93331
Carbon disulfide	ND	0.59	10		µg/L	1	12/16/2022 8:02:00 AM	R93331
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
Chlorobenzene	ND	0.16	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
Chloroethane	ND	0.38	2.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
Chloroform	ND	0.13	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
Chloromethane	ND	0.41	3.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
4-Chlorotoluene	ND	0.34	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
Dibromochloromethane	ND	0.28	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
Dibromomethane	ND	0.31	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
Dichlorodifluoromethane	ND	0.40	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
1,2-Dichloropropane	ND	0.20	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 4th Quarter
Collection Date:
Lab ID: 2212442-010A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Hexachlorobutadiene	ND	0.56	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
2-Hexanone	ND	1.8	10		µg/L	1	12/16/2022 8:02:00 AM	R93331
Isopropylbenzene	ND	0.18	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
4-Methyl-2-pentanone	ND	0.88	10		µg/L	1	12/16/2022 8:02:00 AM	R93331
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
n-Propylbenzene	ND	0.18	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
Styrene	ND	0.14	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
trans-1,2-DCE	ND	0.19	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
1,2,3-Trichlorobenzene	ND	0.25	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
1,1,2-Trichloroethane	ND	0.20	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
Trichlorofluoromethane	ND	0.16	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
Vinyl chloride	ND	0.32	1.0		µg/L	1	12/16/2022 8:02:00 AM	R93331
Xylenes, Total	ND	0.37	1.5		µg/L	1	12/16/2022 8:02:00 AM	R93331
Surr: 1,2-Dichloroethane-d4	108	0	70-130		%Rec	1	12/16/2022 8:02:00 AM	R93331
Surr: 4-Bromofluorobenzene	99.7	0	70-130		%Rec	1	12/16/2022 8:02:00 AM	R93331
Surr: Dibromofluoromethane	104	0	70-130		%Rec	1	12/16/2022 8:02:00 AM	R93331
Surr: Toluene-d8	105	0	70-130		%Rec	1	12/16/2022 8:02:00 AM	R93331

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212442**
Date Reported: **1/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 4th Quarter
Collection Date:
Lab ID: 2212442-010B
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	12/21/2022 9:52:08 AM	72189

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

ANALYTICAL REPORT

December 19, 2022

Hall Environmental Analysis Laboratory

Sample Delivery Group: L1567062

Samples Received: 12/13/2022

Project Number:

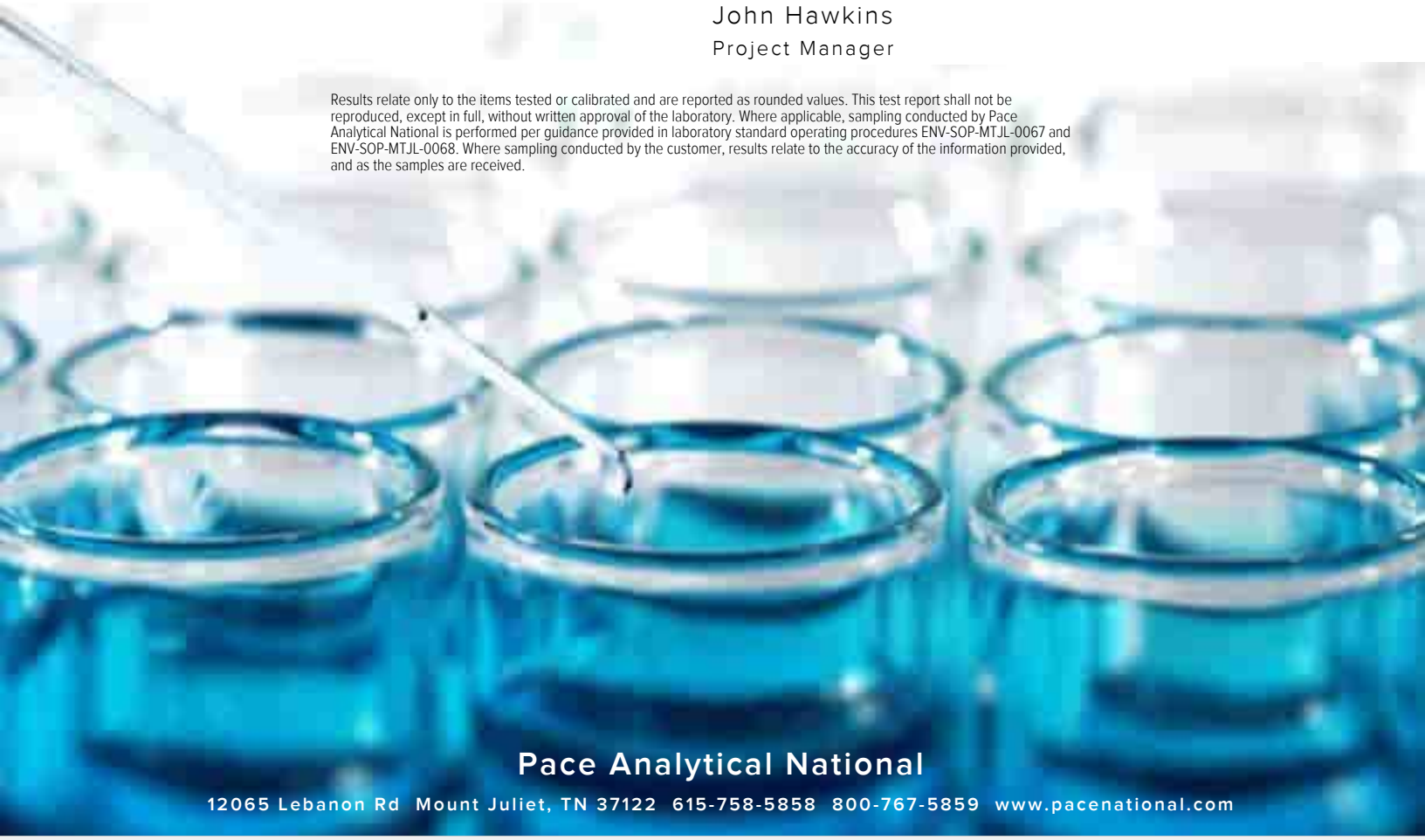
Description:

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By:

John Hawkins
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 4

Sr: Sample Results 5

2212442-001F EB-12-7-22 L1567062-01 5

2212442-002F OW-64 L1567062-02 6

2212442-003F OW-12 L1567062-03 7

2212442-004F OW-12A L1567062-04 8

2212442-005F OW-63 L1567062-05 9

2212442-006F OW-57 L1567062-06 10

2212442-007F DUP-12-7-22 L1567062-07 11

Qc: Quality Control Summary 12

Wet Chemistry by Method 4500CN E-2016 12

Gl: Glossary of Terms 13

Al: Accreditations & Locations 14

Sc: Sample Chain of Custody 15

SAMPLE SUMMARY

2212442-001F EB-12-7-22 L1567062-01 GW

Collected by | Collected date/time 12/07/22 09:30 | Received date/time 12/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1974296	1	12/18/22 16:42	12/19/22 16:43	JCS	Mt. Juliet, TN

2212442-002F OW-64 L1567062-02 GW

Collected by | Collected date/time 12/07/22 09:30 | Received date/time 12/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1974296	1	12/18/22 16:42	12/19/22 16:46	JCS	Mt. Juliet, TN

2212442-003F OW-12 L1567062-03 GW

Collected by | Collected date/time 12/07/22 09:30 | Received date/time 12/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1974296	1	12/18/22 16:42	12/19/22 16:49	JCS	Mt. Juliet, TN

2212442-004F OW-12A L1567062-04 GW

Collected by | Collected date/time 12/07/22 09:30 | Received date/time 12/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1974296	1	12/18/22 16:42	12/19/22 16:50	JCS	Mt. Juliet, TN

2212442-005F OW-63 L1567062-05 GW

Collected by | Collected date/time 12/07/22 09:30 | Received date/time 12/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1974296	1	12/18/22 16:42	12/19/22 16:52	JCS	Mt. Juliet, TN

2212442-006F OW-57 L1567062-06 GW

Collected by | Collected date/time 12/07/22 09:30 | Received date/time 12/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1974296	1	12/18/22 16:42	12/19/22 16:53	JCS	Mt. Juliet, TN

2212442-007F DUP-12-7-22 L1567062-07 GW

Collected by | Collected date/time 12/07/22 09:30 | Received date/time 12/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1974296	1	12/18/22 16:42	12/19/22 16:54	JCS	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	12/19/2022 16:43	WG1974296

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	12/19/2022 16:46	WG1974296

Received by OCD: 4/21/2023 9:21:57 AM

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	12/19/2022 16:49	WG1974296

Released to Imaging: 4/21/2023 9:40:26 AM

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND	P1	0.00500	1	12/19/2022 16:50	WG1974296

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	12/19/2022 16:52	WG1974296

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	12/19/2022 16:53	WG1974296

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	12/19/2022 16:54	WG1974296

Method Blank (MB)

(MB) R3873576-1 12/19/22 16:37

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1566638-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1566638-01 12/19/22 16:41 • (DUP) R3873576-3 12/19/22 16:42

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

L1567062-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1567062-04 12/19/22 16:50 • (DUP) R3873576-6 12/19/22 16:51

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	200	P1	20

Laboratory Control Sample (LCS)

(LCS) R3873576-2 12/19/22 16:38

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.0951	95.1	87.1-120	

L1567062-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1567062-01 12/19/22 16:43 • (MS) R3873576-4 12/19/22 16:44 • (MSD) R3873576-5 12/19/22 16:45

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0923	0.0923	92.3	92.3	1	90.0-110			0.000	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

B100

ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

L156 7062

SUB CONTRATOR: Pace TN	COMPANY: PACE TN	PHONE: (800) 767-5859	FAX: (615) 758-5859
ADDRESS: 12065 Lebanon Rd		ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: Mt. Juliet, TN 37122			

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS	
1	2212442-001F	EB-12-7-22	500AMBHDP F-NAOH	Groundwater	12/7/2022 9:30:00 AM	1	Total Cyanide J and MDL	-01
2	2212442-002F	OW-64	500AMBHDP F-NAOH	Groundwater	12/7/2022 9:40:00 AM	1	Total Cyanide J and MDL	-02
3	2212442-003F	OW-12	500AMBHDP F-NAOH	Groundwater	12/7/2022 10:05:00 AM	1	Total Cyanide J and MDL	-03
4	2212442-004F	OW-12A	500AMBHDP F-NAOH	Groundwater	12/7/2022 10:20:00 AM	1	Total Cyanide J and MDL	-04
5	2212442-005F	OW-63	500AMBHDP F-NAOH	Groundwater	12/7/2022 10:35:00 AM	1	Total Cyanide J and MDL	-05
6	2212442-006F	OW-57	500AMBHDP F-NAOH	Groundwater	12/7/2022 11:05:00 AM	1	Total Cyanide J and MDL	-06
7	2212442-007F	DUP-12-7-22	500AMBHDP F-NAOH	Groundwater	12/7/2022	1	Total Cyanide J and MDL	-07

Sample Receipt Checklist

COC Seal Present/Intact: __Y__N
COC Signed/Accurate: __Y__N
Bottles arrive intact: __Y__N
Correct bottles used: __Y__N
Sufficient volume sent: __Y__N
RAD Screen <0.5 mR/hr: __Y__N

If Applicable
VOA Zero Headspace: __Y__N
Pres.Correct/Check: __Y__N

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By:	Date: 12/12/2022	Time: 2:56 PM	Received By:	Date: 12/13/22	Time: 0900
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☑ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY
Temp of samples 3.5 °C (GBAR) Attempt to Cool ? _____
Comments: _____

January 16, 2023

Enthalpy Analytical - El Dorado Hills
Work Order No. 2212123

Mr. Andy Freeman
Hall Environmental Analytical Laboratory
4901 Hawkins NE
Albuquerque, NM 87109

Dear Mr. Freeman,

Enclosed are the results for the sample set received at Enthalpy Analytical - EDH on December 13, 2022 under your Project Name '2212442'.

Enthalpy Analytical - EDH is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at karen.volpendesta@enthalpy.com.

Thank you for choosing Enthalpy Analytical - EDH as part of your analytical support team.

Sincerely,

For

Karen L. Volpendesta
Project Manager

Enthalpy Analytical -EDH certifies that the report herein meets all the requirements set forth by NELAP for those applicable test methods. Results relate only to the samples as received by the laboratory. This report should not be reproduced except in full without the written approval of Enthalpy Analytical -EDH .

Enthalpy Analytical - EDH Work Order No. 2212123
Case Narrative

Sample Condition on Receipt:

One groundwater sample and one aqueous sample were received and stored securely in accordance with Enthalpy Analytical - EDH standard operating procedures and EPA methodology. The samples were received in good condition and within the recommended temperature requirements. The backup bottles for the samples were received broken.

Analytical Notes:

PFAS Isotope Dilution Method

The samples were extracted and analyzed for a selected list of PFAS using Enthalpy Analytical - EDH's PFAS Isotope Dilution Method. The results for PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Results for all other analytes include the linear isomers only.

Holding Times

The samples were extracted and analyzed within the hold times.

Quality Control

The Initial Calibration and Continuing Calibration Verifications met the acceptance criteria.

A Method Blank and Ongoing Precision and Recovery (OPR) sample were extracted and analyzed with the preparation batch. No analytes were detected in the Method Blank above the Reporting Limit. The OPR recoveries were within the method acceptance criteria.

The labeled standard recoveries for all QC and field samples were within the acceptance criteria.

TABLE OF CONTENTS

Case Narrative..... 1

Table of Contents..... 3

Sample Inventory..... 4

Analytical Results..... 5

Qualifiers..... 14

Certifications..... 15

Sample Receipt..... 16

Sample Inventory Report

Sample ID	Client Sample ID	Sampled	Received	Components/Containers
2212123-01	OW-63	07-Dec-22 10:35	13-Dec-22 09:01	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2212123-02	EB-OW-67	07-Dec-22 10:35	13-Dec-22 09:01	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL

Released to Imaging: 4/21/2023 9:40:26 AM

ANALYTICAL RESULTS

ENTHALPY ANALYTICAL

Sample ID: Method Blank — **PFAS Isotope Dilution Method**

Client Data

Name: Hall Environmental Analytical Laboratory
Project: 2212442
Matrix: Aqueous

Laboratory Data

Lab Sample: B22L133-BLK1
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	2.00		B22L133	21-Dec-22	0.250 L	10-Jan-23 16:16	1
PFPeA	2706-90-3	ND	2.00		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:49	1
PFBS	375-73-5	ND	2.00		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:49	1
4:2 FTS	757124-72-4	ND	2.00		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:49	1
PFHxA	307-24-4	ND	2.00		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:49	1
PFPeS	2706-91-4	ND	2.00		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:49	1
PFHpA	375-85-9	ND	2.00		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:49	1
PFHxS	355-46-4	ND	2.00		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:49	1
6:2 FTS	27619-97-2	ND	2.00		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:49	1
PFOA	335-67-1	ND	2.00		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:49	1
PFHpS	375-92-8	ND	2.00		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:49	1
PFNA	375-95-1	ND	2.00		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:49	1
PFOSA	754-91-6	ND	2.00		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:49	1
PFOS	1763-23-1	ND	2.00		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:49	1
PFDA	335-76-2	ND	2.00		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:49	1
8:2 FTS	39108-34-4	ND	2.00		B22L133	21-Dec-22	0.250 L	10-Jan-23 16:16	1
PFNS	68259-12-1	ND	2.00		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:49	1
MeFOSAA	2355-31-9	ND	2.00		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:49	1
EtFOSAA	2991-50-6	ND	2.00		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:49	1
PFUnA	2058-94-8	ND	2.00		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:49	1
PFDS	335-77-3	ND	2.00		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:49	1
PFDoA	307-55-1	ND	2.00		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:49	1
PFTrDA	72629-94-8	ND	2.00		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:49	1
PFTeDA	376-06-7	ND	2.00		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:49	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	51.8	25 - 150		B22L133	21-Dec-22	0.250 L	10-Jan-23 16:16	1
13C3-PFPeA	IS	64.8	25 - 150		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:49	1
13C3-PFBS	IS	67.5	25 - 150		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:49	1
13C2-4:2 FTS	IS	62.5	25 - 150		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:49	1
13C2-PFHxA	IS	61.6	25 - 150		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:49	1
13C4-PFHpA	IS	57.3	25 - 150		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:49	1
13C3-PFHxS	IS	66.0	25 - 150		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:49	1
13C2-6:2 FTS	IS	62.6	25 - 150		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:49	1
13C2-PFOA	IS	64.5	25 - 150		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:49	1
13C5-PFNA	IS	61.9	25 - 150		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:49	1
13C8-PFOSA	IS	37.7	10 - 150		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:49	1
13C8-PFOS	IS	63.9	25 - 150		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:49	1
13C2-PFDA	IS	56.8	25 - 150		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:49	1

ENTHALPY ANALYTICAL

Sample ID: Method Blank — **PFAS Isotope Dilution Method**

Client Data

Name: Hall Environmental Analytical Laboratory
Project: 2212442
Matrix: Aqueous

Laboratory Data

Lab Sample: B22L133-BLK1
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-8:2 FTS	IS	70.9	25 - 150		B22L133	21-Dec-22	0.250 L	10-Jan-23 16:16	1
d3-MeFOSAA	IS	62.5	25 - 150		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:49	1
d5-EtFOSAA	IS	62.9	25 - 150		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:49	1
13C2-PFUnA	IS	58.6	25 - 150		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:49	1
13C2-PFDoA	IS	48.6	25 - 150		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:49	1
13C2-PFTeDA	IS	52.6	20 - 150		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:49	1

RL - Reporting limit

Results reported to RL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

ENTHALPY ANALYTICAL

Sample ID: OPR — **PFAS Isotope Dilution Method**

Client Data

Name: Hall Environmental Analytical Laboratory
Project: 2212442
Matrix: Aqueous

Laboratory Data

Lab Sample: B22L133-BS1
Column: BEH C18

Analyte	CAS Number	Amt Found (ng/L)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	36.6	40.0	91.5	65 - 135		B22L133	21-Dec-22	0.250 L	10-Jan-23 16:27	1
PFPeA	2706-90-3	35.3	40.0	88.2	65 - 135		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:59	1
PFBS	375-73-5	34.2	40.4	84.7	65 - 135		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:59	1
4:2 FTS	757124-72-4	39.3	40.0	98.3	60 - 145		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:59	1
PFHxA	307-24-4	33.5	40.0	83.6	65 - 135		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:59	1
PFPeS	2706-91-4	30.6	40.4	75.7	65 - 135		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:59	1
PFHpA	375-85-9	35.8	40.0	89.4	65 - 135		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:59	1
PFHxS	355-46-4	38.0	40.0	94.9	65 - 135		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:59	1
6:2 FTS	27619-97-2	34.0	40.0	84.9	60 - 140		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:59	1
PFOA	335-67-1	35.1	40.0	87.9	65 - 135		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:59	1
PFHpS	375-92-8	36.8	40.0	91.9	65 - 135		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:59	1
PFNA	375-95-1	35.8	40.0	89.5	65 - 135		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:59	1
PFOSA	754-91-6	35.4	40.0	88.6	65 - 140		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:59	1
PFOS	1763-23-1	32.1	40.0	80.3	65 - 140		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:59	1
PFDA	335-76-2	33.3	40.0	83.2	65 - 135		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:59	1
8:2 FTS	39108-34-4	35.5	40.0	88.7	65 - 135		B22L133	21-Dec-22	0.250 L	10-Jan-23 16:27	1
PFNS	68259-12-1	32.4	40.0	81.0	65 - 135		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:59	1
MeFOSAA	2355-31-9	33.4	40.0	83.5	65 - 135		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:59	1
EtFOSAA	2991-50-6	34.3	40.0	85.6	65 - 135		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:59	1
PFUnA	2058-94-8	34.9	40.0	87.2	65 - 140		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:59	1
PFDS	335-77-3	35.3	40.0	88.3	50 - 150		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:59	1
PFDoA	307-55-1	37.4	40.0	93.4	65 - 135		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:59	1
PFTrDA	72629-94-8	38.0	40.0	95.0	60 - 140		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:59	1
PFTeDA	376-06-7	36.7	40.0	91.7	65 - 135		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:59	1

Labeled Standards	Type	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	50.1	25 - 150		B22L133	21-Dec-22	0.250 L	10-Jan-23 16:27	1
13C3-PFPeA	IS	67.2	25 - 150		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:59	1
13C3-PFBS	IS	74.4	25 - 150		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:59	1
13C2-4:2 FTS	IS	65.0	25 - 150		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:59	1
13C2-PFHxA	IS	67.5	25 - 150		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:59	1
13C4-PFHpA	IS	65.6	25 - 150		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:59	1
13C3-PFHxS	IS	68.4	25 - 150		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:59	1
13C2-6:2 FTS	IS	64.9	25 - 150		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:59	1
13C2-PFOA	IS	67.3	25 - 150		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:59	1
13C5-PFNA	IS	62.5	25 - 150		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:59	1

ENTHALPY ANALYTICAL

Sample ID: OPR — **PFAS Isotope Dilution Method**

Client Data

Name: Hall Environmental Analytical Laboratory
Project: 2212442
Matrix: Aqueous

Laboratory Data

Lab Sample: B22L133-BS1
Column: BEH C18

Labeled Standards	Type	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C8-PFOSA	IS	41.4	10 - 150		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:59	1
13C8-PFOS	IS	62.0	25 - 150		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:59	1
13C2-PFDA	IS	58.8	25 - 150		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:59	1
13C2-8:2 FTS	IS	72.2	25 - 150		B22L133	21-Dec-22	0.250 L	10-Jan-23 16:27	1
d3-MeFOSAA	IS	60.6	25 - 150		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:59	1
d5-EtFOSAA	IS	60.9	25 - 150		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:59	1
13C2-PFUnA	IS	54.6	25 - 150		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:59	1
13C2-PFDoA	IS	49.2	25 - 150		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:59	1
13C2-PFTeDA	IS	55.3	20 - 150		B22L133	21-Dec-22	0.250 L	12-Jan-23 09:59	1

ENTHALPY ANALYTICAL

Sample ID: OW-63 **PFAS Isotope Dilution Method**

Client Data

Name: Hall Environmental Analytical Laboratory
Project: 2212442
Location: 2212442-005G
Matrix: Groundwater
Date Collected: 07-Dec-22 10:35

Laboratory Data

Lab Sample: 2212123-01
Date Received: 13-Dec-22 09:01
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	140	2.03		B22L133	21-Dec-22	0.246 L	10-Jan-23 16:58	1
PFPeA	2706-90-3	505	2.03		B22L133	21-Dec-22	0.246 L	12-Jan-23 10:30	1
PFBS	375-73-5	34.9	2.03		B22L133	21-Dec-22	0.246 L	12-Jan-23 10:30	1
4:2 FTS	757124-72-4	ND	2.03		B22L133	21-Dec-22	0.246 L	12-Jan-23 10:30	1
PFHxA	307-24-4	344	2.03		B22L133	21-Dec-22	0.246 L	12-Jan-23 10:30	1
PFPeS	2706-91-4	34.4	2.03		B22L133	21-Dec-22	0.246 L	12-Jan-23 10:30	1
PFHpA	375-85-9	124	2.03		B22L133	21-Dec-22	0.246 L	12-Jan-23 10:30	1
PFHxS	355-46-4	258	2.03		B22L133	21-Dec-22	0.246 L	12-Jan-23 10:30	1
6:2 FTS	27619-97-2	562	2.03		B22L133	21-Dec-22	0.246 L	12-Jan-23 10:30	1
PFOA	335-67-1	106	2.03		B22L133	21-Dec-22	0.246 L	12-Jan-23 10:30	1
PFHpS	375-92-8	7.25	2.03		B22L133	21-Dec-22	0.246 L	12-Jan-23 10:30	1
PFNA	375-95-1	479	2.03		B22L133	21-Dec-22	0.246 L	12-Jan-23 10:30	1
PFOSA	754-91-6	ND	2.03		B22L133	21-Dec-22	0.246 L	12-Jan-23 10:30	1
PFOS	1763-23-1	331	2.03		B22L133	21-Dec-22	0.246 L	12-Jan-23 10:30	1
PFDA	335-76-2	12.1	2.03		B22L133	21-Dec-22	0.246 L	12-Jan-23 10:30	1
8:2 FTS	39108-34-4	70.1	2.03		B22L133	21-Dec-22	0.246 L	10-Jan-23 16:58	1
PFNS	68259-12-1	ND	2.03		B22L133	21-Dec-22	0.246 L	12-Jan-23 10:30	1
MeFOSAA	2355-31-9	ND	2.03		B22L133	21-Dec-22	0.246 L	12-Jan-23 10:30	1
EtFOSAA	2991-50-6	ND	2.03		B22L133	21-Dec-22	0.246 L	12-Jan-23 10:30	1
PFUnA	2058-94-8	76.8	2.03		B22L133	21-Dec-22	0.246 L	12-Jan-23 10:30	1
PFDS	335-77-3	ND	2.03		B22L133	21-Dec-22	0.246 L	12-Jan-23 10:30	1
PFDoA	307-55-1	ND	2.03		B22L133	21-Dec-22	0.246 L	12-Jan-23 10:30	1
PFTrDA	72629-94-8	ND	2.03		B22L133	21-Dec-22	0.246 L	12-Jan-23 10:30	1
PFTeDA	376-06-7	ND	2.03		B22L133	21-Dec-22	0.246 L	12-Jan-23 10:30	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	35.9	25 - 150		B22L133	21-Dec-22	0.246 L	10-Jan-23 16:58	1
13C3-PFPeA	IS	61.4	25 - 150		B22L133	21-Dec-22	0.246 L	12-Jan-23 10:30	1
13C3-PFBS	IS	79.2	25 - 150		B22L133	21-Dec-22	0.246 L	12-Jan-23 10:30	1
13C2-4:2 FTS	IS	78.1	25 - 150		B22L133	21-Dec-22	0.246 L	12-Jan-23 10:30	1
13C2-PFHxA	IS	67.3	25 - 150		B22L133	21-Dec-22	0.246 L	12-Jan-23 10:30	1
13C4-PFHpA	IS	63.5	25 - 150		B22L133	21-Dec-22	0.246 L	12-Jan-23 10:30	1
13C3-PFHxS	IS	72.5	25 - 150		B22L133	21-Dec-22	0.246 L	12-Jan-23 10:30	1
13C2-6:2 FTS	IS	69.0	25 - 150		B22L133	21-Dec-22	0.246 L	12-Jan-23 10:30	1
13C2-PFOA	IS	67.3	25 - 150		B22L133	21-Dec-22	0.246 L	12-Jan-23 10:30	1
13C5-PFNA	IS	61.8	25 - 150		B22L133	21-Dec-22	0.246 L	12-Jan-23 10:30	1
13C8-PFOSA	IS	42.2	10 - 150		B22L133	21-Dec-22	0.246 L	12-Jan-23 10:30	1
13C8-PFOS	IS	63.9	25 - 150		B22L133	21-Dec-22	0.246 L	12-Jan-23 10:30	1

ENTHALPY ANALYTICAL

Sample ID: OW-63 **PFAS Isotope Dilution Method**

Client Data

Name: Hall Environmental Analytical Laboratory
Project: 2212442
Location: 2212442-005G
Matrix: Groundwater
Date Collected: 07-Dec-22 10:35

Laboratory Data

Lab Sample: 2212123-01
Date Received: 13-Dec-22 09:01
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFDA	IS	58.7	25 - 150		B22L133	21-Dec-22	0.246 L	12-Jan-23 10:30	1
13C2-8:2 FTS	IS	74.1	25 - 150		B22L133	21-Dec-22	0.246 L	10-Jan-23 16:58	1
d3-MeFOSAA	IS	60.6	25 - 150		B22L133	21-Dec-22	0.246 L	12-Jan-23 10:30	1
d5-EtFOSAA	IS	61.2	25 - 150		B22L133	21-Dec-22	0.246 L	12-Jan-23 10:30	1
13C2-PFUnA	IS	61.2	25 - 150		B22L133	21-Dec-22	0.246 L	12-Jan-23 10:30	1
13C2-PFDoA	IS	54.6	25 - 150		B22L133	21-Dec-22	0.246 L	12-Jan-23 10:30	1
13C2-PFTeDA	IS	58.7	20 - 150		B22L133	21-Dec-22	0.246 L	12-Jan-23 10:30	1

RL - Reporting limit

Results reported to RL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

Released to Imaging: 4/21/2023 9:40:26 AM

ENTHALPY ANALYTICAL

Sample ID: EB-OW-67 **PFAS Isotope Dilution Method**

Client Data

Name: Hall Environmental Analytical Laboratory
Project: 2212442
Location: 2212442-009A
Matrix: Aqueous
Date Collected: 07-Dec-22 10:35

Laboratory Data

Lab Sample: 2212123-02
Date Received: 13-Dec-22 09:01
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	1.94		B22L133	21-Dec-22	0.258 L	10-Jan-23 17:08	1
PFPeA	2706-90-3	ND	1.94		B22L133	21-Dec-22	0.258 L	12-Jan-23 10:41	1
PFBS	375-73-5	ND	1.94		B22L133	21-Dec-22	0.258 L	12-Jan-23 10:41	1
4:2 FTS	757124-72-4	ND	1.94		B22L133	21-Dec-22	0.258 L	12-Jan-23 10:41	1
PFHxA	307-24-4	ND	1.94		B22L133	21-Dec-22	0.258 L	12-Jan-23 10:41	1
PFPeS	2706-91-4	ND	1.94		B22L133	21-Dec-22	0.258 L	12-Jan-23 10:41	1
PFHpA	375-85-9	ND	1.94		B22L133	21-Dec-22	0.258 L	12-Jan-23 10:41	1
PFHxS	355-46-4	ND	1.94		B22L133	21-Dec-22	0.258 L	12-Jan-23 10:41	1
6:2 FTS	27619-97-2	ND	1.94		B22L133	21-Dec-22	0.258 L	12-Jan-23 10:41	1
PFOA	335-67-1	ND	1.94		B22L133	21-Dec-22	0.258 L	12-Jan-23 10:41	1
PFHpS	375-92-8	ND	1.94		B22L133	21-Dec-22	0.258 L	12-Jan-23 10:41	1
PFNA	375-95-1	ND	1.94		B22L133	21-Dec-22	0.258 L	12-Jan-23 10:41	1
PFOSA	754-91-6	ND	1.94		B22L133	21-Dec-22	0.258 L	12-Jan-23 10:41	1
PFOS	1763-23-1	ND	1.94		B22L133	21-Dec-22	0.258 L	12-Jan-23 10:41	1
PFDA	335-76-2	ND	1.94		B22L133	21-Dec-22	0.258 L	12-Jan-23 10:41	1
8:2 FTS	39108-34-4	ND	1.94		B22L133	21-Dec-22	0.258 L	10-Jan-23 17:08	1
PFNS	68259-12-1	ND	1.94		B22L133	21-Dec-22	0.258 L	12-Jan-23 10:41	1
MeFOSAA	2355-31-9	ND	1.94		B22L133	21-Dec-22	0.258 L	12-Jan-23 10:41	1
EtFOSAA	2991-50-6	ND	1.94		B22L133	21-Dec-22	0.258 L	12-Jan-23 10:41	1
PFUnA	2058-94-8	ND	1.94		B22L133	21-Dec-22	0.258 L	12-Jan-23 10:41	1
PFDS	335-77-3	ND	1.94		B22L133	21-Dec-22	0.258 L	12-Jan-23 10:41	1
PFDoA	307-55-1	ND	1.94		B22L133	21-Dec-22	0.258 L	12-Jan-23 10:41	1
PFTrDA	72629-94-8	ND	1.94		B22L133	21-Dec-22	0.258 L	12-Jan-23 10:41	1
PFTeDA	376-06-7	ND	1.94		B22L133	21-Dec-22	0.258 L	12-Jan-23 10:41	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	70.3	25 - 150		B22L133	21-Dec-22	0.258 L	10-Jan-23 17:08	1
13C3-PFPeA	IS	61.7	25 - 150		B22L133	21-Dec-22	0.258 L	12-Jan-23 10:41	1
13C3-PFBS	IS	75.9	25 - 150		B22L133	21-Dec-22	0.258 L	12-Jan-23 10:41	1
13C2-4:2 FTS	IS	59.9	25 - 150		B22L133	21-Dec-22	0.258 L	12-Jan-23 10:41	1
13C2-PFHxA	IS	65.2	25 - 150		B22L133	21-Dec-22	0.258 L	12-Jan-23 10:41	1
13C4-PFHpA	IS	59.0	25 - 150		B22L133	21-Dec-22	0.258 L	12-Jan-23 10:41	1
13C3-PFHxS	IS	61.9	25 - 150		B22L133	21-Dec-22	0.258 L	12-Jan-23 10:41	1
13C2-6:2 FTS	IS	63.4	25 - 150		B22L133	21-Dec-22	0.258 L	12-Jan-23 10:41	1
13C2-PFOA	IS	67.0	25 - 150		B22L133	21-Dec-22	0.258 L	12-Jan-23 10:41	1
13C5-PFNA	IS	63.5	25 - 150		B22L133	21-Dec-22	0.258 L	12-Jan-23 10:41	1
13C8-PFOSA	IS	30.2	10 - 150		B22L133	21-Dec-22	0.258 L	12-Jan-23 10:41	1
13C8-PFOS	IS	58.0	25 - 150		B22L133	21-Dec-22	0.258 L	12-Jan-23 10:41	1

ENTHALPY ANALYTICAL

Sample ID: EB-OW-67 **PFAS Isotope Dilution Method**

Client Data

Name: Hall Environmental Analytical Laboratory
Project: 2212442
Location: 2212442-009A
Matrix: Aqueous
Date Collected: 07-Dec-22 10:35

Laboratory Data

Lab Sample: 2212123-02
Date Received: 13-Dec-22 09:01
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFDA	IS	56.7	25 - 150		B22L133	21-Dec-22	0.258 L	12-Jan-23 10:41	1
13C2-8:2 FTS	IS	72.2	25 - 150		B22L133	21-Dec-22	0.258 L	10-Jan-23 17:08	1
d3-MeFOSAA	IS	56.8	25 - 150		B22L133	21-Dec-22	0.258 L	12-Jan-23 10:41	1
d5-EtFOSAA	IS	56.8	25 - 150		B22L133	21-Dec-22	0.258 L	12-Jan-23 10:41	1
13C2-PFUnA	IS	58.0	25 - 150		B22L133	21-Dec-22	0.258 L	12-Jan-23 10:41	1
13C2-PFDoA	IS	52.6	25 - 150		B22L133	21-Dec-22	0.258 L	12-Jan-23 10:41	1
13C2-PFTeDA	IS	55.7	20 - 150		B22L133	21-Dec-22	0.258 L	12-Jan-23 10:41	1

RL - Reporting limit

Results reported to RL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank
Conc.	Concentration
CRS	Cleanup Recovery Standard
D	Dilution
DL	Detection Limit
E	The associated compound concentration exceeded the calibration range of the instrument
H	Recovery and/or RPD was outside laboratory acceptance limits
I	Chemical Interference
IS	Internal Standard
J	The amount detected is below the Reporting Limit/LOQ
LOD	Limit of Detection
LOQ	Limit of Quantitation
M	Estimated Maximum Possible Concentration (CA Region 2 projects only)
MDL	Method Detection Limit
NA	Not applicable
ND	Not Detected
OPR	Ongoing Precision and Recovery sample
P	The reported concentration may include contribution from chlorinated diphenyl ether(s).
Q	The ion transition ratio is outside of the acceptance criteria.
RL	Reporting Limit
RL	For 537.1, the reported RLs are the MRLs.
TEQ	Toxic Equivalency, sum of the toxic equivalency factors (TEF) multiplied by the sample concentrations.
TEQMax	TEQ calculation that uses the detection limit as the concentration for non-detects
TEQMin	TEQ calculation that uses zero as the concentration for non-detects
TEQRisk	TEQ calculation that uses ½ the detection limit as the concentration for non-detects
U	Not Detected (specific projects only)
*	See Cover Letter

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

Enthalpy Analytical Laboratory Certifications

Accrediting Authority	Certificate Number
Alaska Department of Environmental Conservation	17-013
Arkansas Department of Environmental Quality	21-023-0
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025	3091.01
Florida Department of Health	E87777
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2020018
Massachusetts Department of Environmental Protection	M-CA413
Michigan Department of Environmental Quality	9932
Minnesota Department of Health	2211390
New Hampshire Environmental Accreditation Program	207721
New Jersey Department of Environmental Protection	CA003
New York Department of Health	11411
Ohio Environmental Protection Agency	87778
Oregon Laboratory Accreditation Program	4042-021
Texas Commission on Environmental Quality	T104704189-22-13
Vermont Department of Health	VT-4042
Virginia Department of General Services	11276
Washington Department of Ecology	C584
Wisconsin Department of Natural Resources	998036160

Current certificates and lists of licensed parameters are located in the Quality Assurance office and are available upon request.

Received by OCD: 4/21/2023 9:21:57 AM

ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

Hall Environmental Analysis Lab
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

2212122 0.5°C

SUB CONTRACTOR: Vista Analytical Labor	COMPANY: Vista Analytical Laboratory	PHONE: (916) 673-1520	FAX:
ADDRESS: 1104 Windfield Way		ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: El Dorado Hills, CA 95762			

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	2212442-005B	OW-63	250HDPE	Groundwater	12/7/2022 10:35:00 AM	2	537 UCMR 3.1 and MDL
2	2212442-006A	EB-OW-67	250HDPE	Aqueous	12/7/2022 10:35:00 AM	2	537 UCMR 3.1 and MDL

SPECIAL INSTRUCTIONS / COMMENTS:

Relinquished By: [illegible]	Date: 12/12/2022	Time: 2:58 PM	Received By: FedEx	Date: 12/12/22	Time: 21:58 pm
Relinquished By: FedEx	Date: 12/13/22	Time: 0901	Received By: Bryan Clark	Date: 12/13/22	Time: 0901
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☑ RUSH: Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (additional cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY
Temp of samples: °C Attempt to Cool? Comments:

Released to Imaging: 4/21/2023 9:40:26 AM

Vista Analytical Laboratory

Sample Log-In Checklist

Page # 1 of 1

Vista Work Order #: 2212123 TAT 1H

Samples Arrival:	Date/Time 09:01 12/13/22		Initials: BAC		Location: WL-2 Shelf/Rack: N/A		
Delivered By:	(FedEx)	UPS	On Trac	GLS	DHL	Hand Delivered	Other
Preservation:	Ice		(Blue Ice)		Techni Ice	Dry Ice	None
Temp °C: 1.0 (uncorrected) Temp °C: 0.8 (corrected)			Probe used: Y / (N)		Thermometer ID: IR-4		

	YES	NO	NA
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Airbill Trk # 770753474608	✓		
Shipping Documentation Present?	✓		
Shipping Container: (Vista) Client — (Retain) Return — Dispose			
Chain of Custody / Sample Documentation Present?	✓		
Chain of Custody / Sample Documentation Complete?	✓		
Holding Time Acceptable?	✓		
Logged In: Date/Time 12/13/22 11:51 Initials: KS Location: R-13, WL-2 Shelf/Rack: A-2, F-4			
COC Anomaly/Sample Acceptance Form completed?	✓		

Comments:

CoC/Label Reconciliation Report WO# 2212123

LabNumber	CoC Sample ID		SampleAlias	Sample Date/Time		Container	Matrix/Matrix	Sample Comments
2212123-01	A-OW-03	☑ A	2212443-005G	07-Dec-22 10:35	☑	HDPE Bottle, 250 mL	Aqueous	
2212123-02	B-OW-03	☐ A	2212443-005G	07-Dec-22 10:35	☐	HDPE Bottle, 250 mL	Aqueous	
2212123-03	A-EB-OW-01	☑ A	2212442-009A	07-Dec-22 10:35	☑	HDPE Bottle, 250 mL	Aqueous	
2212123-04	B-EB-OW-01	☐ A	2212442-009A	07-Dec-22 10:35	☐	HDPE Bottle, 250 mL	Aqueous	

Checkmarks indicate that information on the COC reconciled with the sample label.
Any discrepancies are noted in the following columns.

	Yes	No	NA
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Adequate Sample Volume?	✓		
Container Type Appropriate for Analysis(es)	✓		

Comments: A) Samples received broken. D) No lookup volume

Preservation Documented: Na2S2O3 Trizma (TS) NH4CH3CO2 None Other

Verified by/Date: [illegible] 12/14/22

Vista

ANOMALY FORM

Vista Work Order 2212127

Initial/Date | The following checked issues were noted during sample receipt and login:

- ☐ 1. **The samples were received out of temperature at (Wt-Pht):** _____
  Was ice present: Yes No Melted Blue Ice
- ☐ 2. The Chain-of-Custody (CoC) was not relinquished properly.
- ☐ 3. The CoC did not indicate collection time(s). 00:00 will be used unless notified otherwise.
- ☐ 4. The sample(s) did not include a sample collection time. All or Sample Name: _____
- ☐ 5. A sample ID discrepancy was found. See the Reconciliation report.
  The CoC Sample ID will be used unless notified otherwise.
- ☐ 6. A sample date and/or time discrepancy was found. See the Reconciliation report.
  The CoC Sample date/time will be used unless notified otherwise.
- ☐ 7. **The CoC did not include a sample matrix. The following sample matrix will be used:** _____
- ☐ 8. **Insufficient volume received for analysis. All or Sample Name:** _____
- 12/14/22 ☑ 9. The backup bottle was received broken. Sample Name: GW-67, EB-GW-67
- ☐ 10. **CoC not received, illegible or destroyed.**
- ☐ 11. **The sample(s) were received out of holding time. All or Sample Name:** _____
- ☐ 12. **The CoC did not include an analysis. All or Sample Name:** _____
- ☐ 13. **Sample(s) received without collection date. All or Sample Name:** _____
- ☐ 14. **Sample(s) not received. All or Sample Name:** _____
- ☐ 15. **Sample(s) received broken. All or Sample Name:** _____
- ☐ 16. **An incorrect container-type was used. All or Sample Name:** _____
- ☐ 17. The Field Reagent Blank (FRB) preservative was from a different lot than the field samples.
  WA proceed with analysis and narrate unless notified otherwise.
- ☐ 18. Other:

Bolded items require sign-off

Client Contacted: Andy Freeman

Date of Contact: 12/14/2022

Vista Client Manager: Karen Volpendesta

Resolution:

Client notified that backup bottles were received broken.

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212442**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-71980**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **71980**	RunNo: **93212**
Prep Date: **12/9/2022**	Analysis Date: **12/12/2022**	SeqNo: **3358956** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	0.0048	0.0060								J
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LCSLL-71980**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **71980**	RunNo: **93212**
Prep Date: **12/9/2022**	Analysis Date: **12/12/2022**	SeqNo: **3358957** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0023	0.0030	0.002000	0	115	50	150			J
Beryllium	0.0019	0.0020	0.002000	0	94.3	50	150			J
Cadmium	0.0024	0.0020	0.002000	0	118	50	150			
Chromium	0.0061	0.0060	0.006000	0	102	50	150			
Cobalt	0.0034	0.0060	0.006000	0	57.1	50	150			J
Nickel	0.0046	0.010	0.005000	0	92.7	50	150			J
Silver	0.0041	0.0050	0.005000	0	81.9	50	150			J
Vanadium	0.0091	0.050	0.01000	0	90.8	50	150			J
Zinc	0.0099	0.010	0.01000	0	98.6	50	150			J

Sample ID: **LCS-71980**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **71980**	RunNo: **93212**
Prep Date: **12/9/2022**	Analysis Date: **12/12/2022**	SeqNo: **3358958** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0030	0.5000	0	99.7	85	115			
Beryllium	0.51	0.0020	0.5000	0	103	85	115			
Cadmium	0.48	0.0020	0.5000	0	96.4	85	115			
Chromium	0.48	0.0060	0.5000	0	95.7	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.5	85	115			
Nickel	0.47	0.010	0.5000	0	94.8	85	115			
Silver	0.092	0.0050	0.1000	0	91.6	85	115			
Vanadium	0.51	0.050	0.5000	0	101	85	115			
Zinc	0.50	0.010	0.5000	0	101	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212442**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **2212442-001DMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **EB-12-7-22**	Batch ID: **71980**	RunNo: **93212**
Prep Date: **12/9/2022**	Analysis Date: **12/12/2022**	SeqNo: **3359060** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0030	0.5000	0	103	70	130			
Beryllium	0.52	0.0020	0.5000	0	104	70	130			
Cadmium	0.49	0.0020	0.5000	0	98.0	70	130			
Chromium	0.49	0.0060	0.5000	0	97.9	70	130			
Cobalt	0.52	0.0060	0.5000	0	103	70	130			
Nickel	0.48	0.010	0.5000	0	96.9	70	130			
Silver	0.094	0.0050	0.1000	0	94.1	70	130			
Vanadium	0.51	0.050	0.5000	0	103	70	130			
Zinc	0.51	0.010	0.5000	0	102	70	130			

Sample ID: **2212442-001DMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Metals**
Client ID: **EB-12-7-22**	Batch ID: **71980**	RunNo: **93212**
Prep Date: **12/9/2022**	Analysis Date: **12/12/2022**	SeqNo: **3359061** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0030	0.5000	0	101	70	130	1.55	20	
Beryllium	0.51	0.0020	0.5000	0	103	70	130	0.739	20	
Cadmium	0.48	0.0020	0.5000	0	96.3	70	130	1.75	20	
Chromium	0.48	0.0060	0.5000	0	95.5	70	130	2.44	20	
Cobalt	0.50	0.0060	0.5000	0	99.5	70	130	3.64	20	
Nickel	0.48	0.010	0.5000	0	95.3	70	130	1.73	20	
Silver	0.093	0.0050	0.1000	0	92.5	70	130	1.68	20	
Vanadium	0.52	0.050	0.5000	0	104	70	130	0.785	20	
Zinc	0.50	0.010	0.5000	0	99.3	70	130	3.18	20	

Sample ID: **2212442-002DMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **OW-64**	Batch ID: **71980**	RunNo: **93212**
Prep Date: **12/9/2022**	Analysis Date: **12/12/2022**	SeqNo: **3359063** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.80	0.0030	0.5000	0.2993	101	70	130			
Beryllium	0.51	0.0020	0.5000	0	102	70	130			
Cadmium	0.47	0.0020	0.5000	0	94.7	70	130			
Chromium	0.48	0.0060	0.5000	0	96.5	70	130			
Cobalt	0.50	0.0060	0.5000	0	101	70	130			
Nickel	0.47	0.010	0.5000	0	93.8	70	130			
Silver	0.095	0.0050	0.1000	0	94.7	70	130			
Vanadium	0.52	0.050	0.5000	0.005841	102	70	130			
Zinc	0.51	0.010	0.5000	0	103	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212442**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **2212442-002DMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Metals**
Client ID: **OW-64**	Batch ID: **71980**	RunNo: **93212**
Prep Date: **12/9/2022**	Analysis Date: **12/12/2022**	SeqNo: **3359064** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.81	0.0030	0.5000	0.2993	101	70	130	0.253	20	
Beryllium	0.52	0.0020	0.5000	0	103	70	130	1.26	20	
Cadmium	0.48	0.0020	0.5000	0	95.1	70	130	0.379	20	
Chromium	0.49	0.0060	0.5000	0	97.3	70	130	0.831	20	
Cobalt	0.50	0.0060	0.5000	0	100	70	130	0.554	20	
Nickel	0.47	0.010	0.5000	0	94.4	70	130	0.700	20	
Silver	0.095	0.0050	0.1000	0	94.9	70	130	0.194	20	
Vanadium	0.52	0.050	0.5000	0.005841	102	70	130	0.241	20	
Zinc	0.52	0.010	0.5000	0	103	70	130	0.119	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212442**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-B**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B93514**	RunNo: **93514**
Prep Date:	Analysis Date: **12/22/2022**	SeqNo: **3373357** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0013	0.0020								J
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LCSLL-B**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B93514**	RunNo: **93514**
Prep Date:	Analysis Date: **12/22/2022**	SeqNo: **3373358** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0019	0.0020	0.002000	0	95.0	50	150			J
Beryllium	0.0020	0.0020	0.002000	0	97.8	50	150			J
Cadmium	0.0017	0.0020	0.002000	0	83.5	50	150			J
Chromium	0.0057	0.0060	0.006000	0	95.6	50	150			J
Cobalt	0.0067	0.0060	0.006000	0	112	50	150			
Nickel	0.0040	0.010	0.005000	0	80.5	50	150			J
Silver	0.0047	0.0050	0.005000	0	93.9	50	150			J
Vanadium	0.0094	0.050	0.01000	0	94.4	50	150			J
Zinc	0.0094	0.010	0.01000	0	93.5	50	150			J

Sample ID: **LCS-B**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B93514**	RunNo: **93514**
Prep Date:	Analysis Date: **12/22/2022**	SeqNo: **3373359** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.52	0.0020	0.5000	0	105	85	115			
Beryllium	0.51	0.0020	0.5000	0	101	85	115			
Cadmium	0.50	0.0020	0.5000	0	101	85	115			
Chromium	0.51	0.0060	0.5000	0	102	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.9	85	115			
Nickel	0.51	0.010	0.5000	0	103	85	115			
Silver	0.10	0.0050	0.1000	0	102	85	115			
Vanadium	0.51	0.050	0.5000	0	102	85	115			
Zinc	0.51	0.010	0.5000	0	102	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212442**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-71980**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **71980**	RunNo: **93211**
Prep Date: **12/9/2022**	Analysis Date: **12/12/2022**	SeqNo: **3359463** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **MSLCSLL-71980**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **71980**	RunNo: **93211**
Prep Date: **12/9/2022**	Analysis Date: **12/12/2022**	SeqNo: **3359464** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00069	0.0010	0.001000	0	69.4	50	150			J
Arsenic	0.0012	0.0010	0.001000	0	119	50	150			
Lead	0.00049	0.00050	0.0005000	0	98.8	50	150			J
Selenium	0.0012	0.0010	0.001000	0	122	50	150			

Sample ID: **MSLCS-71980**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **71980**	RunNo: **93211**
Prep Date: **12/9/2022**	Analysis Date: **12/12/2022**	SeqNo: **3359465** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.3	85	115			
Arsenic	0.025	0.0010	0.02500	0	100	85	115			
Lead	0.013	0.00050	0.01250	0	102	85	115			
Selenium	0.028	0.0010	0.02500	0	111	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212442**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A93335**	RunNo: **93335**
Prep Date:	Analysis Date: **12/15/2022**	SeqNo: **3364955** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A93335**	RunNo: **93335**
Prep Date:	Analysis Date: **12/15/2022**	SeqNo: **3364956** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0010	0.0010	0.001000	0	101	50	150			
Arsenic	0.0012	0.0010	0.001000	0	118	50	150			
Lead	0.00051	0.00050	0.0005000	0	102	50	150			
Selenium	0.0021	0.0010	0.001000	0	214	50	150			S

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A93335**	RunNo: **93335**
Prep Date:	Analysis Date: **12/15/2022**	SeqNo: **3364957** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.7	85	115			
Arsenic	0.025	0.0010	0.02500	0	98.8	85	115			
Lead	0.012	0.00050	0.01250	0	95.7	85	115			
Selenium	0.023	0.0010	0.02500	0	92.1	85	115			

Sample ID: **2212442-001EMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **EB-12-7-22**	Batch ID: **A93335**	RunNo: **93335**
Prep Date:	Analysis Date: **12/15/2022**	SeqNo: **3364973** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.011	0.00050	0.01250	0	91.3	70	130			

Sample ID: **2212442-001EMSDL**	SampType: **MSD**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **EB-12-7-22**	Batch ID: **A93335**	RunNo: **93335**
Prep Date:	Analysis Date: **12/15/2022**	SeqNo: **3364974** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.011	0.00050	0.01250	0	87.2	70	130	4.65	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212442**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A93438**	RunNo: **93438**
Prep Date:	Analysis Date: **12/20/2022**	SeqNo: **3370010** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A93438**	RunNo: **93438**
Prep Date:	Analysis Date: **12/20/2022**	SeqNo: **3370011** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.00095	0.0010	0.001000	0	94.8	50	150			J
Selenium	0.0011	0.0010	0.001000	0	113	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A93438**	RunNo: **93438**
Prep Date:	Analysis Date: **12/20/2022**	SeqNo: **3370012** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	94.3	85	115			
Selenium	0.025	0.0010	0.02500	0	99.4	85	115			

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A93556**	RunNo: **93556**
Prep Date:	Analysis Date: **12/27/2022**	SeqNo: **3375278** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A93556**	RunNo: **93556**
Prep Date:	Analysis Date: **12/27/2022**	SeqNo: **3375279** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00091	0.0010	0.001000	0	91.4	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A93556**	RunNo: **93556**
Prep Date:	Analysis Date: **12/27/2022**	SeqNo: **3375281** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	94.3	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212442**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-72128**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **PBW**	Batch ID: **72128**	RunNo: **93362**							
Prep Date: **12/15/2022**	Analysis Date: **12/16/2022**	SeqNo: **3366417**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-72128**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **BatchQC**	Batch ID: **72128**	RunNo: **93362**							
Prep Date: **12/15/2022**	Analysis Date: **12/16/2022**	SeqNo: **3366418**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00018	0.00020	0.0001500	0	121	50	150			J

Sample ID: **LCS-72128**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **LCSW**	Batch ID: **72128**	RunNo: **93362**							
Prep Date: **12/15/2022**	Analysis Date: **12/16/2022**	SeqNo: **3366419**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0049	0.00020	0.005000	0	98.1	85	115			

Sample ID: **2212442-003DMS**	SampType: **MS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **OW-12**	Batch ID: **72128**	RunNo: **93362**							
Prep Date: **12/15/2022**	Analysis Date: **12/16/2022**	SeqNo: **3366474**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0060	0.00020	0.005000	0.0001319	117	75	125			

Sample ID: **2212442-003DMSD**	SampType: **MSD**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **OW-12**	Batch ID: **72128**	RunNo: **93362**							
Prep Date: **12/15/2022**	Analysis Date: **12/16/2022**	SeqNo: **3366475**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0061	0.00020	0.005000	0.0001319	120	75	125	1.95	20	

Sample ID: **MB-72200**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **PBW**	Batch ID: **72200**	RunNo: **93426**							
Prep Date: **12/20/2022**	Analysis Date: **12/20/2022**	SeqNo: **3369558**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212442**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **LCSLL-72200**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC**	Batch ID: **72200**	RunNo: **93426**
Prep Date: **12/20/2022**	Analysis Date: **12/20/2022**	SeqNo: **3369559** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00021	0.00020	0.0001500	0	138	50	150			

Sample ID: **LCS-72200**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW**	Batch ID: **72200**	RunNo: **93426**
Prep Date: **12/20/2022**	Analysis Date: **12/20/2022**	SeqNo: **3369560** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0052	0.00020	0.005000	0	105	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212442**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-72189**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **72189**	RunNo: **93452**
Prep Date: **12/20/2022**	Analysis Date: **12/20/2022**	SeqNo: **3370710** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-72189**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW**	Batch ID: **72189**	RunNo: **93452**
Prep Date: **12/20/2022**	Analysis Date: **12/20/2022**	SeqNo: **3370713** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	113	70	130			

Sample ID: **MB-72189**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **72189**	RunNo: **93452**
Prep Date: **12/20/2022**	Analysis Date: **12/20/2022**	SeqNo: **3370721** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212442**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-71994**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **PBW**	Batch ID: **71994**	RunNo: **93268**
Prep Date: **12/9/2022**	Analysis Date: **12/14/2022**	SeqNo: **3365633** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.15	0.064								
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.033		0.03750		86.7	15.9	177			

Sample ID: **LCS-71994**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSW**	Batch ID: **71994**	RunNo: **93268**
Prep Date: **12/9/2022**	Analysis Date: **12/14/2022**	SeqNo: **3365634** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.21	0.064	0.1875	0	112	31.2	125			B
Surr: DNOP	0.018		0.01875		97.7	15.9	177			

Sample ID: **LCSD-71994**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02**	Batch ID: **71994**	RunNo: **93268**
Prep Date: **12/9/2022**	Analysis Date: **12/14/2022**	SeqNo: **3365635** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.21	0.064	0.1875	0	114	31.2	125	1.68	20	B
Surr: DNOP	0.017		0.01875		91.3	15.9	177	0	0	

Sample ID: **MB-72049**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **PBW**	Batch ID: **72049**	RunNo: **93339**
Prep Date: **12/13/2022**	Analysis Date: **12/16/2022**	SeqNo: **3366205** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.080	0.064								
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.033		0.03750		86.9	15.9	177			

Sample ID: **LCS-72049**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSW**	Batch ID: **72049**	RunNo: **93339**
Prep Date: **12/13/2022**	Analysis Date: **12/16/2022**	SeqNo: **3366206** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.23	0.064	0.1875	0	122	31.2	125			B
Surr: DNOP	0.021		0.01875		110	15.9	177			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212442**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **LCSD-72049**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02**	Batch ID: **72049**	RunNo: **93339**
Prep Date: **12/13/2022**	Analysis Date: **12/16/2022**	SeqNo: **3366207** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.18	0.064	0.1875	0	97.5	31.2	125	22.7	20	BR
Surr: DNOP	0.020		0.01875		107	15.9	177	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212442**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **R93213**	RunNo: **93213**
Prep Date:	Analysis Date: **12/13/2022**	SeqNo: **3368698** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.47	0.050	0.5000	0	94.6	80	120			
Surr: BFB	46		20.00		228	70	130			S

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **R93213**	RunNo: **93213**
Prep Date:	Analysis Date: **12/13/2022**	SeqNo: **3368699** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	21		20.00		105	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212442**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R93331**	RunNo: **93331**
Prep Date:	Analysis Date: **12/15/2022**	SeqNo: **3364555** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	23	1.0	20.00	0	116	70	130			
Toluene	22	1.0	20.00	0	111	70	130			
Chlorobenzene	21	1.0	20.00	0	104	70	130			
1,1-Dichloroethene	21	1.0	20.00	0	104	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	101	70	130			
Surr: 1,2-Dichloroethane-d4	9.7		10.00		97.1	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	9.6		10.00		95.5	70	130			
Surr: Toluene-d8	10		10.00		103	70	130			

Sample ID: **100ng lcs2**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R93331**	RunNo: **93331**
Prep Date:	Analysis Date: **12/15/2022**	SeqNo: **3364556** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	24	1.0	20.00	0	121	70	130			
Toluene	23	1.0	20.00	0	113	70	130			
Chlorobenzene	21	1.0	20.00	0	104	70	130			
1,1-Dichloroethene	21	1.0	20.00	0	105	70	130			
Trichloroethene (TCE)	21	1.0	20.00	0	105	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		106	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		106	70	130			
Surr: Dibromofluoromethane	10		10.00		100	70	130			
Surr: Toluene-d8	11		10.00		105	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R93331**	RunNo: **93331**
Prep Date:	Analysis Date: **12/15/2022**	SeqNo: **3364578** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212442**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R93331**	RunNo: **93331**
Prep Date:	Analysis Date: **12/15/2022**	SeqNo: **3364578** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212442**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R93331**	RunNo: **93331**
Prep Date:	Analysis Date: **12/15/2022**	SeqNo: **3364578** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		115	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	10		10.00		103	70	130			
Surr: Toluene-d8	11		10.00		107	70	130			

Sample ID: **mb2**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R93331**	RunNo: **93331**
Prep Date:	Analysis Date: **12/15/2022**	SeqNo: **3364579** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212442**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb2**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R93331**	RunNo: **93331**
Prep Date:	Analysis Date: **12/15/2022**	SeqNo: **3364579** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212442**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb2**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R93331**	RunNo: **93331**
Prep Date:	Analysis Date: **12/15/2022**	SeqNo: **3364579** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		112	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		105	70	130			
Surr: Dibromofluoromethane	9.9		10.00		99.5	70	130			
Surr: Toluene-d8	11		10.00		105	70	130			

Sample ID: **100ng lcs3**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R93377**	RunNo: **93377**
Prep Date:	Analysis Date: **12/16/2022**	SeqNo: **3367188** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	110	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		97.8	70	130			
Surr: Dibromofluoromethane	11		10.00		106	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R93377**	RunNo: **93377**
Prep Date:	Analysis Date: **12/16/2022**	SeqNo: **3367221** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		100	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	11		10.00		110	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212442**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R93377**	RunNo: **93377**
Prep Date:	Analysis Date: **12/16/2022**	SeqNo: **3367221** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Toluene-d8	10		10.00		104	70	130			

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R93479**	RunNo: **93479**
Prep Date:	Analysis Date: **12/21/2022**	SeqNo: **3371419** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	112	70	130			
Toluene	23	1.0	20.00	0	114	70	130			
Chlorobenzene	21	1.0	20.00	0	105	70	130			
1,1-Dichloroethene	22	1.0	20.00	0	112	70	130			
Trichloroethene (TCE)	23	1.0	20.00	0	113	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		106	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		97.8	70	130			
Surr: Dibromofluoromethane	11		10.00		105	70	130			
Surr: Toluene-d8	10		10.00		104	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R93479**	RunNo: **93479**
Prep Date:	Analysis Date: **12/21/2022**	SeqNo: **3371446** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212442**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R93479**	RunNo: **93479**
Prep Date:	Analysis Date: **12/21/2022**	SeqNo: **3371446** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		105	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	11		10.00		106	70	130			
Surr: Toluene-d8	11		10.00		106	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212442**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb-71974**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **71974**	RunNo: **93247**
Prep Date: **12/9/2022**	Analysis Date: **12/13/2022**	SeqNo: **3360800** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Anthracene	ND	10								
Benz(a)anthracene	ND	5.0								
Benzo(b)fluoranthene	ND	10								
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	10								
2,4-Dinitrophenol	ND	20								
Fluoranthene	ND	10								
Fluorene	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
1-Methylnaphthalene	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
Naphthalene	ND	5.0								
Phenanthrene	ND	10								
Phenol	ND	20								
Pyrene	ND	10								
Pyridine	ND	40								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	79		200.0		39.6	15	84.5			
Surr: Phenol-d5	62		200.0		30.9	15	67			
Surr: 2,4,6-Tribromophenol	110		200.0		52.7	15	108			
Surr: Nitrobenzene-d5	51		100.0		51.1	16.8	112			
Surr: 2-Fluorobiphenyl	44		100.0		44.2	15	101			
Surr: 4-Terphenyl-d14	84		100.0		84.4	34.4	134			

Sample ID: **lcs-71974**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **71974**	RunNo: **93247**
Prep Date: **12/9/2022**	Analysis Date: **12/13/2022**	SeqNo: **3360801** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212442**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **lcs-71974**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **71974**	RunNo: **93247**
Prep Date: **12/9/2022**	Analysis Date: **12/13/2022**	SeqNo: **3360801** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	63	10	100.0	0	62.7	21.3	104			
1,4-Dichlorobenzene	45	5.0	100.0	0	44.6	15	89.8			
Phenol	90	20	200.0	0	44.9	17	61.1			
Pyrene	89	10	100.0	0	89.1	61	123			
Surr: 2-Fluorophenol	100		200.0		50.6	15	84.5			
Surr: Phenol-d5	78		200.0		39.1	15	67			
Surr: 2,4,6-Tribromophenol	170		200.0		83.5	15	108			
Surr: Nitrobenzene-d5	70		100.0		70.4	16.8	112			
Surr: 2-Fluorobiphenyl	60		100.0		60.2	15	101			
Surr: 4-Terphenyl-d14	98		100.0		97.9	34.4	134			

Sample ID: **lcsD-71974**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **71974**	RunNo: **93247**
Prep Date: **12/9/2022**	Analysis Date: **12/13/2022**	SeqNo: **3360802** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	57	10	100.0	0	57.2	21.3	104	9.14	45.3	
1,4-Dichlorobenzene	39	5.0	100.0	0	39.0	15	89.8	13.5	39.6	
Phenol	75	20	200.0	0	37.7	17	61.1	17.4	42.5	
Pyrene	79	10	100.0	0	78.8	61	123	12.3	11.8	R
Surr: 2-Fluorophenol	69		200.0		34.6	15	84.5	0	0	
Surr: Phenol-d5	69		200.0		34.3	15	67	0	0	
Surr: 2,4,6-Tribromophenol	94		200.0		47.2	15	108	0	0	
Surr: Nitrobenzene-d5	62		100.0		61.6	16.8	112	0	0	
Surr: 2-Fluorobiphenyl	56		100.0		55.7	15	101	0	0	
Surr: 4-Terphenyl-d14	94		100.0		94.1	34.4	134	0	0	

Sample ID: **mb-72036**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **72036**	RunNo: **93376**
Prep Date: **12/13/2022**	Analysis Date: **12/16/2022**	SeqNo: **3367172** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Anthracene	ND	10								
Benz(a)anthracene	ND	5.0								
Benzo(b)fluoranthene	ND	10								
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212442**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb-72036**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **72036**	RunNo: **93376**
Prep Date: **12/13/2022**	Analysis Date: **12/16/2022**	SeqNo: **3367172** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	10								
2,4-Dinitrophenol	ND	20								
Fluoranthene	ND	10								
Fluorene	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
1-Methylnaphthalene	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
Naphthalene	ND	5.0								
Phenanthrene	ND	10								
Phenol	ND	20								
Pyrene	ND	10								
Pyridine	ND	40								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	61		200.0		30.4	15	84.5			
Surr: Phenol-d5	48		200.0		23.8	15	67			
Surr: 2,4,6-Tribromophenol	94		200.0		47.2	15	108			
Surr: Nitrobenzene-d5	38		100.0		38.1	16.8	112			
Surr: 2-Fluorobiphenyl	31		100.0		31.3	15	101			
Surr: 4-Terphenyl-d14	74		100.0		73.6	34.4	134			

Sample ID: **lcs-72036**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **72036**	RunNo: **93376**
Prep Date: **12/13/2022**	Analysis Date: **12/16/2022**	SeqNo: **3367173** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	61	10	100.0	0	61.1	21.3	104			
1,4-Dichlorobenzene	44	5.0	100.0	0	44.2	15	89.8			
Phenol	81	20	200.0	0	40.7	17	61.1			
Pyrene	95	10	100.0	0	95.1	61	123			
Surr: 2-Fluorophenol	95		200.0		47.5	15	84.5			
Surr: Phenol-d5	71		200.0		35.7	15	67			
Surr: 2,4,6-Tribromophenol	140		200.0		71.6	15	108			
Surr: Nitrobenzene-d5	64		100.0		64.4	16.8	112			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212442**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **lcs-72036**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **72036**	RunNo: **93376**
Prep Date: **12/13/2022**	Analysis Date: **12/16/2022**	SeqNo: **3367173** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorobiphenyl	56		100.0		56.3	15	101			
Surr: 4-Terphenyl-d14	100		100.0		102	34.4	134			

Sample ID: **lcsd-72036**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **72036**	RunNo: **93376**
Prep Date: **12/13/2022**	Analysis Date: **12/16/2022**	SeqNo: **3367174** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	55	10	100.0	0	55.2	21.3	104	10.0	45.3	
1,4-Dichlorobenzene	38	5.0	100.0	0	38.1	15	89.8	14.9	39.6	
Phenol	72	20	200.0	0	36.2	17	61.1	11.6	42.5	
Pyrene	79	10	100.0	0	79.5	61	123	17.9	11.8	R
Surr: 2-Fluorophenol	66		200.0		33.0	15	84.5	0	0	
Surr: Phenol-d5	66		200.0		33.0	15	67	0	0	
Surr: 2,4,6-Tribromophenol	100		200.0		50.3	15	108	0	0	
Surr: Nitrobenzene-d5	62		100.0		62.1	16.8	112	0	0	
Surr: 2-Fluorobiphenyl	53		100.0		53.2	15	101	0	0	
Surr: 4-Terphenyl-d14	94		100.0		93.5	34.4	134	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212442**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb-71974**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **71974**	RunNo: **93217**
Prep Date: **12/9/2022**	Analysis Date: **12/12/2022**	SeqNo: **3359415** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.30								
1-Methylnaphthalene	ND	0.30								
2-Methylnaphthalene	ND	0.30								
Acenaphthene	ND	0.30								
Fluorene	ND	0.30								
Phenanthrene	ND	0.30								
Anthracene	ND	0.30								
Fluoranthene	ND	0.30								
Pyrene	ND	1.0								
Benz(a)anthracene	ND	0.30								
Chrysene	ND	0.30								
Benzo(b)fluoranthene	ND	0.40								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	53		100.0		52.6	15	108			
Surr: 2,4,6-Tribromophenol	77		200.0		38.7	15	112			
Surr: 2-Fluorobiphenyl	49		100.0		48.7	15	107			
Surr: 4-Terphenyl-d14	130		100.0		130	15	166			

Sample ID: **lcs-71974-lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **71974**	RunNo: **93217**
Prep Date: **12/9/2022**	Analysis Date: **12/12/2022**	SeqNo: **3359416** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.88	1.0	2.000	0	44.0	15	60.5			J
Naphthalene	1.3	0.30	2.000	0	67.0	15	78.3			
1-Methylnaphthalene	1.3	0.30	2.000	0	65.0	15	79.6			
2-Methylnaphthalene	1.3	0.30	2.000	0	64.0	15	78.6			
Acenaphthene	1.4	0.30	2.000	0	72.0	15	92			
Fluorene	1.5	0.30	2.000	0	76.0	15	96			
Phenanthrene	1.7	0.30	2.000	0	85.0	21	103			
Anthracene	1.7	0.30	2.000	0	84.0	21.1	106			
Fluoranthene	1.8	0.30	2.000	0	88.0	32.8	119			
Pyrene	1.8	1.0	2.000	0	89.0	34.1	110			
Benz(a)anthracene	1.8	0.30	2.000	0	92.0	32	132			
Chrysene	1.9	0.30	2.000	0	93.0	31.3	112			
Benzo(b)fluoranthene	1.8	0.40	2.000	0	89.0	34.1	119			
Indeno(1,2,3-cd)pyrene	1.9	0.30	2.000	0	93.0	24.7	152			
Surr: Nitrobenzene-d5	68		100.0		67.7	15	108			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212442**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **lcs-71974-lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **71974**	RunNo: **93217**
Prep Date: **12/9/2022**	Analysis Date: **12/12/2022**	SeqNo: **3359416** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	0		200.0		0	15	112			S
Surr: 2-Fluorobiphenyl	56		100.0		56.2	15	107			
Surr: 4-Terphenyl-d14	100		100.0		100	15	166			

Sample ID: **lcsd-71974-lf**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02**	Batch ID: **71974**	RunNo: **93217**
Prep Date: **12/9/2022**	Analysis Date: **12/12/2022**	SeqNo: **3359417** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.86	1.0	2.000	0	43.0	15	60.5	2.30	29.7	J
Naphthalene	1.3	0.30	2.000	0	66.0	15	78.3	1.50	31.7	
1-Methylnaphthalene	1.3	0.30	2.000	0	65.0	15	79.6	0	31.4	
2-Methylnaphthalene	1.3	0.30	2.000	0	64.0	15	78.6	0	30.5	
Acenaphthene	1.4	0.30	2.000	0	71.0	15	92	1.40	30.5	
Fluorene	1.5	0.30	2.000	0	75.0	15	96	1.32	25.1	
Phenanthrene	1.7	0.30	2.000	0	84.0	21	103	1.18	26.4	
Anthracene	1.7	0.30	2.000	0	84.0	21.1	106	0	14.4	
Fluoranthene	1.8	0.30	2.000	0	90.0	32.8	119	2.25	14.8	
Pyrene	1.8	1.0	2.000	0	91.0	34.1	110	2.22	19.2	
Benz(a)anthracene	1.9	0.30	2.000	0	95.0	32	132	3.21	29.3	
Chrysene	1.9	0.30	2.000	0	93.0	31.3	112	0	19	
Benzo(b)fluoranthene	1.8	0.40	2.000	0	90.0	34.1	119	1.12	31.6	
Indeno(1,2,3-cd)pyrene	1.9	0.30	2.000	0	97.0	24.7	152	4.21	21.3	
Surr: Nitrobenzene-d5	66		100.0		65.7	15	108	0	0	
Surr: 2,4,6-Tribromophenol	0		200.0		0	15	112	0	0	S
Surr: 2-Fluorobiphenyl	58		100.0		57.8	15	107	0	0	
Surr: 4-Terphenyl-d14	90		100.0		89.9	15	166	0	0	

Sample ID: **mb-72036**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **72036**	RunNo: **93333**
Prep Date: **12/13/2022**	Analysis Date: **12/15/2022**	SeqNo: **3364749** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.30								
1-Methylnaphthalene	ND	0.30								
2-Methylnaphthalene	ND	0.30								
Acenaphthene	ND	0.30								
Fluorene	ND	0.30								
Phenanthrene	ND	0.30								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212442**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb-72036**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **72036**	RunNo: **93333**
Prep Date: **12/13/2022**	Analysis Date: **12/15/2022**	SeqNo: **3364749** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Anthracene	ND	0.30								
Fluoranthene	ND	0.30								
Pyrene	ND	1.0								
Benz(a)anthracene	ND	0.30								
Chrysene	ND	0.30								
Benzo(b)fluoranthene	ND	0.40								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	41		100.0		40.8	15	108			
Surr: 2,4,6-Tribromophenol	78		200.0		39.0	15	112			
Surr: 2-Fluorobiphenyl	37		100.0		37.2	15	107			
Surr: 4-Terphenyl-d14	120		100.0		115	15	166			

Sample ID: **lcs-72036-lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **72036**	RunNo: **93333**
Prep Date: **12/13/2022**	Analysis Date: **12/16/2022**	SeqNo: **3364750** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.76	0.10	2.000	0	38.0	15	60.5			
Naphthalene	1.1	0.30	2.000	0	56.0	15	78.3			
1-Methylnaphthalene	1.1	0.30	2.000	0	57.0	15	79.6			
2-Methylnaphthalene	1.1	0.30	2.000	0	55.0	15	78.6			
Acenaphthene	1.3	0.30	2.000	0	66.0	15	92			
Fluorene	1.4	0.30	2.000	0	70.0	15	96			
Phenanthrene	1.5	0.30	2.000	0	77.0	21	103			
Anthracene	1.5	0.30	2.000	0	75.0	21.1	106			
Fluoranthene	1.6	0.30	2.000	0	82.0	32.8	119			
Pyrene	1.7	1.0	2.000	0	85.0	34.1	110			
Benz(a)anthracene	1.8	0.30	2.000	0	90.0	32	132			
Chrysene	1.8	0.30	2.000	0	91.0	31.3	112			
Benzo(b)fluoranthene	1.8	0.40	2.000	0	90.0	34.1	119			
Indeno(1,2,3-cd)pyrene	1.9	0.30	2.000	0	96.0	24.7	152			
Surr: Nitrobenzene-d5	71		105.0		68.0	15	108			
Surr: 2,4,6-Tribromophenol	98		210.0		46.8	15	112			
Surr: 2-Fluorobiphenyl	63		105.0		60.2	15	107			
Surr: 4-Terphenyl-d14	110		105.0		101	15	166			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212442**

17-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **lcsd-72036-lf**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02**	Batch ID: **72036**	RunNo: **93333**
Prep Date: **12/13/2022**	Analysis Date: **12/16/2022**	SeqNo: **3364751** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.64	0.10	2.000	0	32.0	15	60.5	17.1	29.7	
Naphthalene	0.80	0.30	2.000	0	40.0	15	78.3	33.3	31.7	R
1-Methylnaphthalene	0.76	0.30	2.000	0	38.0	15	79.6	40.0	31.4	R
2-Methylnaphthalene	0.74	0.30	2.000	0	37.0	15	78.6	39.1	30.5	R
Acenaphthene	0.90	0.30	2.000	0	45.0	15	92	37.8	30.5	R
Fluorene	1.0	0.30	2.000	0	51.0	15	96	31.4	25.1	R
Phenanthrene	1.3	0.30	2.000	0	64.0	21	103	18.4	26.4	
Anthracene	1.3	0.30	2.000	0	65.0	21.1	106	14.3	14.4	
Fluoranthene	1.5	0.30	2.000	0	74.0	32.8	119	10.3	14.8	
Pyrene	1.5	1.0	2.000	0	76.0	34.1	110	11.2	19.2	
Benz(a)anthracene	1.7	0.30	2.000	0	83.0	32	132	8.09	29.3	
Chrysene	1.7	0.30	2.000	0	84.0	31.3	112	8.00	19	
Benzo(b)fluoranthene	1.7	0.40	2.000	0	83.0	34.1	119	8.09	31.6	
Indeno(1,2,3-cd)pyrene	1.8	0.30	2.000	0	89.0	24.7	152	7.57	21.3	
Surr: Nitrobenzene-d5	60		105.0		57.1	15	108	0	0	
Surr: 2,4,6-Tribromophenol	90		210.0		43.0	15	112	0	0	
Surr: 2-Fluorobiphenyl	53		105.0		50.4	15	107	0	0	
Surr: 4-Terphenyl-d14	85		105.0		80.7	15	166	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 3642 of 3808

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
Tel.: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Marathon | Work Order Number: 2212442 | RcptNo: 1

Received By: Tracy Casarrubias 12/8/2022 7:20:00 AM

Completed By: Tracy Casarrubias 12/8/2022 8:20:32 AM

Reviewed By: KPG 12.8.22

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: 18 (<2 or >12 unless noted)
Adjusted? No
Checked by: 12-8-22

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.6	Good	Yes			
2	1.1	Good	Yes			
3	0.4	Good	Yes			
4	6.7	Good	Yes			

Received by OCD: 4/21/2023 9:21:57 AM

Released to Imaging: 4/21/2023 9:40:26 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Client: Marathon Gallup Refinery	X Standard Rush
Mailing Address: 92 Giant Crossing Road, Jamestown, NM 87301	Project Name: 2022 GW Sampling 4th Quarter
Phone #: 808-640-1823	Project #: 697-080-001
email or Fax#:	Project Manager: Lesli Alexander
QA/QC Package: X Standard ☐ Level 4 (Full Validation)	Sampler:
Accreditation: ☐ Az Compliance ☐ NELAC ☐ Other	On Ice: X Yes ☐ No
X EDD (Type)	# of Coolers: 4
	Cooler Temp(including CF): 5.0 Remarks

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2212497
12/7	9:30		FB-12-7-22	13		001
12/7	9:40		OW-64	13		002
12/7	10:05		OW-12	13		003
12/7	10:20		OW-12R	13		004
12/7	10:35		OW-693	15		005
12/7	11:05		OW-57	13		006
12/7	—		Dup. 12-7-22	13		007
12/7	11:05		FB-12-7-22	03		008
12/7	10:25		EB-OW-67	2		009
			Trip Blank			010

Analysis Request

See Analyte	8260B VOC	8270C-SVOC	8270CSIM: PAH, 1,4 Dioxane	8015: TPH GRO/DRO/MRO	E200.7: Metals	E200.7: Dissolved Metals	E245.1 Mercury	E504.1 EDB	E335.4: Cyanide Subbed		537.1:PFAS	SM 5210B: BOD	410.4: COD	
	X	X	X	X	X	X	X	X	X					
	X	X	X	X	X	X	X	X	X					
	X	X	X	X	X	X	X	X	X					
	X	X	X	X	X	X	X	X	X					
	X	X	X	X	X	X	X	X	X		X			
	X	X	X	X	X	X	X	X	X					
	X	X												
											X			

Date	Time:	Relinquished by:	Received by:	Via:	Date	Time
12/7	12:00			Courier	12/8/22	7:20
Date.	Time.	Relinquished by:	Received by:	Via:	Date	Time

1.1 1.2 0.5 0.8 > -01: 1.1 °C 0.4 °C 0.7 °C

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

January 09, 2023

Lesli Alexander

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX (505) 632-3911

RE: 2022 GW Sampling 4th Quarter OrderNo.: 2212630

Dear Lesli Alexander:

Hall Environmental Analysis Laboratory received 9 sample(s) on 12/9/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **2212630**
Date: **1/9/2023**

CLIENT: Marathon
Project: 2022 GW Sampling 4th Quarter

Analytical Notes Regarding EPA Method 8015D DRO/MRO:
The method blank had a low level detection for DRO. Samples with detections are flagged with a "B".

"S" flagged surrogates/spikes denote that the analyte recovery was outstide of the standard limits.

Analytical Report
Lab Order: **2212630**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-8-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/8/2022 9:30:00 AM
Lab ID: 2212630-001A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	12/20/2022 12:04:27 A	A93392
Surr: BFB	84.8	0	70-130		%Rec	1	12/20/2022 12:04:27 A	A93392
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	12/19/2022 8:37:09 PM	R93394
Toluene	ND	0.20	1.0		µg/L	1	12/19/2022 8:37:09 PM	R93394
Ethylbenzene	ND	0.21	1.0		µg/L	1	12/19/2022 8:37:09 PM	R93394
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	12/19/2022 8:37:09 PM	R93394
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	12/19/2022 8:37:09 PM	R93394
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	12/19/2022 8:37:09 PM	R93394
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	12/19/2022 8:37:09 PM	R93394
Acetone	ND	2.5	10		µg/L	1	12/19/2022 8:37:09 PM	R93394
Bromomethane	ND	0.85	3.0		µg/L	1	12/19/2022 8:37:09 PM	R93394
2-Butanone	ND	2.0	10		µg/L	1	12/19/2022 8:37:09 PM	R93394
Carbon disulfide	ND	0.59	10		µg/L	1	12/19/2022 8:37:09 PM	R93394
Chlorobenzene	ND	0.16	1.0		µg/L	1	12/19/2022 8:37:09 PM	R93394
Chloroform	ND	0.13	1.0		µg/L	1	12/19/2022 8:37:09 PM	R93394
Chloromethane	ND	0.41	3.0		µg/L	1	12/19/2022 8:37:09 PM	R93394
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	12/19/2022 8:37:09 PM	R93394
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	12/19/2022 8:37:09 PM	R93394
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	12/19/2022 8:37:09 PM	R93394
Isopropylbenzene	ND	0.18	1.0		µg/L	1	12/19/2022 8:37:09 PM	R93394
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	12/19/2022 8:37:09 PM	R93394
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/19/2022 8:37:09 PM	R93394
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/19/2022 8:37:09 PM	R93394
n-Propylbenzene	ND	0.18	1.0		µg/L	1	12/19/2022 8:37:09 PM	R93394
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	12/19/2022 8:37:09 PM	R93394
Styrene	ND	0.14	1.0		µg/L	1	12/19/2022 8:37:09 PM	R93394
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/19/2022 8:37:09 PM	R93394
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	12/19/2022 8:37:09 PM	R93394
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	12/19/2022 8:37:09 PM	R93394
Vinyl chloride	ND	0.32	1.0		µg/L	1	12/19/2022 8:37:09 PM	R93394
Xylenes, Total	ND	0.37	1.5		µg/L	1	12/19/2022 8:37:09 PM	R93394
Surr: 1,2-Dichloroethane-d4	111	0	70-130		%Rec	1	12/19/2022 8:37:09 PM	R93394
Surr: 4-Bromofluorobenzene	105	0	70-130		%Rec	1	12/19/2022 8:37:09 PM	R93394
Surr: Dibromofluoromethane	106	0	70-130		%Rec	1	12/19/2022 8:37:09 PM	R93394
Surr: Toluene-d8	105	0	70-130		%Rec	1	12/19/2022 8:37:09 PM	R93394

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

Analytical Report
Lab Order: **2212630**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-8-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/8/2022 9:30:00 AM
Lab ID: 2212630-001B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	12/21/2022 2:21:11 PM	72190

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212630**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-8-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/8/2022 9:30:00 AM
Lab ID: 2212630-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **JME**	
Diesel Range Organics (DRO)	0.045	0.016	0.064	JB	mg/L	1	12/16/2022 11:02:04 A	72049
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/16/2022 11:02:04 A	72049
Surr: DNOP	112	0	15.9-177		%Rec	1	12/16/2022 11:02:04 A	72049
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	12/16/2022 4:38:46 PM	72036
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	12/16/2022 4:38:46 PM	72036
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	12/16/2022 4:38:46 PM	72036
Di-n-octyl phthalate	ND	12	20		µg/L	1	12/16/2022 4:38:46 PM	72036
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	12/16/2022 4:38:46 PM	72036
Diethyl phthalate	ND	6.0	10		µg/L	1	12/16/2022 4:38:46 PM	72036
Dimethyl phthalate	ND	6.0	10		µg/L	1	12/16/2022 4:38:46 PM	72036
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	12/16/2022 4:38:46 PM	72036
2,4-Dinitrophenol	ND	16	20		µg/L	1	12/16/2022 4:38:46 PM	72036
2-Methylphenol	ND	5.0	10		µg/L	1	12/16/2022 4:38:46 PM	72036
3+4-Methylphenol	ND	5.1	10		µg/L	1	12/16/2022 4:38:46 PM	72036
Phenol	ND	18	20		µg/L	1	12/16/2022 4:38:46 PM	72036
Pyridine	ND	14	40		µg/L	1	12/16/2022 4:38:46 PM	72036
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	12/16/2022 4:38:46 PM	72036
Surr: 2-Fluorophenol	47.1	0	15-84.5		%Rec	1	12/16/2022 4:38:46 PM	72036
Surr: Phenol-d5	35.7	0	15-67		%Rec	1	12/16/2022 4:38:46 PM	72036
Surr: 2,4,6-Tribromophenol	66.7	0	15-108		%Rec	1	12/16/2022 4:38:46 PM	72036
Surr: Nitrobenzene-d5	60.2	0	16.8-112		%Rec	1	12/16/2022 4:38:46 PM	72036
Surr: 2-Fluorobiphenyl	48.0	0	15-101		%Rec	1	12/16/2022 4:38:46 PM	72036
Surr: 4-Terphenyl-d14	84.7	0	34.4-134		%Rec	1	12/16/2022 4:38:46 PM	72036
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	12/16/2022 4:52:00 AM	72036
Naphthalene	ND	0.20	0.30		µg/L	1	12/16/2022 4:52:00 AM	72036
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	12/16/2022 4:52:00 AM	72036
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	12/16/2022 4:52:00 AM	72036
Acenaphthene	ND	0.14	0.30		µg/L	1	12/16/2022 4:52:00 AM	72036
Fluorene	ND	0.095	0.30		µg/L	1	12/16/2022 4:52:00 AM	72036
Phenanthrene	ND	0.16	0.30		µg/L	1	12/16/2022 4:52:00 AM	72036
Anthracene	ND	0.14	0.30		µg/L	1	12/16/2022 4:52:00 AM	72036
Fluoranthene	ND	0.14	0.30		µg/L	1	12/16/2022 4:52:00 AM	72036
Pyrene	ND	0.32	1.0		µg/L	1	12/16/2022 4:52:00 AM	72036
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	12/16/2022 4:52:00 AM	72036
Chrysene	ND	0.25	0.30		µg/L	1	12/16/2022 4:52:00 AM	72036
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	12/16/2022 4:52:00 AM	72036
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	12/16/2022 4:52:00 AM	72036

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212630**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-8-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/8/2022 9:30:00 AM
Lab ID: 2212630-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	69.9	0	15-108		%Rec	1	12/16/2022 4:52:00 AM	72036
Surr: 2-Fluorobiphenyl	58.4	0	15-107		%Rec	1	12/16/2022 4:52:00 AM	72036
Surr: 4-Terphenyl-d14	125	0	15-166		%Rec	1	12/16/2022 4:52:00 AM	72036

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212630**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-8-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/8/2022 9:30:00 AM
Lab ID: 2212630-001D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	ND	0.0016	0.0030		mg/L	1	12/13/2022 8:08:42 PM	72026
Beryllium	ND	0.00060	0.0020		mg/L	1	12/13/2022 8:08:42 PM	72026
Cadmium	ND	0.0018	0.0020		mg/L	1	12/13/2022 8:08:42 PM	72026
Chromium	ND	0.0020	0.0060		mg/L	1	12/13/2022 8:08:42 PM	72026
Cobalt	ND	0.0035	0.0060		mg/L	1	12/13/2022 8:08:42 PM	72026
Nickel	ND	0.0053	0.010		mg/L	1	12/13/2022 8:08:42 PM	72026
Silver	ND	0.0018	0.0050		mg/L	1	12/13/2022 8:08:42 PM	72026
Vanadium	ND	0.0035	0.050		mg/L	1	12/13/2022 8:08:42 PM	72026
Zinc	ND	0.0039	0.010		mg/L	1	12/13/2022 8:08:42 PM	72026
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	12/19/2022 12:55:36 P	72026
Arsenic	ND	0.00022	0.0010		mg/L	1	12/19/2022 12:55:36 P	72026
Lead	ND	0.00019	0.00050		mg/L	1	12/19/2022 12:55:36 P	72026
Selenium	ND	0.00089	0.0010		mg/L	1	12/21/2022 4:31:41 PM	72026
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/20/2022 12:53:36 P	72201

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212630**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-8-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/8/2022 9:30:00 AM
Lab ID: 2212630-001E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **VP**	
Barium	ND	0.0011	0.0020		mg/L	1	12/22/2022 5:28:04 PM	B93514
Beryllium	ND	0.00059	0.0020		mg/L	1	12/22/2022 5:28:04 PM	B93514
Cadmium	ND	0.00098	0.0020		mg/L	1	12/22/2022 5:28:04 PM	B93514
Chromium	ND	0.0020	0.0060		mg/L	1	12/22/2022 5:28:04 PM	B93514
Cobalt	ND	0.0024	0.0060		mg/L	1	12/22/2022 5:28:04 PM	B93514
Nickel	ND	0.0033	0.010		mg/L	1	12/22/2022 5:28:04 PM	B93514
Silver	ND	0.0013	0.0050		mg/L	1	12/22/2022 5:28:04 PM	B93514
Vanadium	ND	0.0017	0.050		mg/L	1	12/22/2022 5:28:04 PM	B93514
Zinc	ND	0.0032	0.010		mg/L	1	12/22/2022 5:28:04 PM	B93514
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	12/15/2022 4:02:59 PM	D93335
Arsenic	ND	0.00012	0.0010		mg/L	1	12/15/2022 4:02:59 PM	D93335
Lead	ND	0.000057	0.00050		mg/L	1	12/15/2022 4:02:59 PM	D93335
Selenium	ND	0.00034	0.0010		mg/L	1	12/15/2022 4:02:59 PM	D93335
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/20/2022 12:55:44 P	72201

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212630**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/8/2022 9:50:00 AM
Lab ID: 2212630-002A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	12/20/2022 12:27:36 A	A93392
Surr: BFB	84.4	0	70-130		%Rec	1	12/20/2022 12:27:36 A	A93392
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	12/19/2022 9:05:39 PM	R93394
Toluene	ND	0.20	1.0		µg/L	1	12/19/2022 9:05:39 PM	R93394
Ethylbenzene	ND	0.21	1.0		µg/L	1	12/19/2022 9:05:39 PM	R93394
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	12/19/2022 9:05:39 PM	R93394
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	12/19/2022 9:05:39 PM	R93394
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	12/19/2022 9:05:39 PM	R93394
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	12/19/2022 9:05:39 PM	R93394
Acetone	ND	2.5	10		µg/L	1	12/19/2022 9:05:39 PM	R93394
Bromomethane	ND	0.85	3.0		µg/L	1	12/19/2022 9:05:39 PM	R93394
2-Butanone	ND	2.0	10		µg/L	1	12/19/2022 9:05:39 PM	R93394
Carbon disulfide	ND	0.59	10		µg/L	1	12/19/2022 9:05:39 PM	R93394
Chlorobenzene	ND	0.16	1.0		µg/L	1	12/19/2022 9:05:39 PM	R93394
Chloroform	ND	0.13	1.0		µg/L	1	12/19/2022 9:05:39 PM	R93394
Chloromethane	ND	0.41	3.0		µg/L	1	12/19/2022 9:05:39 PM	R93394
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	12/19/2022 9:05:39 PM	R93394
1,1-Dichloroethane	1.0	0.27	1.0		µg/L	1	12/19/2022 9:05:39 PM	R93394
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	12/19/2022 9:05:39 PM	R93394
Isopropylbenzene	ND	0.18	1.0		µg/L	1	12/19/2022 9:05:39 PM	R93394
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	12/19/2022 9:05:39 PM	R93394
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/19/2022 9:05:39 PM	R93394
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/19/2022 9:05:39 PM	R93394
n-Propylbenzene	ND	0.18	1.0		µg/L	1	12/19/2022 9:05:39 PM	R93394
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	12/19/2022 9:05:39 PM	R93394
Styrene	ND	0.14	1.0		µg/L	1	12/19/2022 9:05:39 PM	R93394
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/19/2022 9:05:39 PM	R93394
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	12/19/2022 9:05:39 PM	R93394
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	12/19/2022 9:05:39 PM	R93394
Vinyl chloride	ND	0.32	1.0		µg/L	1	12/19/2022 9:05:39 PM	R93394
Xylenes, Total	ND	0.37	1.5		µg/L	1	12/19/2022 9:05:39 PM	R93394
Surr: 1,2-Dichloroethane-d4	112	0	70-130		%Rec	1	12/19/2022 9:05:39 PM	R93394
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	1	12/19/2022 9:05:39 PM	R93394
Surr: Dibromofluoromethane	104	0	70-130		%Rec	1	12/19/2022 9:05:39 PM	R93394
Surr: Toluene-d8	107	0	70-130		%Rec	1	12/19/2022 9:05:39 PM	R93394

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212630**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/8/2022 9:50:00 AM
Lab ID: 2212630-002B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	12/21/2022 2:36:12 PM	72190

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212630**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/8/2022 9:50:00 AM
Lab ID: 2212630-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **JME**	
Diesel Range Organics (DRO)	0.067	0.016	0.064	B	mg/L	1	12/16/2022 11:25:49 A	72049
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/16/2022 11:25:49 A	72049
Surr: DNOP	111	0	15.9-177		%Rec	1	12/16/2022 11:25:49 A	72049
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	12/16/2022 5:19:49 PM	72036
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	12/16/2022 5:19:49 PM	72036
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	12/16/2022 5:19:49 PM	72036
Di-n-octyl phthalate	ND	12	20		µg/L	1	12/16/2022 5:19:49 PM	72036
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	12/16/2022 5:19:49 PM	72036
Diethyl phthalate	ND	6.0	10		µg/L	1	12/16/2022 5:19:49 PM	72036
Dimethyl phthalate	ND	6.0	10		µg/L	1	12/16/2022 5:19:49 PM	72036
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	12/16/2022 5:19:49 PM	72036
2,4-Dinitrophenol	ND	16	20		µg/L	1	12/16/2022 5:19:49 PM	72036
2-Methylphenol	ND	5.0	10		µg/L	1	12/16/2022 5:19:49 PM	72036
3+4-Methylphenol	ND	5.1	10		µg/L	1	12/16/2022 5:19:49 PM	72036
Phenol	ND	18	20		µg/L	1	12/16/2022 5:19:49 PM	72036
Pyridine	ND	14	40		µg/L	1	12/16/2022 5:19:49 PM	72036
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	12/16/2022 5:19:49 PM	72036
Surr: 2-Fluorophenol	49.8	0	15-84.5		%Rec	1	12/16/2022 5:19:49 PM	72036
Surr: Phenol-d5	41.8	0	15-67		%Rec	1	12/16/2022 5:19:49 PM	72036
Surr: 2,4,6-Tribromophenol	43.5	0	15-108		%Rec	1	12/16/2022 5:19:49 PM	72036
Surr: Nitrobenzene-d5	73.3	0	16.8-112		%Rec	1	12/16/2022 5:19:49 PM	72036
Surr: 2-Fluorobiphenyl	62.8	0	15-101		%Rec	1	12/16/2022 5:19:49 PM	72036
Surr: 4-Terphenyl-d14	90.8	0	34.4-134		%Rec	1	12/16/2022 5:19:49 PM	72036
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	12	0.11	1.0		µg/L	1	12/16/2022 5:36:00 AM	72036
Naphthalene	ND	0.20	0.30		µg/L	1	12/16/2022 5:36:00 AM	72036
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	12/16/2022 5:36:00 AM	72036
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	12/16/2022 5:36:00 AM	72036
Acenaphthene	ND	0.14	0.30		µg/L	1	12/16/2022 5:36:00 AM	72036
Fluorene	ND	0.095	0.30		µg/L	1	12/16/2022 5:36:00 AM	72036
Phenanthrene	ND	0.16	0.30		µg/L	1	12/16/2022 5:36:00 AM	72036
Anthracene	ND	0.14	0.30		µg/L	1	12/16/2022 5:36:00 AM	72036
Fluoranthene	ND	0.14	0.30		µg/L	1	12/16/2022 5:36:00 AM	72036
Pyrene	ND	0.32	1.0		µg/L	1	12/16/2022 5:36:00 AM	72036
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	12/16/2022 5:36:00 AM	72036
Chrysene	ND	0.25	0.30		µg/L	1	12/16/2022 5:36:00 AM	72036
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	12/16/2022 5:36:00 AM	72036
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	12/16/2022 5:36:00 AM	72036

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212630**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/8/2022 9:50:00 AM
Lab ID: 2212630-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	75.7	0	15-108		%Rec	1	12/16/2022 5:36:00 AM	72036
Surr: 2-Fluorobiphenyl	68.3	0	15-107		%Rec	1	12/16/2022 5:36:00 AM	72036
Surr: 4-Terphenyl-d14	122	0	15-166		%Rec	1	12/16/2022 5:36:00 AM	72036

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212630**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/8/2022 9:50:00 AM
Lab ID: 2212630-002D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.10	0.0016	0.0030		mg/L	1	12/13/2022 8:14:38 PM	72026
Beryllium	0.0010	0.00060	0.0020	J	mg/L	1	12/13/2022 8:14:38 PM	72026
Cadmium	ND	0.0018	0.0020		mg/L	1	12/13/2022 8:14:38 PM	72026
Chromium	0.0034	0.0020	0.0060	J	mg/L	1	12/13/2022 8:14:38 PM	72026
Cobalt	ND	0.0035	0.0060		mg/L	1	12/13/2022 8:14:38 PM	72026
Nickel	0.011	0.0053	0.010		mg/L	1	12/13/2022 8:14:38 PM	72026
Silver	0.0082	0.0018	0.0050		mg/L	1	12/13/2022 8:14:38 PM	72026
Vanadium	0.016	0.0035	0.050	J	mg/L	1	12/13/2022 8:14:38 PM	72026
Zinc	0.0051	0.0039	0.010	J	mg/L	1	12/13/2022 8:14:38 PM	72026
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	12/21/2022 3:43:39 PM	72026
Arsenic	ND	0.0011	0.0050		mg/L	5	12/21/2022 3:43:39 PM	72026
Lead	0.0019	0.00097	0.0025	J	mg/L	5	12/19/2022 3:28:09 PM	72026
Selenium	0.0052	0.0044	0.0050		mg/L	5	12/21/2022 4:36:35 PM	72026
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/20/2022 1:49:58 PM	72201

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212630**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/8/2022 9:50:00 AM
Lab ID: 2212630-002E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **VP**	
Barium	0.045	0.0011	0.0020		mg/L	1	12/22/2022 5:32:57 PM	B93514
Beryllium	ND	0.00059	0.0020		mg/L	1	12/22/2022 5:32:57 PM	B93514
Cadmium	ND	0.00098	0.0020		mg/L	1	12/22/2022 5:32:57 PM	B93514
Chromium	ND	0.0020	0.0060		mg/L	1	12/22/2022 5:32:57 PM	B93514
Cobalt	ND	0.0024	0.0060		mg/L	1	12/22/2022 5:32:57 PM	B93514
Nickel	0.0096	0.0033	0.010	J	mg/L	1	12/22/2022 5:32:57 PM	B93514
Silver	0.0070	0.0013	0.0050		mg/L	1	12/22/2022 5:32:57 PM	B93514
Vanadium	0.0097	0.0017	0.050	J	mg/L	1	12/22/2022 5:32:57 PM	B93514
Zinc	0.011	0.0032	0.010		mg/L	1	12/22/2022 5:32:57 PM	B93514
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	12/15/2022 6:02:53 PM	D93335
Arsenic	0.0010	0.00061	0.0050	J	mg/L	5	12/15/2022 6:02:53 PM	D93335
Lead	ND	0.00028	0.0025		mg/L	5	12/15/2022 6:02:53 PM	D93335
Selenium	ND	0.0017	0.0050		mg/L	5	12/15/2022 6:02:53 PM	D93335
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/20/2022 1:52:05 PM	72201

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212630**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/8/2022 10:15:00 AM
Lab ID: 2212630-003A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	0.36	0.0090	0.050		mg/L	1	12/20/2022 1:37:03 AM	A93392
Surr: BFB	83.6	0	70-130		%Rec	1	12/20/2022 1:37:03 AM	A93392
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.45	2.0		µg/L	2	12/20/2022 12:24:33 A	R93394
Toluene	ND	0.40	2.0		µg/L	2	12/20/2022 12:24:33 A	R93394
Ethylbenzene	ND	0.43	2.0		µg/L	2	12/20/2022 12:24:33 A	R93394
Methyl tert-butyl ether (MTBE)	460	7.9	20		µg/L	20	12/19/2022 11:56:13 P	R93394
1,2,4-Trimethylbenzene	ND	0.24	2.0		µg/L	2	12/20/2022 12:24:33 A	R93394
1,3,5-Trimethylbenzene	ND	0.36	2.0		µg/L	2	12/20/2022 12:24:33 A	R93394
1,2-Dichloroethane (EDC)	14	0.51	2.0		µg/L	2	12/20/2022 12:24:33 A	R93394
Acetone	ND	5.0	20		µg/L	2	12/20/2022 12:24:33 A	R93394
Bromomethane	ND	1.7	6.0		µg/L	2	12/20/2022 12:24:33 A	R93394
2-Butanone	ND	4.1	20		µg/L	2	12/20/2022 12:24:33 A	R93394
Carbon disulfide	ND	1.2	20		µg/L	2	12/20/2022 12:24:33 A	R93394
Chlorobenzene	ND	0.31	2.0		µg/L	2	12/20/2022 12:24:33 A	R93394
Chloroform	ND	0.27	2.0		µg/L	2	12/20/2022 12:24:33 A	R93394
Chloromethane	ND	0.82	6.0		µg/L	2	12/20/2022 12:24:33 A	R93394
cis-1,2-DCE	3.2	0.78	2.0		µg/L	2	12/20/2022 12:24:33 A	R93394
1,1-Dichloroethane	42	0.55	2.0		µg/L	2	12/20/2022 12:24:33 A	R93394
1,1-Dichloroethene	44	0.40	2.0		µg/L	2	12/20/2022 12:24:33 A	R93394
Isopropylbenzene	ND	0.37	2.0		µg/L	2	12/20/2022 12:24:33 A	R93394
4-Isopropyltoluene	ND	0.40	2.0		µg/L	2	12/20/2022 12:24:33 A	R93394
Methylene Chloride	ND	1.0	6.0		µg/L	2	12/20/2022 12:24:33 A	R93394
n-Butylbenzene	ND	0.51	6.0		µg/L	2	12/20/2022 12:24:33 A	R93394
n-Propylbenzene	ND	0.36	2.0		µg/L	2	12/20/2022 12:24:33 A	R93394
sec-Butylbenzene	ND	0.29	2.0		µg/L	2	12/20/2022 12:24:33 A	R93394
Styrene	ND	0.27	2.0		µg/L	2	12/20/2022 12:24:33 A	R93394
Tetrachloroethene (PCE)	ND	0.71	2.0		µg/L	2	12/20/2022 12:24:33 A	R93394
1,1,1-Trichloroethane	2.1	0.60	2.0		µg/L	2	12/20/2022 12:24:33 A	R93394
Trichloroethene (TCE)	6.1	0.41	2.0		µg/L	2	12/20/2022 12:24:33 A	R93394
Vinyl chloride	ND	0.64	2.0		µg/L	2	12/20/2022 12:24:33 A	R93394
Xylenes, Total	ND	0.74	3.0		µg/L	2	12/20/2022 12:24:33 A	R93394
Surr: 1,2-Dichloroethane-d4	112	0	70-130		%Rec	2	12/20/2022 12:24:33 A	R93394
Surr: 4-Bromofluorobenzene	106	0	70-130		%Rec	2	12/20/2022 12:24:33 A	R93394
Surr: Dibromofluoromethane	91.7	0	70-130		%Rec	2	12/20/2022 12:24:33 A	R93394
Surr: Toluene-d8	111	0	70-130		%Rec	2	12/20/2022 12:24:33 A	R93394

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212630**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/8/2022 10:15:00 AM
Lab ID: 2212630-003B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	12/21/2022 2:51:14 PM	72190

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212630**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/8/2022 10:15:00 AM
Lab ID: 2212630-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **JME**	
Diesel Range Organics (DRO)	0.23	0.016	0.064	B	mg/L	1	12/16/2022 11:49:34 A	72049
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/16/2022 11:49:34 A	72049
Surr: DNOP	110	0	15.9-177		%Rec	1	12/16/2022 11:49:34 A	72049
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	12/16/2022 6:01:06 PM	72036
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	12/16/2022 6:01:06 PM	72036
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	12/16/2022 6:01:06 PM	72036
Di-n-octyl phthalate	ND	12	20		µg/L	1	12/16/2022 6:01:06 PM	72036
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	12/16/2022 6:01:06 PM	72036
Diethyl phthalate	ND	6.0	10		µg/L	1	12/16/2022 6:01:06 PM	72036
Dimethyl phthalate	ND	6.0	10		µg/L	1	12/16/2022 6:01:06 PM	72036
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	12/16/2022 6:01:06 PM	72036
2,4-Dinitrophenol	ND	16	20		µg/L	1	12/16/2022 6:01:06 PM	72036
2-Methylphenol	ND	5.0	10		µg/L	1	12/16/2022 6:01:06 PM	72036
3+4-Methylphenol	ND	5.1	10		µg/L	1	12/16/2022 6:01:06 PM	72036
Phenol	ND	18	20		µg/L	1	12/16/2022 6:01:06 PM	72036
Pyridine	ND	14	40		µg/L	1	12/16/2022 6:01:06 PM	72036
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	12/16/2022 6:01:06 PM	72036
Surr: 2-Fluorophenol	36.4	0	15-84.5		%Rec	1	12/16/2022 6:01:06 PM	72036
Surr: Phenol-d5	28.7	0	15-67		%Rec	1	12/16/2022 6:01:06 PM	72036
Surr: 2,4,6-Tribromophenol	49.5	0	15-108		%Rec	1	12/16/2022 6:01:06 PM	72036
Surr: Nitrobenzene-d5	48.5	0	16.8-112		%Rec	1	12/16/2022 6:01:06 PM	72036
Surr: 2-Fluorobiphenyl	40.7	0	15-101		%Rec	1	12/16/2022 6:01:06 PM	72036
Surr: 4-Terphenyl-d14	65.1	0	34.4-134		%Rec	1	12/16/2022 6:01:06 PM	72036
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	110	1.1	10		µg/L	10	12/16/2022 12:13:00 P	72036
Naphthalene	0.52	0.20	0.30		µg/L	1	12/16/2022 6:21:00 AM	72036
1-Methylnaphthalene	0.16	0.15	0.30	J	µg/L	1	12/16/2022 6:21:00 AM	72036
2-Methylnaphthalene	0.22	0.14	0.30	J	µg/L	1	12/16/2022 6:21:00 AM	72036
Acenaphthene	ND	0.14	0.30		µg/L	1	12/16/2022 6:21:00 AM	72036
Fluorene	ND	0.095	0.30		µg/L	1	12/16/2022 6:21:00 AM	72036
Phenanthrene	ND	0.16	0.30		µg/L	1	12/16/2022 6:21:00 AM	72036
Anthracene	ND	0.14	0.30		µg/L	1	12/16/2022 6:21:00 AM	72036
Fluoranthene	ND	0.14	0.30		µg/L	1	12/16/2022 6:21:00 AM	72036
Pyrene	ND	0.32	1.0		µg/L	1	12/16/2022 6:21:00 AM	72036
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	12/16/2022 6:21:00 AM	72036
Chrysene	ND	0.25	0.30		µg/L	1	12/16/2022 6:21:00 AM	72036
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	12/16/2022 6:21:00 AM	72036
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	12/16/2022 6:21:00 AM	72036

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212630**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/8/2022 10:15:00 AM
Lab ID: 2212630-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	69.6	0	15-108		%Rec	1	12/16/2022 6:21:00 AM	72036
Surr: 2-Fluorobiphenyl	60.0	0	15-107		%Rec	1	12/16/2022 6:21:00 AM	72036
Surr: 4-Terphenyl-d14	107	0	15-166		%Rec	1	12/16/2022 6:21:00 AM	72036

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212630**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/8/2022 10:15:00 AM
Lab ID: 2212630-003D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.73	0.0016	0.0030		mg/L	1	12/13/2022 8:21:02 PM	72026
Beryllium	0.0050	0.00060	0.0020	*	mg/L	1	12/13/2022 8:21:02 PM	72026
Cadmium	ND	0.0018	0.0020		mg/L	1	12/13/2022 8:21:02 PM	72026
Chromium	0.030	0.0020	0.0060		mg/L	1	12/13/2022 8:21:02 PM	72026
Cobalt	0.018	0.0035	0.0060		mg/L	1	12/13/2022 8:21:02 PM	72026
Nickel	0.041	0.0053	0.010		mg/L	1	12/13/2022 8:21:02 PM	72026
Silver	ND	0.0018	0.0050		mg/L	1	12/13/2022 8:21:02 PM	72026
Vanadium	0.057	0.0035	0.050		mg/L	1	12/13/2022 8:21:02 PM	72026
Zinc	0.047	0.0039	0.010		mg/L	1	12/13/2022 8:21:02 PM	72026
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	12/19/2022 1:00:28 PM	72026
Arsenic	0.0053	0.00022	0.0010		mg/L	1	12/19/2022 1:00:28 PM	72026
Lead	0.029	0.00097	0.0025	*	mg/L	5	12/19/2022 3:30:35 PM	72026
Selenium	0.0067	0.00089	0.0010		mg/L	1	12/21/2022 4:34:07 PM	72026
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/20/2022 1:54:13 PM	72201

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212630**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/8/2022 10:15:00 AM
Lab ID: 2212630-003E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **VP**	
Barium	0.11	0.0011	0.0020		mg/L	1	12/22/2022 5:37:36 PM	B93514
Beryllium	ND	0.00059	0.0020		mg/L	1	12/22/2022 5:37:36 PM	B93514
Cadmium	ND	0.00098	0.0020		mg/L	1	12/22/2022 5:37:36 PM	B93514
Chromium	ND	0.0020	0.0060		mg/L	1	12/22/2022 5:37:36 PM	B93514
Cobalt	ND	0.0024	0.0060		mg/L	1	12/22/2022 5:37:36 PM	B93514
Nickel	0.0046	0.0033	0.010	J	mg/L	1	12/22/2022 5:37:36 PM	B93514
Silver	0.0016	0.0013	0.0050	J	mg/L	1	12/22/2022 5:37:36 PM	B93514
Vanadium	0.0039	0.0017	0.050	J	mg/L	1	12/22/2022 5:37:36 PM	B93514
Zinc	0.0048	0.0032	0.010	J	mg/L	1	12/22/2022 5:37:36 PM	B93514
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	12/15/2022 4:53:40 PM	D93335
Arsenic	0.00068	0.00012	0.0010	J	mg/L	1	12/15/2022 4:53:40 PM	D93335
Lead	0.000093	0.000057	0.00050	J	mg/L	1	12/15/2022 4:53:40 PM	D93335
Selenium	ND	0.00034	0.0010		mg/L	1	12/15/2022 4:53:40 PM	D93335
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/20/2022 1:56:22 PM	72201

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212630**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/8/2022 10:30:00 AM
Lab ID: 2212630-004A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	0.034	0.0090	0.050	J	mg/L	1	12/20/2022 2:00:07 AM	A93392
Surr: BFB	84.1	0	70-130		%Rec	1	12/20/2022 2:00:07 AM	A93392
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	12/20/2022 12:52:52 A	R93394
Toluene	ND	0.20	1.0		µg/L	1	12/20/2022 12:52:52 A	R93394
Ethylbenzene	ND	0.21	1.0		µg/L	1	12/20/2022 12:52:52 A	R93394
Methyl tert-butyl ether (MTBE)	39	0.39	1.0		µg/L	1	12/20/2022 12:52:52 A	R93394
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	12/20/2022 12:52:52 A	R93394
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	12/20/2022 12:52:52 A	R93394
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	12/20/2022 12:52:52 A	R93394
Acetone	ND	2.5	10		µg/L	1	12/20/2022 12:52:52 A	R93394
Bromomethane	ND	0.85	3.0		µg/L	1	12/20/2022 12:52:52 A	R93394
2-Butanone	ND	2.0	10		µg/L	1	12/20/2022 12:52:52 A	R93394
Carbon disulfide	ND	0.59	10		µg/L	1	12/20/2022 12:52:52 A	R93394
Chlorobenzene	ND	0.16	1.0		µg/L	1	12/20/2022 12:52:52 A	R93394
Chloroform	ND	0.13	1.0		µg/L	1	12/20/2022 12:52:52 A	R93394
Chloromethane	ND	0.41	3.0		µg/L	1	12/20/2022 12:52:52 A	R93394
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	12/20/2022 12:52:52 A	R93394
1,1-Dichloroethane	1.9	0.27	1.0		µg/L	1	12/20/2022 12:52:52 A	R93394
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	12/20/2022 12:52:52 A	R93394
Isopropylbenzene	ND	0.18	1.0		µg/L	1	12/20/2022 12:52:52 A	R93394
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	12/20/2022 12:52:52 A	R93394
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/20/2022 12:52:52 A	R93394
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/20/2022 12:52:52 A	R93394
n-Propylbenzene	ND	0.18	1.0		µg/L	1	12/20/2022 12:52:52 A	R93394
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	12/20/2022 12:52:52 A	R93394
Styrene	ND	0.14	1.0		µg/L	1	12/20/2022 12:52:52 A	R93394
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/20/2022 12:52:52 A	R93394
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	12/20/2022 12:52:52 A	R93394
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	12/20/2022 12:52:52 A	R93394
Vinyl chloride	ND	0.32	1.0		µg/L	1	12/20/2022 12:52:52 A	R93394
Xylenes, Total	ND	0.37	1.5		µg/L	1	12/20/2022 12:52:52 A	R93394
Surr: 1,2-Dichloroethane-d4	111	0	70-130		%Rec	1	12/20/2022 12:52:52 A	R93394
Surr: 4-Bromofluorobenzene	105	0	70-130		%Rec	1	12/20/2022 12:52:52 A	R93394
Surr: Dibromofluoromethane	95.4	0	70-130		%Rec	1	12/20/2022 12:52:52 A	R93394
Surr: Toluene-d8	107	0	70-130		%Rec	1	12/20/2022 12:52:52 A	R93394

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212630**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/8/2022 10:30:00 AM
Lab ID: 2212630-004B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0096		µg/L	1	12/21/2022 3:06:13 PM	72190

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212630**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/8/2022 10:30:00 AM
Lab ID: 2212630-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **JME**	
Diesel Range Organics (DRO)	0.17	0.016	0.064	B	mg/L	1	12/16/2022 12:13:18 P	72049
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/16/2022 12:13:18 P	72049
Surr: DNOP	117	0	15.9-177		%Rec	1	12/16/2022 12:13:18 P	72049
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	12/16/2022 6:41:37 PM	72036
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	12/16/2022 6:41:37 PM	72036
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	12/16/2022 6:41:37 PM	72036
Di-n-octyl phthalate	ND	12	20		µg/L	1	12/16/2022 6:41:37 PM	72036
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	12/16/2022 6:41:37 PM	72036
Diethyl phthalate	ND	6.0	10		µg/L	1	12/16/2022 6:41:37 PM	72036
Dimethyl phthalate	ND	6.0	10		µg/L	1	12/16/2022 6:41:37 PM	72036
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	12/16/2022 6:41:37 PM	72036
2,4-Dinitrophenol	ND	16	20		µg/L	1	12/16/2022 6:41:37 PM	72036
2-Methylphenol	ND	5.0	10		µg/L	1	12/16/2022 6:41:37 PM	72036
3+4-Methylphenol	ND	5.1	10		µg/L	1	12/16/2022 6:41:37 PM	72036
Phenol	ND	18	20		µg/L	1	12/16/2022 6:41:37 PM	72036
Pyridine	ND	14	40		µg/L	1	12/16/2022 6:41:37 PM	72036
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	12/16/2022 6:41:37 PM	72036
Surr: 2-Fluorophenol	43.4	0	15-84.5		%Rec	1	12/16/2022 6:41:37 PM	72036
Surr: Phenol-d5	37.9	0	15-67		%Rec	1	12/16/2022 6:41:37 PM	72036
Surr: 2,4,6-Tribromophenol	35.6	0	15-108		%Rec	1	12/16/2022 6:41:37 PM	72036
Surr: Nitrobenzene-d5	61.8	0	16.8-112		%Rec	1	12/16/2022 6:41:37 PM	72036
Surr: 2-Fluorobiphenyl	53.8	0	15-101		%Rec	1	12/16/2022 6:41:37 PM	72036
Surr: 4-Terphenyl-d14	79.4	0	34.4-134		%Rec	1	12/16/2022 6:41:37 PM	72036
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	8.2	0.11	1.0		µg/L	1	12/16/2022 7:06:00 AM	72036
Naphthalene	ND	0.20	0.30		µg/L	1	12/16/2022 7:06:00 AM	72036
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	12/16/2022 7:06:00 AM	72036
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	12/16/2022 7:06:00 AM	72036
Acenaphthene	ND	0.14	0.30		µg/L	1	12/16/2022 7:06:00 AM	72036
Fluorene	ND	0.095	0.30		µg/L	1	12/16/2022 7:06:00 AM	72036
Phenanthrene	ND	0.16	0.30		µg/L	1	12/16/2022 7:06:00 AM	72036
Anthracene	ND	0.14	0.30		µg/L	1	12/16/2022 7:06:00 AM	72036
Fluoranthene	ND	0.14	0.30		µg/L	1	12/16/2022 7:06:00 AM	72036
Pyrene	ND	0.32	1.0		µg/L	1	12/16/2022 7:06:00 AM	72036
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	12/16/2022 7:06:00 AM	72036
Chrysene	ND	0.25	0.30		µg/L	1	12/16/2022 7:06:00 AM	72036
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	12/16/2022 7:06:00 AM	72036
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	12/16/2022 7:06:00 AM	72036

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212630**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/8/2022 10:30:00 AM
Lab ID: 2212630-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	73.1	0	15-108		%Rec	1	12/16/2022 7:06:00 AM	72036
Surr: 2-Fluorobiphenyl	62.9	0	15-107		%Rec	1	12/16/2022 7:06:00 AM	72036
Surr: 4-Terphenyl-d14	112	0	15-166		%Rec	1	12/16/2022 7:06:00 AM	72036

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212630**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/8/2022 10:30:00 AM
Lab ID: 2212630-004D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.087	0.0016	0.0030		mg/L	1	12/13/2022 8:22:56 PM	72026
Beryllium	ND	0.00060	0.0020		mg/L	1	12/13/2022 8:22:56 PM	72026
Cadmium	ND	0.0018	0.0020		mg/L	1	12/13/2022 8:22:56 PM	72026
Chromium	ND	0.0020	0.0060		mg/L	1	12/13/2022 8:22:56 PM	72026
Cobalt	ND	0.0035	0.0060		mg/L	1	12/13/2022 8:22:56 PM	72026
Nickel	0.034	0.0053	0.010		mg/L	1	12/13/2022 8:22:56 PM	72026
Silver	0.0057	0.0018	0.0050		mg/L	1	12/13/2022 8:22:56 PM	72026
Vanadium	0.0063	0.0035	0.050	J	mg/L	1	12/13/2022 8:22:56 PM	72026
Zinc	ND	0.0039	0.010		mg/L	1	12/13/2022 8:22:56 PM	72026
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	12/21/2022 3:48:32 PM	72026
Arsenic	ND	0.0011	0.0050		mg/L	5	12/21/2022 3:48:32 PM	72026
Lead	0.0011	0.00097	0.0025	J	mg/L	5	12/19/2022 3:33:01 PM	72026
Selenium	ND	0.0044	0.0050		mg/L	5	12/22/2022 2:00:58 PM	72026
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/20/2022 1:58:30 PM	72201

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212630**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/8/2022 10:30:00 AM
Lab ID: 2212630-004E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **VP**	
Barium	0.065	0.0011	0.0020		mg/L	1	12/22/2022 5:44:54 PM	B93514
Beryllium	ND	0.00059	0.0020		mg/L	1	12/22/2022 5:44:54 PM	B93514
Cadmium	ND	0.00098	0.0020		mg/L	1	12/22/2022 5:44:54 PM	B93514
Chromium	ND	0.0020	0.0060		mg/L	1	12/22/2022 5:44:54 PM	B93514
Cobalt	ND	0.0024	0.0060		mg/L	1	12/22/2022 5:44:54 PM	B93514
Nickel	0.030	0.0033	0.010		mg/L	1	12/22/2022 5:44:54 PM	B93514
Silver	0.0031	0.0013	0.0050	J	mg/L	1	12/22/2022 5:44:54 PM	B93514
Vanadium	0.0039	0.0017	0.050	J	mg/L	1	12/22/2022 5:44:54 PM	B93514
Zinc	ND	0.0032	0.010		mg/L	1	12/22/2022 5:44:54 PM	B93514
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	12/15/2022 7:16:42 PM	D93335
Arsenic	ND	0.00061	0.0050		mg/L	5	12/20/2022 2:29:47 PM	A93438
Lead	ND	0.00028	0.0025		mg/L	5	12/20/2022 2:29:47 PM	A93438
Selenium	0.0031	0.0017	0.0050	J	mg/L	5	12/20/2022 2:29:47 PM	A93438
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/20/2022 2:00:39 PM	72201

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212630**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-28
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/8/2022 10:40:00 AM
Lab ID: 2212630-005A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	12/20/2022 2:23:12 AM	A93392
Surr: BFB	82.3	0	70-130		%Rec	1	12/20/2022 2:23:12 AM	A93392
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	12/20/2022 1:21:08 AM	R93394
Toluene	ND	0.20	1.0		µg/L	1	12/20/2022 1:21:08 AM	R93394
Ethylbenzene	ND	0.21	1.0		µg/L	1	12/20/2022 1:21:08 AM	R93394
Methyl tert-butyl ether (MTBE)	2.9	0.39	1.0		µg/L	1	12/20/2022 1:21:08 AM	R93394
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	12/20/2022 1:21:08 AM	R93394
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	12/20/2022 1:21:08 AM	R93394
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	12/20/2022 1:21:08 AM	R93394
Acetone	ND	2.5	10		µg/L	1	12/20/2022 1:21:08 AM	R93394
Bromomethane	ND	0.85	3.0		µg/L	1	12/20/2022 1:21:08 AM	R93394
2-Butanone	ND	2.0	10		µg/L	1	12/20/2022 1:21:08 AM	R93394
Carbon disulfide	ND	0.59	10		µg/L	1	12/20/2022 1:21:08 AM	R93394
Chlorobenzene	ND	0.16	1.0		µg/L	1	12/20/2022 1:21:08 AM	R93394
Chloroform	ND	0.13	1.0		µg/L	1	12/20/2022 1:21:08 AM	R93394
Chloromethane	ND	0.41	3.0		µg/L	1	12/20/2022 1:21:08 AM	R93394
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	12/20/2022 1:21:08 AM	R93394
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	12/20/2022 1:21:08 AM	R93394
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	12/20/2022 1:21:08 AM	R93394
Isopropylbenzene	ND	0.18	1.0		µg/L	1	12/20/2022 1:21:08 AM	R93394
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	12/20/2022 1:21:08 AM	R93394
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/20/2022 1:21:08 AM	R93394
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/20/2022 1:21:08 AM	R93394
n-Propylbenzene	ND	0.18	1.0		µg/L	1	12/20/2022 1:21:08 AM	R93394
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	12/20/2022 1:21:08 AM	R93394
Styrene	ND	0.14	1.0		µg/L	1	12/20/2022 1:21:08 AM	R93394
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/20/2022 1:21:08 AM	R93394
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	12/20/2022 1:21:08 AM	R93394
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	12/20/2022 1:21:08 AM	R93394
Vinyl chloride	ND	0.32	1.0		µg/L	1	12/20/2022 1:21:08 AM	R93394
Xylenes, Total	ND	0.37	1.5		µg/L	1	12/20/2022 1:21:08 AM	R93394
Surr: 1,2-Dichloroethane-d4	111	0	70-130		%Rec	1	12/20/2022 1:21:08 AM	R93394
Surr: 4-Bromofluorobenzene	109	0	70-130		%Rec	1	12/20/2022 1:21:08 AM	R93394
Surr: Dibromofluoromethane	96.4	0	70-130		%Rec	1	12/20/2022 1:21:08 AM	R93394
Surr: Toluene-d8	108	0	70-130		%Rec	1	12/20/2022 1:21:08 AM	R93394

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212630**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-28
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/8/2022 10:40:00 AM
Lab ID: 2212630-005B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	12/21/2022 3:21:13 PM	72190

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212630**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-28
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/8/2022 10:40:00 AM
Lab ID: 2212630-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **JME**	
Diesel Range Organics (DRO)	0.20	0.016	0.064	B	mg/L	1	12/16/2022 12:37:01 P	72049
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/16/2022 12:37:01 P	72049
Surr: DNOP	104	0	15.9-177		%Rec	1	12/16/2022 12:37:01 P	72049
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	12/16/2022 7:22:39 PM	72036
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	12/16/2022 7:22:39 PM	72036
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	12/16/2022 7:22:39 PM	72036
Di-n-octyl phthalate	ND	12	20		µg/L	1	12/16/2022 7:22:39 PM	72036
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	12/16/2022 7:22:39 PM	72036
Diethyl phthalate	ND	6.0	10		µg/L	1	12/16/2022 7:22:39 PM	72036
Dimethyl phthalate	ND	6.0	10		µg/L	1	12/16/2022 7:22:39 PM	72036
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	12/16/2022 7:22:39 PM	72036
2,4-Dinitrophenol	ND	16	20		µg/L	1	12/16/2022 7:22:39 PM	72036
2-Methylphenol	ND	5.0	10		µg/L	1	12/16/2022 7:22:39 PM	72036
3+4-Methylphenol	ND	5.1	10		µg/L	1	12/16/2022 7:22:39 PM	72036
Phenol	ND	18	20		µg/L	1	12/16/2022 7:22:39 PM	72036
Pyridine	ND	14	40		µg/L	1	12/16/2022 7:22:39 PM	72036
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	12/16/2022 7:22:39 PM	72036
Surr: 2-Fluorophenol	45.5	0	15-84.5		%Rec	1	12/16/2022 7:22:39 PM	72036
Surr: Phenol-d5	36.2	0	15-67		%Rec	1	12/16/2022 7:22:39 PM	72036
Surr: 2,4,6-Tribromophenol	61.9	0	15-108		%Rec	1	12/16/2022 7:22:39 PM	72036
Surr: Nitrobenzene-d5	57.4	0	16.8-112		%Rec	1	12/16/2022 7:22:39 PM	72036
Surr: 2-Fluorobiphenyl	51.6	0	15-101		%Rec	1	12/16/2022 7:22:39 PM	72036
Surr: 4-Terphenyl-d14	76.1	0	34.4-134		%Rec	1	12/16/2022 7:22:39 PM	72036
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	0.66	0.11	1.0	J	µg/L	1	12/16/2022 7:51:00 AM	72036
Naphthalene	0.24	0.20	0.30	J	µg/L	1	12/16/2022 7:51:00 AM	72036
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	12/16/2022 7:51:00 AM	72036
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	12/16/2022 7:51:00 AM	72036
Acenaphthene	ND	0.14	0.30		µg/L	1	12/16/2022 7:51:00 AM	72036
Fluorene	ND	0.095	0.30		µg/L	1	12/16/2022 7:51:00 AM	72036
Phenanthrene	ND	0.16	0.30		µg/L	1	12/16/2022 7:51:00 AM	72036
Anthracene	ND	0.14	0.30		µg/L	1	12/16/2022 7:51:00 AM	72036
Fluoranthene	ND	0.14	0.30		µg/L	1	12/16/2022 7:51:00 AM	72036
Pyrene	ND	0.32	1.0		µg/L	1	12/16/2022 7:51:00 AM	72036
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	12/16/2022 7:51:00 AM	72036
Chrysene	ND	0.25	0.30		µg/L	1	12/16/2022 7:51:00 AM	72036
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	12/16/2022 7:51:00 AM	72036
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	12/16/2022 7:51:00 AM	72036

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212630**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-28
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/8/2022 10:40:00 AM
Lab ID: 2212630-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	68.5	0	15-108		%Rec	1	12/16/2022 7:51:00 AM	72036
Surr: 2-Fluorobiphenyl	63.7	0	15-107		%Rec	1	12/16/2022 7:51:00 AM	72036
Surr: 4-Terphenyl-d14	101	0	15-166		%Rec	1	12/16/2022 7:51:00 AM	72036

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212630**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-28
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/8/2022 10:40:00 AM
Lab ID: 2212630-005D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.19	0.0016	0.0030		mg/L	1	12/13/2022 8:31:02 PM	72026
Beryllium	0.00089	0.00060	0.0020	J	mg/L	1	12/13/2022 8:31:02 PM	72026
Cadmium	ND	0.0018	0.0020		mg/L	1	12/13/2022 8:31:02 PM	72026
Chromium	0.0028	0.0020	0.0060	J	mg/L	1	12/13/2022 8:31:02 PM	72026
Cobalt	0.0038	0.0035	0.0060	J	mg/L	1	12/13/2022 8:31:02 PM	72026
Nickel	0.0089	0.0053	0.010	J	mg/L	1	12/13/2022 8:31:02 PM	72026
Silver	ND	0.0018	0.0050		mg/L	1	12/13/2022 8:31:02 PM	72026
Vanadium	0.016	0.0035	0.050	J	mg/L	1	12/13/2022 8:31:02 PM	72026
Zinc	0.020	0.0039	0.010		mg/L	1	12/13/2022 8:31:02 PM	72026
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	12/19/2022 1:05:21 PM	72026
Arsenic	0.0034	0.00022	0.0010		mg/L	1	12/19/2022 1:05:21 PM	72026
Lead	0.0071	0.00019	0.00050		mg/L	1	12/19/2022 1:05:21 PM	72026
Selenium	0.0063	0.00089	0.0010		mg/L	1	12/22/2022 2:03:25 PM	72026
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/20/2022 2:02:48 PM	72201

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212630**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-28
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/8/2022 10:40:00 AM
Lab ID: 2212630-005E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **VP**	
Barium	0.086	0.0011	0.0020		mg/L	1	12/22/2022 5:48:55 PM	B93514
Beryllium	ND	0.00059	0.0020		mg/L	1	12/22/2022 5:48:55 PM	B93514
Cadmium	ND	0.00098	0.0020		mg/L	1	12/22/2022 5:48:55 PM	B93514
Chromium	ND	0.0020	0.0060		mg/L	1	12/22/2022 5:48:55 PM	B93514
Cobalt	ND	0.0024	0.0060		mg/L	1	12/22/2022 5:48:55 PM	B93514
Nickel	0.0062	0.0033	0.010	J	mg/L	1	12/22/2022 5:48:55 PM	B93514
Silver	0.0020	0.0013	0.0050	J	mg/L	1	12/22/2022 5:48:55 PM	B93514
Vanadium	0.0055	0.0017	0.050	J	mg/L	1	12/22/2022 5:48:55 PM	B93514
Zinc	ND	0.0032	0.010		mg/L	1	12/22/2022 5:48:55 PM	B93514
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	12/15/2022 5:12:21 PM	D93335
Arsenic	0.055	0.00061	0.0050	*	mg/L	5	12/15/2022 7:28:23 PM	D93335
Lead	0.00018	0.000057	0.00050	J	mg/L	1	12/15/2022 5:12:21 PM	D93335
Selenium	ND	0.017	0.050		mg/L	50	12/20/2022 2:34:54 PM	A93438
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/20/2022 2:04:57 PM	72201

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212630**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-29
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/8/2022 11:00:00 AM
Lab ID: 2212630-006A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	0.023	0.0090	0.050	J	mg/L	1	12/20/2022 2:46:21 AM	A93392
Surr: BFB	85.3	0	70-130		%Rec	1	12/20/2022 2:46:21 AM	A93392
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	0.59	0.23	1.0	J	µg/L	1	12/20/2022 1:49:23 AM	R93394
Toluene	ND	0.20	1.0		µg/L	1	12/20/2022 1:49:23 AM	R93394
Ethylbenzene	ND	0.21	1.0		µg/L	1	12/20/2022 1:49:23 AM	R93394
Methyl tert-butyl ether (MTBE)	22	0.39	1.0		µg/L	1	12/20/2022 1:49:23 AM	R93394
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	12/20/2022 1:49:23 AM	R93394
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	12/20/2022 1:49:23 AM	R93394
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	12/20/2022 1:49:23 AM	R93394
Acetone	ND	2.5	10		µg/L	1	12/20/2022 1:49:23 AM	R93394
Bromomethane	ND	0.85	3.0		µg/L	1	12/20/2022 1:49:23 AM	R93394
2-Butanone	ND	2.0	10		µg/L	1	12/20/2022 1:49:23 AM	R93394
Carbon disulfide	ND	0.59	10		µg/L	1	12/20/2022 1:49:23 AM	R93394
Chlorobenzene	ND	0.16	1.0		µg/L	1	12/20/2022 1:49:23 AM	R93394
Chloroform	ND	0.13	1.0		µg/L	1	12/20/2022 1:49:23 AM	R93394
Chloromethane	ND	0.41	3.0		µg/L	1	12/20/2022 1:49:23 AM	R93394
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	12/20/2022 1:49:23 AM	R93394
1,1-Dichloroethane	0.76	0.27	1.0	J	µg/L	1	12/20/2022 1:49:23 AM	R93394
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	12/20/2022 1:49:23 AM	R93394
Isopropylbenzene	ND	0.18	1.0		µg/L	1	12/20/2022 1:49:23 AM	R93394
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	12/20/2022 1:49:23 AM	R93394
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/20/2022 1:49:23 AM	R93394
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/20/2022 1:49:23 AM	R93394
n-Propylbenzene	ND	0.18	1.0		µg/L	1	12/20/2022 1:49:23 AM	R93394
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	12/20/2022 1:49:23 AM	R93394
Styrene	ND	0.14	1.0		µg/L	1	12/20/2022 1:49:23 AM	R93394
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/20/2022 1:49:23 AM	R93394
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	12/20/2022 1:49:23 AM	R93394
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	12/20/2022 1:49:23 AM	R93394
Vinyl chloride	ND	0.32	1.0		µg/L	1	12/20/2022 1:49:23 AM	R93394
Xylenes, Total	ND	0.37	1.5		µg/L	1	12/20/2022 1:49:23 AM	R93394
Surr: 1,2-Dichloroethane-d4	111	0	70-130		%Rec	1	12/20/2022 1:49:23 AM	R93394
Surr: 4-Bromofluorobenzene	110	0	70-130		%Rec	1	12/20/2022 1:49:23 AM	R93394
Surr: Dibromofluoromethane	90.0	0	70-130		%Rec	1	12/20/2022 1:49:23 AM	R93394
Surr: Toluene-d8	108	0	70-130		%Rec	1	12/20/2022 1:49:23 AM	R93394

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

Analytical Report
Lab Order: **2212630**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-29
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/8/2022 11:00:00 AM
Lab ID: 2212630-006B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	12/21/2022 3:36:13 PM	72190

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212630**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-29
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/8/2022 11:00:00 AM
Lab ID: 2212630-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **JME**	
Diesel Range Organics (DRO)	0.31	0.016	0.064	B	mg/L	1	12/16/2022 1:00:42 PM	72049
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/16/2022 1:00:42 PM	72049
Surr: DNOP	110	0	15.9-177		%Rec	1	12/16/2022 1:00:42 PM	72049
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	12/16/2022 8:02:56 PM	72036
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	12/16/2022 8:02:56 PM	72036
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	12/16/2022 8:02:56 PM	72036
Di-n-octyl phthalate	ND	12	20		µg/L	1	12/16/2022 8:02:56 PM	72036
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	12/16/2022 8:02:56 PM	72036
Diethyl phthalate	ND	6.0	10		µg/L	1	12/16/2022 8:02:56 PM	72036
Dimethyl phthalate	ND	6.0	10		µg/L	1	12/16/2022 8:02:56 PM	72036
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	12/16/2022 8:02:56 PM	72036
2,4-Dinitrophenol	ND	16	20		µg/L	1	12/16/2022 8:02:56 PM	72036
2-Methylphenol	ND	5.0	10		µg/L	1	12/16/2022 8:02:56 PM	72036
3+4-Methylphenol	ND	5.1	10		µg/L	1	12/16/2022 8:02:56 PM	72036
Phenol	ND	18	20		µg/L	1	12/16/2022 8:02:56 PM	72036
Pyridine	ND	14	40		µg/L	1	12/16/2022 8:02:56 PM	72036
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	12/16/2022 8:02:56 PM	72036
Surr: 2-Fluorophenol	1.92	0	15-84.5	S	%Rec	1	12/16/2022 8:02:56 PM	72036
Surr: Phenol-d5	9.84	0	15-67	S	%Rec	1	12/16/2022 8:02:56 PM	72036
Surr: 2,4,6-Tribromophenol	1.62	0	15-108	S	%Rec	1	12/16/2022 8:02:56 PM	72036
Surr: Nitrobenzene-d5	62.5	0	16.8-112		%Rec	1	12/16/2022 8:02:56 PM	72036
Surr: 2-Fluorobiphenyl	50.6	0	15-101		%Rec	1	12/16/2022 8:02:56 PM	72036
Surr: 4-Terphenyl-d14	81.0	0	34.4-134		%Rec	1	12/16/2022 8:02:56 PM	72036
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	5.0	0.11	1.0		µg/L	1	12/16/2022 8:36:00 AM	72036
Naphthalene	ND	0.20	0.30		µg/L	1	12/16/2022 8:36:00 AM	72036
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	12/16/2022 8:36:00 AM	72036
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	12/16/2022 8:36:00 AM	72036
Acenaphthene	ND	0.14	0.30		µg/L	1	12/16/2022 8:36:00 AM	72036
Fluorene	ND	0.095	0.30		µg/L	1	12/16/2022 8:36:00 AM	72036
Phenanthrene	ND	0.16	0.30		µg/L	1	12/16/2022 8:36:00 AM	72036
Anthracene	ND	0.14	0.30		µg/L	1	12/16/2022 8:36:00 AM	72036
Fluoranthene	ND	0.14	0.30		µg/L	1	12/16/2022 8:36:00 AM	72036
Pyrene	ND	0.32	1.0		µg/L	1	12/16/2022 8:36:00 AM	72036
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	12/16/2022 8:36:00 AM	72036
Chrysene	ND	0.25	0.30		µg/L	1	12/16/2022 8:36:00 AM	72036
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	12/16/2022 8:36:00 AM	72036
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	12/16/2022 8:36:00 AM	72036

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212630**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-29
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/8/2022 11:00:00 AM
Lab ID: 2212630-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	70.7	0	15-108		%Rec	1	12/16/2022 8:36:00 AM	72036
Surr: 2-Fluorobiphenyl	58.3	0	15-107		%Rec	1	12/16/2022 8:36:00 AM	72036
Surr: 4-Terphenyl-d14	110	0	15-166		%Rec	1	12/16/2022 8:36:00 AM	72036

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212630**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-29
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/8/2022 11:00:00 AM
Lab ID: 2212630-006D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.31	0.0016	0.0030		mg/L	1	12/13/2022 8:32:57 PM	72026
Beryllium	ND	0.00060	0.0020		mg/L	1	12/13/2022 8:32:57 PM	72026
Cadmium	ND	0.0018	0.0020		mg/L	1	12/13/2022 8:32:57 PM	72026
Chromium	ND	0.0020	0.0060		mg/L	1	12/13/2022 8:32:57 PM	72026
Cobalt	ND	0.0035	0.0060		mg/L	1	12/13/2022 8:32:57 PM	72026
Nickel	0.019	0.0053	0.010		mg/L	1	12/13/2022 8:32:57 PM	72026
Silver	0.011	0.0018	0.0050		mg/L	1	12/13/2022 8:32:57 PM	72026
Vanadium	0.0078	0.0035	0.050	J	mg/L	1	12/13/2022 8:32:57 PM	72026
Zinc	0.010	0.0039	0.010		mg/L	1	12/13/2022 8:32:57 PM	72026
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	12/19/2022 1:27:59 PM	72026
Arsenic	0.0013	0.0011	0.0050	J	mg/L	5	12/21/2022 3:58:20 PM	72026
Lead	0.00046	0.00019	0.00050	J	mg/L	1	12/19/2022 1:27:59 PM	72026
Selenium	ND	0.0044	0.0050		mg/L	5	12/22/2022 2:05:51 PM	72026
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/20/2022 2:07:07 PM	72201

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212630**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-29
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/8/2022 11:00:00 AM
Lab ID: 2212630-006E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.22	0.0011	0.0020		mg/L	1	12/23/2022 1:22:59 PM	B93558
Beryllium	ND	0.00059	0.0020		mg/L	1	12/23/2022 1:22:59 PM	B93558
Cadmium	ND	0.00098	0.0020		mg/L	1	12/23/2022 1:22:59 PM	B93558
Chromium	ND	0.0020	0.0060		mg/L	1	12/23/2022 1:22:59 PM	B93558
Cobalt	ND	0.0024	0.0060		mg/L	1	12/23/2022 1:22:59 PM	B93558
Nickel	0.015	0.0033	0.010		mg/L	1	12/23/2022 1:22:59 PM	B93558
Silver	0.0044	0.0013	0.0050	J	mg/L	1	12/23/2022 1:22:59 PM	B93558
Vanadium	0.0056	0.0017	0.050	J	mg/L	1	12/23/2022 1:22:59 PM	B93558
Zinc	ND	0.0032	0.010		mg/L	1	12/23/2022 1:22:59 PM	B93558
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	12/15/2022 5:16:14 PM	D93335
Arsenic	ND	0.00061	0.0050		mg/L	5	12/20/2022 2:40:01 PM	A93438
Lead	0.000073	0.000057	0.00050	J	mg/L	1	12/15/2022 5:16:14 PM	D93335
Selenium	0.0027	0.0017	0.0050	J	mg/L	5	12/20/2022 2:40:01 PM	A93438
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/20/2022 2:09:15 PM	72201

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212630**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 12-8-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/8/2022
Lab ID: 2212630-007A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	12/20/2022 3:09:25 AM	A93392
Surr: BFB	82.7	0	70-130		%Rec	1	12/20/2022 3:09:25 AM	A93392
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	12/20/2022 2:17:38 AM	R93394
Toluene	ND	0.20	1.0		µg/L	1	12/20/2022 2:17:38 AM	R93394
Ethylbenzene	ND	0.21	1.0		µg/L	1	12/20/2022 2:17:38 AM	R93394
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	12/20/2022 2:17:38 AM	R93394
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	12/20/2022 2:17:38 AM	R93394
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	12/20/2022 2:17:38 AM	R93394
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	12/20/2022 2:17:38 AM	R93394
Acetone	ND	2.5	10		µg/L	1	12/20/2022 2:17:38 AM	R93394
Bromomethane	ND	0.85	3.0		µg/L	1	12/20/2022 2:17:38 AM	R93394
2-Butanone	ND	2.0	10		µg/L	1	12/20/2022 2:17:38 AM	R93394
Carbon disulfide	ND	0.59	10		µg/L	1	12/20/2022 2:17:38 AM	R93394
Chlorobenzene	ND	0.16	1.0		µg/L	1	12/20/2022 2:17:38 AM	R93394
Chloroform	ND	0.13	1.0		µg/L	1	12/20/2022 2:17:38 AM	R93394
Chloromethane	ND	0.41	3.0		µg/L	1	12/20/2022 2:17:38 AM	R93394
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	12/20/2022 2:17:38 AM	R93394
1,1-Dichloroethane	1.0	0.27	1.0		µg/L	1	12/20/2022 2:17:38 AM	R93394
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	12/20/2022 2:17:38 AM	R93394
Isopropylbenzene	ND	0.18	1.0		µg/L	1	12/20/2022 2:17:38 AM	R93394
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	12/20/2022 2:17:38 AM	R93394
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/20/2022 2:17:38 AM	R93394
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/20/2022 2:17:38 AM	R93394
n-Propylbenzene	ND	0.18	1.0		µg/L	1	12/20/2022 2:17:38 AM	R93394
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	12/20/2022 2:17:38 AM	R93394
Styrene	ND	0.14	1.0		µg/L	1	12/20/2022 2:17:38 AM	R93394
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/20/2022 2:17:38 AM	R93394
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	12/20/2022 2:17:38 AM	R93394
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	12/20/2022 2:17:38 AM	R93394
Vinyl chloride	ND	0.32	1.0		µg/L	1	12/20/2022 2:17:38 AM	R93394
Xylenes, Total	ND	0.37	1.5		µg/L	1	12/20/2022 2:17:38 AM	R93394
Surr: 1,2-Dichloroethane-d4	110	0	70-130		%Rec	1	12/20/2022 2:17:38 AM	R93394
Surr: 4-Bromofluorobenzene	105	0	70-130		%Rec	1	12/20/2022 2:17:38 AM	R93394
Surr: Dibromofluoromethane	93.3	0	70-130		%Rec	1	12/20/2022 2:17:38 AM	R93394
Surr: Toluene-d8	110	0	70-130		%Rec	1	12/20/2022 2:17:38 AM	R93394

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212630**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 12-8-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/8/2022
Lab ID: 2212630-007B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	12/21/2022 3:51:12 PM	72190

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212630**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 12-8-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/8/2022
Lab ID: 2212630-007C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **JME**	
Diesel Range Organics (DRO)	0.044	0.016	0.064	J	mg/L	1	12/16/2022 1:24:17 PM	72049
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/16/2022 1:24:17 PM	72049
Surr: DNOP	99.7	0	15.9-177		%Rec	1	12/16/2022 1:24:17 PM	72049
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	12/16/2022 8:44:14 PM	72036
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	12/16/2022 8:44:14 PM	72036
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	12/16/2022 8:44:14 PM	72036
Di-n-octyl phthalate	ND	12	20		µg/L	1	12/16/2022 8:44:14 PM	72036
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	12/16/2022 8:44:14 PM	72036
Diethyl phthalate	ND	6.0	10		µg/L	1	12/16/2022 8:44:14 PM	72036
Dimethyl phthalate	ND	6.0	10		µg/L	1	12/16/2022 8:44:14 PM	72036
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	12/16/2022 8:44:14 PM	72036
2,4-Dinitrophenol	ND	16	20		µg/L	1	12/16/2022 8:44:14 PM	72036
2-Methylphenol	ND	5.0	10		µg/L	1	12/16/2022 8:44:14 PM	72036
3+4-Methylphenol	ND	5.1	10		µg/L	1	12/16/2022 8:44:14 PM	72036
Phenol	ND	18	20		µg/L	1	12/16/2022 8:44:14 PM	72036
Pyridine	ND	14	40		µg/L	1	12/16/2022 8:44:14 PM	72036
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	12/16/2022 8:44:14 PM	72036
Surr: 2-Fluorophenol	9.97	0	15-84.5	S	%Rec	1	12/16/2022 8:44:14 PM	72036
Surr: Phenol-d5	23.5	0	15-67		%Rec	1	12/16/2022 8:44:14 PM	72036
Surr: 2,4,6-Tribromophenol	2.06	0	15-108	S	%Rec	1	12/16/2022 8:44:14 PM	72036
Surr: Nitrobenzene-d5	57.7	0	16.8-112		%Rec	1	12/16/2022 8:44:14 PM	72036
Surr: 2-Fluorobiphenyl	46.4	0	15-101		%Rec	1	12/16/2022 8:44:14 PM	72036
Surr: 4-Terphenyl-d14	84.3	0	34.4-134		%Rec	1	12/16/2022 8:44:14 PM	72036
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	11	0.11	1.0		µg/L	1	12/16/2022 9:20:00 AM	72036
Naphthalene	ND	0.20	0.30		µg/L	1	12/16/2022 9:20:00 AM	72036
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	12/16/2022 9:20:00 AM	72036
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	12/16/2022 9:20:00 AM	72036
Acenaphthene	ND	0.14	0.30		µg/L	1	12/16/2022 9:20:00 AM	72036
Fluorene	ND	0.095	0.30		µg/L	1	12/16/2022 9:20:00 AM	72036
Phenanthrene	ND	0.16	0.30		µg/L	1	12/16/2022 9:20:00 AM	72036
Anthracene	ND	0.14	0.30		µg/L	1	12/16/2022 9:20:00 AM	72036
Fluoranthene	ND	0.14	0.30		µg/L	1	12/16/2022 9:20:00 AM	72036
Pyrene	ND	0.32	1.0		µg/L	1	12/16/2022 9:20:00 AM	72036
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	12/16/2022 9:20:00 AM	72036
Chrysene	ND	0.25	0.30		µg/L	1	12/16/2022 9:20:00 AM	72036
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	12/16/2022 9:20:00 AM	72036
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	12/16/2022 9:20:00 AM	72036

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212630**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 12-8-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/8/2022
Lab ID: 2212630-007C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	68.5	0	15-108		%Rec	1	12/16/2022 9:20:00 AM	72036
Surr: 2-Fluorobiphenyl	59.4	0	15-107		%Rec	1	12/16/2022 9:20:00 AM	72036
Surr: 4-Terphenyl-d14	129	0	15-166		%Rec	1	12/16/2022 9:20:00 AM	72036

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212630**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 12-8-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/8/2022
Lab ID: 2212630-007D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.098	0.0016	0.0030		mg/L	1	12/13/2022 8:34:52 PM	72026
Beryllium	ND	0.00060	0.0020		mg/L	1	12/13/2022 8:34:52 PM	72026
Cadmium	ND	0.0018	0.0020		mg/L	1	12/13/2022 8:34:52 PM	72026
Chromium	ND	0.0020	0.0060		mg/L	1	12/13/2022 8:34:52 PM	72026
Cobalt	ND	0.0035	0.0060		mg/L	1	12/13/2022 8:34:52 PM	72026
Nickel	0.012	0.0053	0.010		mg/L	1	12/13/2022 8:34:52 PM	72026
Silver	0.0083	0.0018	0.0050		mg/L	1	12/13/2022 8:34:52 PM	72026
Vanadium	0.015	0.0035	0.050	J	mg/L	1	12/13/2022 8:34:52 PM	72026
Zinc	ND	0.0039	0.010		mg/L	1	12/13/2022 8:34:52 PM	72026
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	12/21/2022 4:00:47 PM	72026
Arsenic	0.0014	0.0011	0.0050	J	mg/L	5	12/21/2022 4:00:47 PM	72026
Lead	0.0018	0.00097	0.0025	J	mg/L	5	12/19/2022 3:35:27 PM	72026
Selenium	ND	0.0044	0.0050		mg/L	5	12/22/2022 2:08:18 PM	72026
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/20/2022 2:15:39 PM	72201

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212630**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 12-8-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/8/2022
Lab ID: 2212630-007E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.033	0.0011	0.0020		mg/L	1	12/23/2022 1:26:38 PM	B93558
Beryllium	ND	0.00059	0.0020		mg/L	1	12/23/2022 1:26:38 PM	B93558
Cadmium	ND	0.00098	0.0020		mg/L	1	12/23/2022 1:26:38 PM	B93558
Chromium	ND	0.0020	0.0060		mg/L	1	12/23/2022 1:26:38 PM	B93558
Cobalt	ND	0.0024	0.0060		mg/L	1	12/23/2022 1:26:38 PM	B93558
Nickel	0.0078	0.0033	0.010	J	mg/L	1	12/23/2022 1:26:38 PM	B93558
Silver	0.0031	0.0013	0.0050	J	mg/L	1	12/23/2022 1:26:38 PM	B93558
Vanadium	0.0075	0.0017	0.050	J	mg/L	1	12/23/2022 1:26:38 PM	B93558
Zinc	ND	0.0032	0.010		mg/L	1	12/23/2022 1:26:38 PM	B93558
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	12/15/2022 7:36:09 PM	D93335
Arsenic	0.00069	0.00061	0.0050	J	mg/L	5	12/20/2022 2:45:08 PM	A93438
Lead	ND	0.00028	0.0025		mg/L	5	12/20/2022 2:45:08 PM	A93438
Selenium	0.0026	0.0017	0.0050	J	mg/L	5	12/20/2022 2:45:08 PM	A93438
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/20/2022 2:22:03 PM	72201

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212630**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB-12-8-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/8/2022 11:00:00 AM
Lab ID: 2212630-008A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	12/20/2022 2:45:55 AM	R93394
Toluene	ND	0.20	1.0		µg/L	1	12/20/2022 2:45:55 AM	R93394
Ethylbenzene	ND	0.21	1.0		µg/L	1	12/20/2022 2:45:55 AM	R93394
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	12/20/2022 2:45:55 AM	R93394
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	12/20/2022 2:45:55 AM	R93394
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	12/20/2022 2:45:55 AM	R93394
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	12/20/2022 2:45:55 AM	R93394
Acetone	ND	2.5	10		µg/L	1	12/20/2022 2:45:55 AM	R93394
Bromomethane	ND	0.85	3.0		µg/L	1	12/20/2022 2:45:55 AM	R93394
2-Butanone	ND	2.0	10		µg/L	1	12/20/2022 2:45:55 AM	R93394
Carbon disulfide	ND	0.59	10		µg/L	1	12/20/2022 2:45:55 AM	R93394
Chlorobenzene	ND	0.16	1.0		µg/L	1	12/20/2022 2:45:55 AM	R93394
Chloroform	ND	0.13	1.0		µg/L	1	12/20/2022 2:45:55 AM	R93394
Chloromethane	ND	0.41	3.0		µg/L	1	12/20/2022 2:45:55 AM	R93394
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	12/20/2022 2:45:55 AM	R93394
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	12/20/2022 2:45:55 AM	R93394
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	12/20/2022 2:45:55 AM	R93394
Isopropylbenzene	ND	0.18	1.0		µg/L	1	12/20/2022 2:45:55 AM	R93394
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	12/20/2022 2:45:55 AM	R93394
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/20/2022 2:45:55 AM	R93394
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/20/2022 2:45:55 AM	R93394
n-Propylbenzene	ND	0.18	1.0		µg/L	1	12/20/2022 2:45:55 AM	R93394
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	12/20/2022 2:45:55 AM	R93394
Styrene	ND	0.14	1.0		µg/L	1	12/20/2022 2:45:55 AM	R93394
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/20/2022 2:45:55 AM	R93394
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	12/20/2022 2:45:55 AM	R93394
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	12/20/2022 2:45:55 AM	R93394
Vinyl chloride	ND	0.32	1.0		µg/L	1	12/20/2022 2:45:55 AM	R93394
Xylenes, Total	ND	0.37	1.5		µg/L	1	12/20/2022 2:45:55 AM	R93394
Surr: 1,2-Dichloroethane-d4	106	0	70-130		%Rec	1	12/20/2022 2:45:55 AM	R93394
Surr: 4-Bromofluorobenzene	106	0	70-130		%Rec	1	12/20/2022 2:45:55 AM	R93394
Surr: Dibromofluoromethane	91.2	0	70-130		%Rec	1	12/20/2022 2:45:55 AM	R93394
Surr: Toluene-d8	107	0	70-130		%Rec	1	12/20/2022 2:45:55 AM	R93394

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212630**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 4th Quarter
Collection Date:
Lab ID: 2212630-009A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	12/20/2022 3:14:09 AM	R93394
Toluene	ND	0.20	1.0		µg/L	1	12/20/2022 3:14:09 AM	R93394
Ethylbenzene	ND	0.21	1.0		µg/L	1	12/20/2022 3:14:09 AM	R93394
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	12/20/2022 3:14:09 AM	R93394
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	12/20/2022 3:14:09 AM	R93394
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	12/20/2022 3:14:09 AM	R93394
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	12/20/2022 3:14:09 AM	R93394
Acetone	ND	2.5	10		µg/L	1	12/20/2022 3:14:09 AM	R93394
Bromomethane	ND	0.85	3.0		µg/L	1	12/20/2022 3:14:09 AM	R93394
2-Butanone	ND	2.0	10		µg/L	1	12/20/2022 3:14:09 AM	R93394
Carbon disulfide	ND	0.59	10		µg/L	1	12/20/2022 3:14:09 AM	R93394
Chlorobenzene	ND	0.16	1.0		µg/L	1	12/20/2022 3:14:09 AM	R93394
Chloroform	ND	0.13	1.0		µg/L	1	12/20/2022 3:14:09 AM	R93394
Chloromethane	ND	0.41	3.0		µg/L	1	12/20/2022 3:14:09 AM	R93394
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	12/20/2022 3:14:09 AM	R93394
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	12/20/2022 3:14:09 AM	R93394
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	12/20/2022 3:14:09 AM	R93394
Isopropylbenzene	ND	0.18	1.0		µg/L	1	12/20/2022 3:14:09 AM	R93394
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	12/20/2022 3:14:09 AM	R93394
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/20/2022 3:14:09 AM	R93394
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/20/2022 3:14:09 AM	R93394
n-Propylbenzene	ND	0.18	1.0		µg/L	1	12/20/2022 3:14:09 AM	R93394
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	12/20/2022 3:14:09 AM	R93394
Styrene	ND	0.14	1.0		µg/L	1	12/20/2022 3:14:09 AM	R93394
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/20/2022 3:14:09 AM	R93394
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	12/20/2022 3:14:09 AM	R93394
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	12/20/2022 3:14:09 AM	R93394
Vinyl chloride	ND	0.32	1.0		µg/L	1	12/20/2022 3:14:09 AM	R93394
Xylenes, Total	ND	0.37	1.5		µg/L	1	12/20/2022 3:14:09 AM	R93394
Surr: 1,2-Dichloroethane-d4	109	0	70-130		%Rec	1	12/20/2022 3:14:09 AM	R93394
Surr: 4-Bromofluorobenzene	112	0	70-130		%Rec	1	12/20/2022 3:14:09 AM	R93394
Surr: Dibromofluoromethane	96.1	0	70-130		%Rec	1	12/20/2022 3:14:09 AM	R93394
Surr: Toluene-d8	111	0	70-130		%Rec	1	12/20/2022 3:14:09 AM	R93394

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212630**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2022 GW Sampling 4th Quarter
Collection Date:
Lab ID: 2212630-009B
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	12/21/2022 4:06:10 PM	72190

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

ANALYTICAL REPORT

December 19, 2022

Hall Environmental Analysis Laboratory

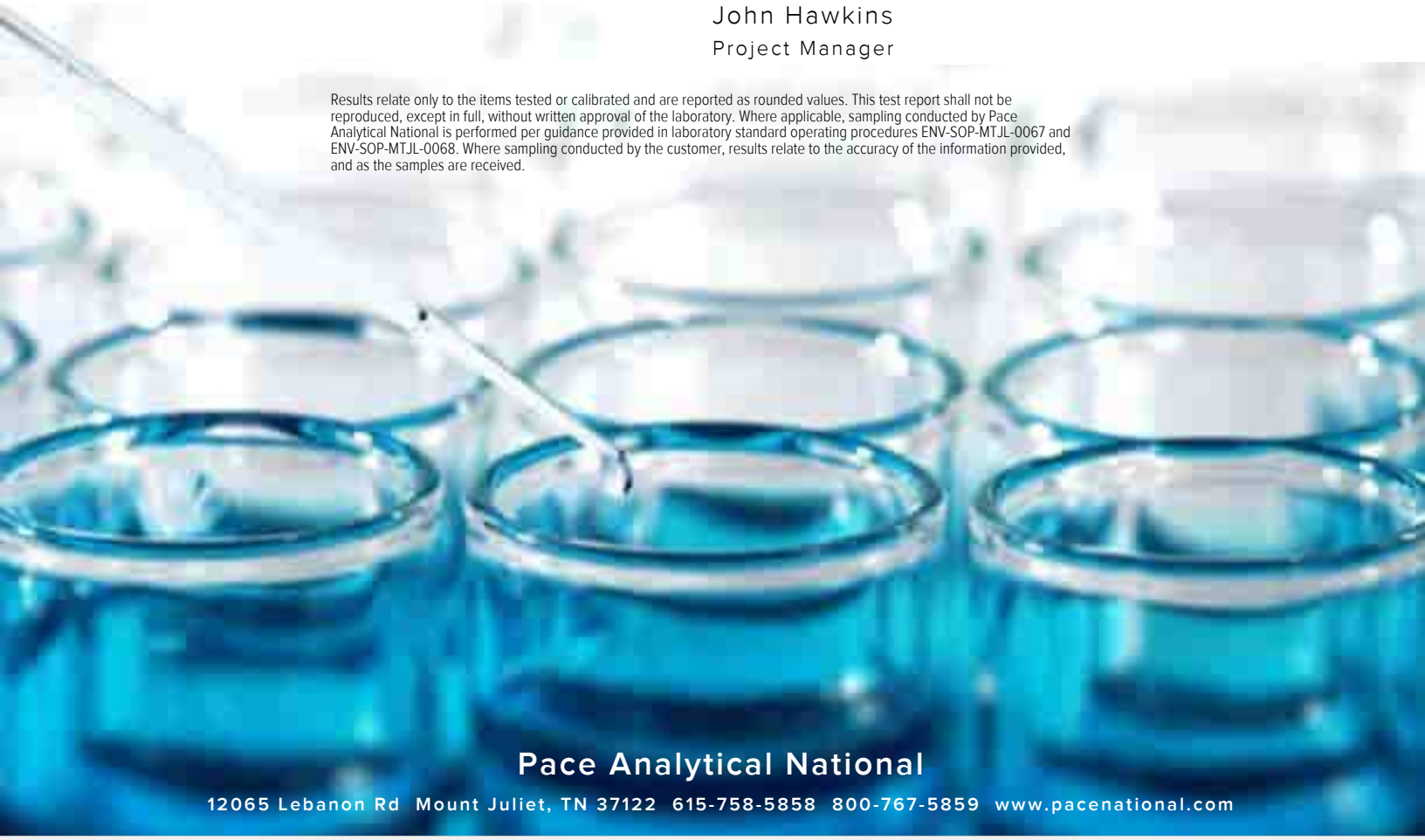
Sample Delivery Group:	L1567071
Samples Received:	12/13/2022
Project Number:	
Description:	

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By: John V Hawkins

John Hawkins
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 4

Sr: Sample Results 5

2212630-001F EB-12-8-22 L1567071-01 5

2212630-002F MKTF-40 L1567071-02 6

2212630-003F MKTF-31 L1567071-03 7

2212630-004F MKTF-27 L1567071-04 8

2212630-005F MKTF-28 L1567071-05 9

2212630-006F MKTF-29 L1567071-06 10

2212630-007F DUP 12-8-22 L1567071-07 11

Qc: Quality Control Summary 12

Wet Chemistry by Method 4500CN E-2016 12

Gl: Glossary of Terms 13

Al: Accreditations & Locations 14

Sc: Sample Chain of Custody 15

SAMPLE SUMMARY

2212630-001F EB-12-8-22 L1567071-01 GW

Collected by	Collected date/time	Received date/time
	12/08/22 09:30	12/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1974296	1	12/18/22 16:42	12/19/22 16:55	JCS	Mt. Juliet, TN

2212630-002F MKTF-40 L1567071-02 GW

Collected by	Collected date/time	Received date/time
	12/08/22 09:50	12/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1974296	1	12/18/22 16:42	12/19/22 16:56	JCS	Mt. Juliet, TN

2212630-003F MKTF-31 L1567071-03 GW

Collected by	Collected date/time	Received date/time
	12/08/22 10:15	12/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1974296	1	12/18/22 16:42	12/19/22 16:57	JCS	Mt. Juliet, TN

2212630-004F MKTF-27 L1567071-04 GW

Collected by	Collected date/time	Received date/time
	12/08/22 10:30	12/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1974296	1	12/18/22 16:42	12/19/22 16:58	JCS	Mt. Juliet, TN

2212630-005F MKTF-28 L1567071-05 GW

Collected by	Collected date/time	Received date/time
	12/08/22 10:40	12/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1974296	1	12/18/22 16:42	12/19/22 17:01	JCS	Mt. Juliet, TN

2212630-006F MKTF-29 L1567071-06 GW

Collected by	Collected date/time	Received date/time
	12/08/22 11:00	12/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1974296	1	12/18/22 16:42	12/19/22 17:02	JCS	Mt. Juliet, TN

2212630-007F DUP 12-8-22 L1567071-07 GW

Collected by	Collected date/time	Received date/time
	12/08/22 00:00	12/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1974296	1	12/18/22 16:42	12/19/22 17:03	JCS	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	12/19/2022 16:55	WG1974296

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.0115		0.00500	1	12/19/2022 16:56	WG1974296

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.00599		0.00500	1	12/19/2022 16:57	WG1974296

Received by OCD: 4/21/2023 9:21:57 AM

2212630-0041 MRTT-27

SAMPLE RESULTS - 04

Collected date/time: 12/08/22 10:30

L1567071

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.00614		0.00500	1	12/19/2022 16:58	WG1974296

Released to Imaging: 4/21/2023 9:40:26 AM

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	12/19/2022 17:01	WG1974296

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	12/19/2022 17:02	WG1974296

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.00808		0.00500	1	12/19/2022 17:03	WG1974296

Method Blank (MB)

(MB) R3873576-1 12/19/22 16:37

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1566638-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1566638-01 12/19/22 16:41 • (DUP) R3873576-3 12/19/22 16:42

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

L1567062-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1567062-04 12/19/22 16:50 • (DUP) R3873576-6 12/19/22 16:51

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	200	P1	20

Laboratory Control Sample (LCS)

(LCS) R3873576-2 12/19/22 16:38

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.0951	95.1	87.1-120	

L1567062-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1567062-01 12/19/22 16:43 • (MS) R3873576-4 12/19/22 16:44 • (MSD) R3873576-5 12/19/22 16:45

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0923	0.0923	92.3	92.3	1	90.0-110			0.000	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Received by OCD: 4/21/2023 9:21:57 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

SUB CONTRATOR:	Pace TN	COMPANY: PACE TN	PHONE: (800) 767-5859	FAX: (615) 758-5859	
ADDRESS:	12065 Lebanon Rd		ACCOUNT #:	EMAIL:	
CITY, STATE, ZIP:	Mt. Juliet, TN 37122				

L1567071

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS	
1	2212630-001F	EB-12-8-22	500AMBHDP F-NAOH	Groundwater	12/8/2022 9:30:00 AM	1	Total Cyanide J and MDL	-01
2	2212630-002F	MKTF-40	500AMBHDP F-NAOH	Groundwater	12/8/2022 9:50:00 AM	1	Total Cyanide J and MDL	-02
3	2212630-003F	MKTF-31	500AMBHDP F-NAOH	Groundwater	12/8/2022 10:15:00 AM	1	Total Cyanide J and MDL	-03
4	2212630-004F	MKTF-27	500AMBHDP F-NAOH	Groundwater	12/8/2022 10:30:00 AM	1	Total Cyanide J and MDL	-04
5	2212630-005F	MKTF-28	500AMBHDP F-NAOH	Groundwater	12/8/2022 10:40:00 AM	1	Total Cyanide J and MDL	-05
6	2212630-006F	MKTF-29	500AMBHDP F-NAOH	Groundwater	12/8/2022 11:00:00 AM	1	Total Cyanide J and MDL	-06
7	2212630-007F	DUP 12-8-22	500AMBHDP F-NAOH	Groundwater	12/8/2022	1	Total Cyanide J and MDL	-07

Sample Receipt Checklist

COC Seal Present/Intact:	Y N	If Applicable	
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	Y N	Pres.Correct/Check:	Y N
Correct bottles used:	Y N		
Sufficient volume sent:	Y N		
RAD Screen <0.5 mR/hr:	Y N		

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

JOH

Relinquished By:	Date: 12/9/2022	Time: 12:22 PM	Received By:	Date: 12/13/22	Time: 0900
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☑ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY
Temp of samples 0.6 C Attempt to Cool ?
Comments:

Released to Imaging: 4/21/2023 9:40:26 AM

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212630**

09-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-72026**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **72026**	RunNo: **93245**
Prep Date: **12/12/2022**	Analysis Date: **12/13/2022**	SeqNo: **3360580** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Chromium	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LCSLL-72026**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **72026**	RunNo: **93245**
Prep Date: **12/12/2022**	Analysis Date: **12/13/2022**	SeqNo: **3360581** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0027	0.0030	0.002000	0	135	50	150			J
Beryllium	0.0023	0.0020	0.002000	0	114	50	150			
Chromium	0.0085	0.0060	0.006000	0	142	50	150			
Nickel	0.0046	0.010	0.005000	0	92.8	50	150			J
Silver	0.0052	0.0050	0.005000	0	105	50	150			
Vanadium	0.0095	0.050	0.01000	0	94.8	50	150			J
Zinc	0.015	0.010	0.01000	0	146	50	150			

Sample ID: **LCS-72026**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **72026**	RunNo: **93245**
Prep Date: **12/12/2022**	Analysis Date: **12/13/2022**	SeqNo: **3360582** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0030	0.5000	0	102	85	115			
Beryllium	0.51	0.0020	0.5000	0	101	85	115			
Chromium	0.50	0.0060	0.5000	0	99.8	85	115			
Nickel	0.49	0.010	0.5000	0	98.1	85	115			
Silver	0.098	0.0050	0.1000	0	98.1	85	115			
Vanadium	0.51	0.050	0.5000	0	102	85	115			
Zinc	0.49	0.010	0.5000	0	98.7	85	115			

Sample ID: **MB-72026**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **72026**	RunNo: **93246**
Prep Date: **12/12/2022**	Analysis Date: **12/13/2022**	SeqNo: **3360659** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.016	0.0020								*

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212630**

09-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-72026** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**

Client ID: **PBW** Batch ID: **72026** RunNo: **93246**

Prep Date: **12/12/2022** Analysis Date: **12/13/2022** SeqNo: **3360659** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	ND	0.0060								

Sample ID: **LCSLL-72026** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**

Client ID: **BatchQC** Batch ID: **72026** RunNo: **93246**

Prep Date: **12/12/2022** Analysis Date: **12/13/2022** SeqNo: **3360660** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.0097	0.0020	0.002000	0	484	50	150			BS
Cobalt	0.0063	0.0060	0.006000	0	104	50	150			

Sample ID: **LCS-72026** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**

Client ID: **LCSW** Batch ID: **72026** RunNo: **93246**

Prep Date: **12/12/2022** Analysis Date: **12/13/2022** SeqNo: **3360661** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.50	0.0020	0.5000	0	99.8	85	115			B
Cobalt	0.48	0.0060	0.5000	0	96.5	85	115			

Sample ID: **2212630-001DMS** SampType: **MS** TestCode: **EPA Method 200.7: Metals**

Client ID: **EB-12-8-22** Batch ID: **72026** RunNo: **93246**

Prep Date: **12/12/2022** Analysis Date: **12/13/2022** SeqNo: **3360722** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0030	0.5000	0	99.6	70	130			
Beryllium	0.49	0.0020	0.5000	0	97.9	70	130			
Cadmium	0.50	0.0020	0.5000	0	99.5	70	130			B
Chromium	0.49	0.0060	0.5000	0	98.2	70	130			
Cobalt	0.49	0.0060	0.5000	0	97.8	70	130			
Nickel	0.49	0.010	0.5000	0	98.8	70	130			
Silver	0.10	0.0050	0.1000	0	100	70	130			
Vanadium	0.49	0.050	0.5000	0	98.0	70	130			
Zinc	0.47	0.010	0.5000	0	94.9	70	130			

Sample ID: **2212630-001DMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Metals**

Client ID: **EB-12-8-22** Batch ID: **72026** RunNo: **93246**

Prep Date: **12/12/2022** Analysis Date: **12/13/2022** SeqNo: **3360723** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0030	0.5000	0	102	70	130	2.12	20	
Beryllium	0.50	0.0020	0.5000	0	99.2	70	130	1.37	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212630**

09-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **2212630-001DMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Metals**
Client ID: **EB-12-8-22**	Batch ID: **72026**	RunNo: **93246**
Prep Date: **12/12/2022**	Analysis Date: **12/13/2022**	SeqNo: **3360723** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.51	0.0020	0.5000	0	102	70	130	2.16	20	B
Chromium	0.50	0.0060	0.5000	0	100	70	130	1.83	20	
Cobalt	0.50	0.0060	0.5000	0	99.8	70	130	1.98	20	
Nickel	0.50	0.010	0.5000	0	101	70	130	1.97	20	
Silver	0.10	0.0050	0.1000	0	101	70	130	0.541	20	
Vanadium	0.50	0.050	0.5000	0	99.7	70	130	1.68	20	
Zinc	0.48	0.010	0.5000	0	96.8	70	130	2.00	20	

Sample ID: **2212630-002DMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **MKTF-40**	Batch ID: **72026**	RunNo: **93246**
Prep Date: **12/12/2022**	Analysis Date: **12/13/2022**	SeqNo: **3360725** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.58	0.0030	0.5000	0.09992	95.6	70	130			
Beryllium	0.46	0.0020	0.5000	0.001048	92.4	70	130			
Cadmium	0.49	0.0020	0.5000	0	98.0	70	130			B
Chromium	0.47	0.0060	0.5000	0.003417	93.2	70	130			
Cobalt	0.46	0.0060	0.5000	0	91.5	70	130			
Nickel	0.48	0.010	0.5000	0.01098	93.8	70	130			
Silver	0.11	0.0050	0.1000	0.008173	107	70	130			
Vanadium	0.50	0.050	0.5000	0.01635	95.9	70	130			
Zinc	0.44	0.010	0.5000	0.005076	86.8	70	130			

Sample ID: **2212630-002DMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Metals**
Client ID: **MKTF-40**	Batch ID: **72026**	RunNo: **93246**
Prep Date: **12/12/2022**	Analysis Date: **12/13/2022**	SeqNo: **3360726** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.57	0.0030	0.5000	0.09992	94.1	70	130	1.38	20	
Beryllium	0.46	0.0020	0.5000	0.001048	92.7	70	130	0.356	20	
Cadmium	0.48	0.0020	0.5000	0	96.6	70	130	1.47	20	B
Chromium	0.46	0.0060	0.5000	0.003417	91.9	70	130	1.32	20	
Cobalt	0.45	0.0060	0.5000	0	89.4	70	130	2.28	20	
Nickel	0.47	0.010	0.5000	0.01098	92.6	70	130	1.30	20	
Silver	0.11	0.0050	0.1000	0.008173	105	70	130	1.47	20	
Vanadium	0.49	0.050	0.5000	0.01635	94.3	70	130	1.63	20	
Zinc	0.43	0.010	0.5000	0.005076	84.7	70	130	2.49	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212630**

09-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-B**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B93514**	RunNo: **93514**
Prep Date:	Analysis Date: **12/22/2022**	SeqNo: **3373357** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0013	0.0020								J
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LCSLL-B**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B93514**	RunNo: **93514**
Prep Date:	Analysis Date: **12/22/2022**	SeqNo: **3373358** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0019	0.0020	0.002000	0	95.0	50	150			J
Beryllium	0.0020	0.0020	0.002000	0	97.8	50	150			J
Cadmium	0.0017	0.0020	0.002000	0	83.5	50	150			J
Chromium	0.0057	0.0060	0.006000	0	95.6	50	150			J
Cobalt	0.0067	0.0060	0.006000	0	112	50	150			
Nickel	0.0040	0.010	0.005000	0	80.5	50	150			J
Silver	0.0047	0.0050	0.005000	0	93.9	50	150			J
Vanadium	0.0094	0.050	0.01000	0	94.4	50	150			J
Zinc	0.0094	0.010	0.01000	0	93.5	50	150			J

Sample ID: **LCS-B**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B93514**	RunNo: **93514**
Prep Date:	Analysis Date: **12/22/2022**	SeqNo: **3373359** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.52	0.0020	0.5000	0	105	85	115			
Beryllium	0.51	0.0020	0.5000	0	101	85	115			
Cadmium	0.50	0.0020	0.5000	0	101	85	115			
Chromium	0.51	0.0060	0.5000	0	102	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.9	85	115			
Nickel	0.51	0.010	0.5000	0	103	85	115			
Silver	0.10	0.0050	0.1000	0	102	85	115			
Vanadium	0.51	0.050	0.5000	0	102	85	115			
Zinc	0.51	0.010	0.5000	0	102	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2212630**
09-Jan-23

Client: Marathon
Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-B** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW** Batch ID: **B93558** RunNo: **93558**
Prep Date: Analysis Date: **12/23/2022** SeqNo: **3375406** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LCSLL-B** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **B93558** RunNo: **93558**
Prep Date: Analysis Date: **12/23/2022** SeqNo: **3375407** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0021	0.0020	0.002000	0	105	50	150			
Beryllium	0.0021	0.0020	0.002000	0	104	50	150			
Cadmium	0.0026	0.0020	0.002000	0	128	50	150			
Chromium	0.0039	0.0060	0.006000	0	65.3	50	150			J
Cobalt	0.0070	0.0060	0.006000	0	117	50	150			
Nickel	0.0052	0.010	0.005000	0	104	50	150			J
Silver	0.0049	0.0050	0.005000	0	98.9	50	150			J
Vanadium	0.0099	0.050	0.01000	0	99.4	50	150			J
Zinc	0.012	0.010	0.01000	0	123	50	150			

Sample ID: **LCS-B** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **B93558** RunNo: **93558**
Prep Date: Analysis Date: **12/23/2022** SeqNo: **3375408** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	95.9	85	115			
Beryllium	0.51	0.0020	0.5000	0	101	85	115			
Cadmium	0.47	0.0020	0.5000	0	94.8	85	115			
Chromium	0.47	0.0060	0.5000	0	94.0	85	115			
Cobalt	0.46	0.0060	0.5000	0	91.1	85	115			
Nickel	0.47	0.010	0.5000	0	94.3	85	115			
Silver	0.10	0.0050	0.1000	0	103	85	115			
Vanadium	0.50	0.050	0.5000	0	101	85	115			
Zinc	0.46	0.010	0.5000	0	92.2	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212630**

09-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-72026**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **72026**	RunNo: **93249**
Prep Date: **12/12/2022**	Analysis Date: **12/13/2022**	SeqNo: **3360859** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								

Sample ID: **MSLCSLL-72026**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **72026**	RunNo: **93249**
Prep Date: **12/12/2022**	Analysis Date: **12/13/2022**	SeqNo: **3360860** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00051	0.0010	0.001000	0	51.2	50	150			J
Arsenic	0.0011	0.0010	0.001000	0	114	50	150			
Lead	0.00051	0.00050	0.0005000	0	102	50	150			

Sample ID: **MSLCS-72026**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **72026**	RunNo: **93249**
Prep Date: **12/12/2022**	Analysis Date: **12/13/2022**	SeqNo: **3360861** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.028	0.0010	0.02500	0	111	85	115			
Arsenic	0.026	0.0010	0.02500	0	104	85	115			
Lead	0.013	0.00050	0.01250	0	104	85	115			

Sample ID: **MB-72026**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **72026**	RunNo: **93483**
Prep Date: **12/12/2022**	Analysis Date: **12/21/2022**	SeqNo: **3371594** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00052	0.0010								J
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **MSLCSLL-72026**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **72026**	RunNo: **93483**
Prep Date: **12/12/2022**	Analysis Date: **12/21/2022**	SeqNo: **3371595** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0011	0.0010	0.001000	0	113	50	150			
Arsenic	0.00079	0.0010	0.001000	0	78.7	50	150			J
Lead	0.00053	0.00050	0.0005000	0	105	50	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212630**

09-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MSLCSLL-72026**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **72026**	RunNo: **93483**
Prep Date: **12/12/2022**	Analysis Date: **12/21/2022**	SeqNo: **3371595** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.0014	0.0010	0.001000	0	135	50	150			

Sample ID: **MSLCS-72026**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **72026**	RunNo: **93483**
Prep Date: **12/12/2022**	Analysis Date: **12/21/2022**	SeqNo: **3371596** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	103	85	115			
Arsenic	0.025	0.0010	0.02500	0	98.2	85	115			
Lead	0.013	0.00050	0.01250	0	103	85	115			
Selenium	0.025	0.0010	0.02500	0	99.7	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212630**

09-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **2212630-001EMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **EB-12-8-22**	Batch ID: **D93335**	RunNo: **93335**
Prep Date:	Analysis Date: **12/15/2022**	SeqNo: **3365024** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.3	70	130			
Arsenic	0.027	0.0010	0.02500	0	108	70	130			
Lead	0.013	0.00050	0.01250	0	102	70	130			
Selenium	0.031	0.0010	0.02500	0	123	70	130			

Sample ID: **2212630-001EMSDL**	SampType: **MSD**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **EB-12-8-22**	Batch ID: **D93335**	RunNo: **93335**
Prep Date:	Analysis Date: **12/15/2022**	SeqNo: **3365026** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.023	0.0010	0.02500	0	92.7	70	130	3.80	20	
Arsenic	0.026	0.0010	0.02500	0	103	70	130	4.98	20	
Lead	0.012	0.00050	0.01250	0	97.9	70	130	4.33	20	
Selenium	0.030	0.0010	0.02500	0	120	70	130	2.31	20	

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **D93335**	RunNo: **93335**
Prep Date:	Analysis Date: **12/15/2022**	SeqNo: **3367248** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00050	0.0010								J
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **D93335**	RunNo: **93335**
Prep Date:	Analysis Date: **12/15/2022**	SeqNo: **3367249** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.0011	0.0010	0.001000	0	105	50	150			
Lead	0.00058	0.00050	0.0005000	0	117	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **D93335**	RunNo: **93335**
Prep Date:	Analysis Date: **12/15/2022**	SeqNo: **3367250** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.023	0.0010	0.02500	0	93.0	85	115			
Arsenic	0.024	0.0010	0.02500	0	97.9	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212630**

09-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **D93335**	RunNo: **93335**
Prep Date:	Analysis Date: **12/15/2022**	SeqNo: **3367250** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.013	0.00050	0.01250	0	101	85	115			
Selenium	0.026	0.0010	0.02500	0	104	85	115			

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **D93335**	RunNo: **93335**
Prep Date:	Analysis Date: **12/15/2022**	SeqNo: **3367251** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0012	0.0010	0.001000	0	116	50	150			
Selenium	0.0011	0.0010	0.001000	0	108	50	150			

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A93438**	RunNo: **93438**
Prep Date:	Analysis Date: **12/20/2022**	SeqNo: **3370010** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A93438**	RunNo: **93438**
Prep Date:	Analysis Date: **12/20/2022**	SeqNo: **3370011** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.00095	0.0010	0.001000	0	94.8	50	150			J
Lead	0.00050	0.00050	0.0005000	0	99.8	50	150			J
Selenium	0.0011	0.0010	0.001000	0	113	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A93438**	RunNo: **93438**
Prep Date:	Analysis Date: **12/20/2022**	SeqNo: **3370012** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	94.3	85	115			
Lead	0.012	0.00050	0.01250	0	98.9	85	115			
Selenium	0.025	0.0010	0.02500	0	99.4	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2212630**
09-Jan-23

Client: Marathon
Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-72201** SampType: **MBLK** TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW** Batch ID: **72201** RunNo: **93426**
Prep Date: **12/20/2022** Analysis Date: **12/20/2022** SeqNo: **3369561** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-72201** SampType: **LCSLL** TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC** Batch ID: **72201** RunNo: **93426**
Prep Date: **12/20/2022** Analysis Date: **12/20/2022** SeqNo: **3369562** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00020	0.00020	0.0001500	0	131	50	150			J

Sample ID: **LCS-72201** SampType: **LCS** TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW** Batch ID: **72201** RunNo: **93426**
Prep Date: **12/20/2022** Analysis Date: **12/20/2022** SeqNo: **3369563** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0053	0.00020	0.005000	0	107	85	115			

Sample ID: **2212630-007DMS** SampType: **MS** TestCode: **EPA Method 245.1: Mercury**
Client ID: **DUP 12-8-22** Batch ID: **72201** RunNo: **93426**
Prep Date: **12/20/2022** Analysis Date: **12/20/2022** SeqNo: **3369598** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0048	0.00020	0.005000	0	96.7	75	125			

Sample ID: **2212630-007DMSD** SampType: **MSD** TestCode: **EPA Method 245.1: Mercury**
Client ID: **DUP 12-8-22** Batch ID: **72201** RunNo: **93426**
Prep Date: **12/20/2022** Analysis Date: **12/20/2022** SeqNo: **3369599** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0047	0.00020	0.005000	0	94.6	75	125	2.20	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212630**

09-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-72190**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **72190**	RunNo: **93452**							
Prep Date: **12/20/2022**	Analysis Date: **12/20/2022**	SeqNo: **3370711**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-72190**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **LCSW**	Batch ID: **72190**	RunNo: **93452**							
Prep Date: **12/20/2022**	Analysis Date: **12/20/2022**	SeqNo: **3370714**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.12	0.010	0.1000	0	124	70	130			

Sample ID: **MB-72190**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **72190**	RunNo: **93452**							
Prep Date: **12/20/2022**	Analysis Date: **12/20/2022**	SeqNo: **3370722**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212630**

09-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-72049**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **PBW**	Batch ID: **72049**	RunNo: **93339**
Prep Date: **12/13/2022**	Analysis Date: **12/16/2022**	SeqNo: **3366205** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.080	0.064								
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.033		0.03750		86.9	15.9	177			

Sample ID: **LCS-72049**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSW**	Batch ID: **72049**	RunNo: **93339**
Prep Date: **12/13/2022**	Analysis Date: **12/16/2022**	SeqNo: **3366206** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.23	0.064	0.1875	0	122	31.2	125			B
Surr: DNOP	0.021		0.01875		110	15.9	177			

Sample ID: **LCSD-72049**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02**	Batch ID: **72049**	RunNo: **93339**
Prep Date: **12/13/2022**	Analysis Date: **12/16/2022**	SeqNo: **3366207** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.18	0.064	0.1875	0	97.5	31.2	125	22.7	20	BR
Surr: DNOP	0.020		0.01875		107	15.9	177	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212630**

09-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **A93392**	RunNo: **93392**
Prep Date:	Analysis Date: **12/19/2022**	SeqNo: **3368366** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	18		20.00		88.9	70	130			

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **A93392**	RunNo: **93392**
Prep Date:	Analysis Date: **12/19/2022**	SeqNo: **3368367** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.50	0.050	0.5000	0	100	80	120			
Surr: BFB	37		20.00		185	70	130			S

Sample ID: **2212630-002ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **MKTF-40**	Batch ID: **A93392**	RunNo: **93392**
Prep Date:	Analysis Date: **12/20/2022**	SeqNo: **3368376** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.45	0.050	0.5000	0	90.1	70	130			
Surr: BFB	35		20.00		177	70	130			S

Sample ID: **2212630-002amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **MKTF-40**	Batch ID: **A93392**	RunNo: **93392**
Prep Date:	Analysis Date: **12/20/2022**	SeqNo: **3368377** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.44	0.050	0.5000	0	88.3	70	130	2.06	20	
Surr: BFB	36		20.00		178	70	130	0	0	S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212630**

09-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R93394**	RunNo: **93394**
Prep Date:	Analysis Date: **12/19/2022**	SeqNo: **3368489** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	105	70	130			
Toluene	23	1.0	20.00	0	114	70	130			
Chlorobenzene	21	1.0	20.00	0	107	70	130			
1,1-Dichloroethene	21	1.0	20.00	0	104	70	130			
Trichloroethene (TCE)	21	1.0	20.00	0	107	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		109	70	130			
Surr: Dibromofluoromethane	9.7		10.00		96.7	70	130			
Surr: Toluene-d8	11		10.00		105	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R93394**	RunNo: **93394**
Prep Date:	Analysis Date: **12/19/2022**	SeqNo: **3368517** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2212630**
09-Jan-23

Client: Marathon
Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R93394**	RunNo: **93394**
Prep Date:	Analysis Date: **12/19/2022**	SeqNo: **3368517** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		105	70	130			
Surr: 4-Bromofluorobenzene	9.6		10.00		95.7	70	130			
Surr: Dibromofluoromethane	9.5		10.00		94.8	70	130			
Surr: Toluene-d8	11		10.00		108	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2212630**
09-Jan-23

Client: Marathon
Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb-72036**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **72036**	RunNo: **93376**
Prep Date: **12/13/2022**	Analysis Date: **12/16/2022**	SeqNo: **3367172** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Anthracene	ND	10								
Benz(a)anthracene	ND	5.0								
Benzo(b)fluoranthene	ND	10								
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	10								
2,4-Dinitrophenol	ND	20								
Fluoranthene	ND	10								
Fluorene	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
1-Methylnaphthalene	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
Naphthalene	ND	5.0								
Phenanthrene	ND	10								
Phenol	ND	20								
Pyrene	ND	10								
Pyridine	ND	40								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	61		200.0		30.4	15	84.5			
Surr: Phenol-d5	48		200.0		23.8	15	67			
Surr: 2,4,6-Tribromophenol	94		200.0		47.2	15	108			
Surr: Nitrobenzene-d5	38		100.0		38.1	16.8	112			
Surr: 2-Fluorobiphenyl	31		100.0		31.3	15	101			
Surr: 4-Terphenyl-d14	74		100.0		73.6	34.4	134			

Sample ID: **lcs-72036**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **72036**	RunNo: **93376**
Prep Date: **12/13/2022**	Analysis Date: **12/16/2022**	SeqNo: **3367173** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212630**

09-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **lcs-72036**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **72036**	RunNo: **93376**
Prep Date: **12/13/2022**	Analysis Date: **12/16/2022**	SeqNo: **3367173** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	61	10	100.0	0	61.1	21.3	104			
1,4-Dichlorobenzene	44	5.0	100.0	0	44.2	15	89.8			
Phenol	81	20	200.0	0	40.7	17	61.1			
Pyrene	95	10	100.0	0	95.1	61	123			
Surr: 2-Fluorophenol	95		200.0		47.5	15	84.5			
Surr: Phenol-d5	71		200.0		35.7	15	67			
Surr: 2,4,6-Tribromophenol	140		200.0		71.6	15	108			
Surr: Nitrobenzene-d5	64		100.0		64.4	16.8	112			
Surr: 2-Fluorobiphenyl	56		100.0		56.3	15	101			
Surr: 4-Terphenyl-d14	100		100.0		102	34.4	134			

Sample ID: **lcsd-72036**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **72036**	RunNo: **93376**
Prep Date: **12/13/2022**	Analysis Date: **12/16/2022**	SeqNo: **3367174** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	55	10	100.0	0	55.2	21.3	104	10.0	45.3	
1,4-Dichlorobenzene	38	5.0	100.0	0	38.1	15	89.8	14.9	39.6	
Phenol	72	20	200.0	0	36.2	17	61.1	11.6	42.5	
Pyrene	79	10	100.0	0	79.5	61	123	17.9	11.8	R
Surr: 2-Fluorophenol	66		200.0		33.0	15	84.5	0	0	
Surr: Phenol-d5	66		200.0		33.0	15	67	0	0	
Surr: 2,4,6-Tribromophenol	100		200.0		50.3	15	108	0	0	
Surr: Nitrobenzene-d5	62		100.0		62.1	16.8	112	0	0	
Surr: 2-Fluorobiphenyl	53		100.0		53.2	15	101	0	0	
Surr: 4-Terphenyl-d14	94		100.0		93.5	34.4	134	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2212630**
09-Jan-23

Client: Marathon
Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb-72036**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **72036**	RunNo: **93333**
Prep Date: **12/13/2022**	Analysis Date: **12/15/2022**	SeqNo: **3364749** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.30								
1-Methylnaphthalene	ND	0.30								
2-Methylnaphthalene	ND	0.30								
Acenaphthene	ND	0.30								
Fluorene	ND	0.30								
Phenanthrene	ND	0.30								
Anthracene	ND	0.30								
Fluoranthene	ND	0.30								
Pyrene	ND	1.0								
Benz(a)anthracene	ND	0.30								
Chrysene	ND	0.30								
Benzo(b)fluoranthene	ND	0.40								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	41		100.0		40.8	15	108			
Surr: 2,4,6-Tribromophenol	78		200.0		39.0	15	112			
Surr: 2-Fluorobiphenyl	37		100.0		37.2	15	107			
Surr: 4-Terphenyl-d14	120		100.0		115	15	166			

Sample ID: **lcs-72036-lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **72036**	RunNo: **93333**
Prep Date: **12/13/2022**	Analysis Date: **12/16/2022**	SeqNo: **3364750** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.76	0.10	2.000	0	38.0	15	60.5			
Naphthalene	1.1	0.30	2.000	0	56.0	15	78.3			
1-Methylnaphthalene	1.1	0.30	2.000	0	57.0	15	79.6			
2-Methylnaphthalene	1.1	0.30	2.000	0	55.0	15	78.6			
Acenaphthene	1.3	0.30	2.000	0	66.0	15	92			
Fluorene	1.4	0.30	2.000	0	70.0	15	96			
Phenanthrene	1.5	0.30	2.000	0	77.0	21	103			
Anthracene	1.5	0.30	2.000	0	75.0	21.1	106			
Fluoranthene	1.6	0.30	2.000	0	82.0	32.8	119			
Pyrene	1.7	1.0	2.000	0	85.0	34.1	110			
Benz(a)anthracene	1.8	0.30	2.000	0	90.0	32	132			
Chrysene	1.8	0.30	2.000	0	91.0	31.3	112			
Benzo(b)fluoranthene	1.8	0.40	2.000	0	90.0	34.1	119			
Indeno(1,2,3-cd)pyrene	1.9	0.30	2.000	0	96.0	24.7	152			
Surr: Nitrobenzene-d5	71		105.0		68.0	15	108			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212630**

09-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **lcs-72036-lf**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **72036**	RunNo: **93333**
Prep Date: **12/13/2022**	Analysis Date: **12/16/2022**	SeqNo: **3364750** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	98		210.0		46.8	15	112			
Surr: 2-Fluorobiphenyl	63		105.0		60.2	15	107			
Surr: 4-Terphenyl-d14	110		105.0		101	15	166			

Sample ID: **lcsd-72036-lf**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02**	Batch ID: **72036**	RunNo: **93333**
Prep Date: **12/13/2022**	Analysis Date: **12/16/2022**	SeqNo: **3364751** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.64	0.10	2.000	0	32.0	15	60.5	17.1	29.7	
Naphthalene	0.80	0.30	2.000	0	40.0	15	78.3	33.3	31.7	R
1-Methylnaphthalene	0.76	0.30	2.000	0	38.0	15	79.6	40.0	31.4	R
2-Methylnaphthalene	0.74	0.30	2.000	0	37.0	15	78.6	39.1	30.5	R
Acenaphthene	0.90	0.30	2.000	0	45.0	15	92	37.8	30.5	R
Fluorene	1.0	0.30	2.000	0	51.0	15	96	31.4	25.1	R
Phenanthrene	1.3	0.30	2.000	0	64.0	21	103	18.4	26.4	
Anthracene	1.3	0.30	2.000	0	65.0	21.1	106	14.3	14.4	
Fluoranthene	1.5	0.30	2.000	0	74.0	32.8	119	10.3	14.8	
Pyrene	1.5	1.0	2.000	0	76.0	34.1	110	11.2	19.2	
Benz(a)anthracene	1.7	0.30	2.000	0	83.0	32	132	8.09	29.3	
Chrysene	1.7	0.30	2.000	0	84.0	31.3	112	8.00	19	
Benzo(b)fluoranthene	1.7	0.40	2.000	0	83.0	34.1	119	8.09	31.6	
Indeno(1,2,3-cd)pyrene	1.8	0.30	2.000	0	89.0	24.7	152	7.57	21.3	
Surr: Nitrobenzene-d5	60		105.0		57.1	15	108	0	0	
Surr: 2,4,6-Tribromophenol	90		210.0		43.0	15	112	0	0	
Surr: 2-Fluorobiphenyl	53		105.0		50.4	15	107	0	0	
Surr: 4-Terphenyl-d14	85		105.0		80.7	15	166	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 3725 of 3808

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Marathon | Work Order Number: 2212530 | RcptNo: 1

Received By: Sean Livingston 12/9/2022 7:55:00 AM

Completed By: Sean Livingston 12/9/2022 12:24:08 PM

Reviewed By: KPC 12-9-22

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☑ No ☐ NA ☐
10. Were any sample containers received broken? Yes ☐ No ☑

# of preserved bottles checked for pH: 14 7 (<2 or >12 unless noted)
Adjusted? NO

11. Does paperwork match bottle labels? Yes ☑ No ☐
(Note discrepancies on chain of custody)
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? Yes ☑ No ☐
(If no, notify customer for authorization.)

Checked by: 12-9-22 / SM 12/9/22

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.1	Good				
2	5.0	Good				
3	1.5	Good				

Received by OCD: 4/21/2023 9:21:57 AM

Released to Imaging: 4/21/2023 9:40:26 AM

Received by OCD: 4/21/2023 9:21:57 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Client: Marathon Gallup Refinery	X Standard Rush
Mailing Address: 92 Giant Crossing Road, Jamestown NM 87301	Project Name: 2022 GW Sampling 4th Quarter
Phone #: 808-640-1823	Project #: 697-080-001
email or Fax#:	Project Manager: Lesli Alexander
QA/QC Package: X Standard ☐ Level 4 (Full Validation)	Sampler:
Accreditation: ☐ Az Compliance ☐ NELAC ☐ Other	On Ice: ☑ Yes ☐ No
X EDD (Type)	# of Coolers: 3
	Cooler Temp(including CF): see comments

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2212673	See Analyte	8260B VOC	8270C SVOC	8270C SIM: PAH, 1,4 Dioxane	8015: TPH GRO/DRO/MRO	E200.7: Metals	E200.7: Dissolved Metals	E245.1 Mercury	E504.1 EDB	E335.4: Cyanide Subbed		537.1: PFAS	SM 5210B: BOD	410.4: COD	
12/8	9:30		EB-12-8-22	13		001		X	X	X	X	X	X	X	X	X					
12/8	9:50		MKTF-40	13		002		X	X	X	X	X	X	X	X	X					
12/8	10:15		MKTF-31	13		003		X	X	X	X	X	X	X	X	X					
12/9	10:20		MKTF-27	13		004		X	X	X	X	X	X	X	X	X					
12/8	10:40		MKTF-29	13		005		X	X	X	X	X	X	X	X	X					
12/8	11:00		MKTF-39	13		006		X	X	X	X	X	X	X	X	X					
12/9	—		DUP-12-8-22	13		007		X	X	X	X	X	X	X	X	X					
12/8	11:00		FB-12-8-22	3		008		X	X												
			Trip Blank per sample bottle for 12/9/22			009															

Date	Time	Relinquished by	Received by	Via	Date	Time
12/8	12:00	Hilario Tapia				
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

1.9 +0.2 = 2.1°C
4.4 +0.2 = 5.0°C
1.3 +0.2 = 1.5°C

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Released to Imaging: 4/21/2023 9:40:26 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

January 09, 2023

Lesli Alexander

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX (505) 632-3911

RE: 2022 GW Sampling 4th Quarter OrderNo.: 2212913

Dear Lesli Alexander:

Hall Environmental Analysis Laboratory received 8 sample(s) on 12/15/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **2212913**
Date: **1/9/2023**

CLIENT: Marathon
Project: 2022 GW Sampling 4th Quarter

Analytical Notes Regarding EPA Method 8015D DRO/MRO:
The method blank had a low level detection for DRO. Samples with detections are flagged with a "B".

"S" flagged surrogates/spikes denote that the analyte recovery was outstide of the standard limits.

Analytical Notes Regarding EPA Method 8270 and 8270 SIMS:
1-Methylnaphthalene, 2-Methylnaphthalene and Naphthalene were reported by EPA Method 8270 instead of EPA Method 8270SIMs becuase of their elevated concentrations for samples OW-58 and DUP-12-14-22.

Analytical Notes Regarding EPA Method 8270 and 8270 SIMS:
1-Methylnaphthalene was reported by EPA Method 8270 instead of EPA Method 8270SIMs becuase of its elevated concentration for sample NAPI-2.

Analytical Report
Lab Order: **2212913**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-14-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/14/2022 8:30:00 AM
Lab ID: 2212913-001A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	0.0090	0.050		mg/L	1	12/23/2022 1:21:55 AM	R93515
Surr: BFB	85.1	0	70-130		%Rec	1	12/23/2022 1:21:55 AM	R93515
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	12/21/2022 7:18:21 PM	R93479
Toluene	ND	0.20	1.0		µg/L	1	12/21/2022 7:18:21 PM	R93479
Ethylbenzene	ND	0.21	1.0		µg/L	1	12/21/2022 7:18:21 PM	R93479
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	12/21/2022 7:18:21 PM	R93479
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	12/21/2022 7:18:21 PM	R93479
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	12/21/2022 7:18:21 PM	R93479
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	12/21/2022 7:18:21 PM	R93479
Acetone	ND	2.5	10		µg/L	1	12/21/2022 7:18:21 PM	R93479
Bromomethane	ND	0.85	3.0		µg/L	1	12/21/2022 7:18:21 PM	R93479
2-Butanone	ND	2.0	10		µg/L	1	12/21/2022 7:18:21 PM	R93479
Carbon disulfide	ND	0.59	10		µg/L	1	12/21/2022 7:18:21 PM	R93479
Chlorobenzene	ND	0.16	1.0		µg/L	1	12/21/2022 7:18:21 PM	R93479
Chloroform	ND	0.13	1.0		µg/L	1	12/21/2022 7:18:21 PM	R93479
Chloromethane	ND	0.41	3.0		µg/L	1	12/21/2022 7:18:21 PM	R93479
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	12/21/2022 7:18:21 PM	R93479
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	12/21/2022 7:18:21 PM	R93479
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	12/21/2022 7:18:21 PM	R93479
Isopropylbenzene	ND	0.18	1.0		µg/L	1	12/21/2022 7:18:21 PM	R93479
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	12/21/2022 7:18:21 PM	R93479
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/21/2022 7:18:21 PM	R93479
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/21/2022 7:18:21 PM	R93479
n-Propylbenzene	ND	0.18	1.0		µg/L	1	12/21/2022 7:18:21 PM	R93479
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	12/21/2022 7:18:21 PM	R93479
Styrene	ND	0.14	1.0		µg/L	1	12/21/2022 7:18:21 PM	R93479
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/21/2022 7:18:21 PM	R93479
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	12/21/2022 7:18:21 PM	R93479
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	12/21/2022 7:18:21 PM	R93479
Vinyl chloride	ND	0.32	1.0		µg/L	1	12/21/2022 7:18:21 PM	R93479
Xylenes, Total	ND	0.37	1.5		µg/L	1	12/21/2022 7:18:21 PM	R93479
Surr: 1,2-Dichloroethane-d4	106	0	70-130		%Rec	1	12/21/2022 7:18:21 PM	R93479
Surr: 4-Bromofluorobenzene	105	0	70-130		%Rec	1	12/21/2022 7:18:21 PM	R93479
Surr: Dibromofluoromethane	99.3	0	70-130		%Rec	1	12/21/2022 7:18:21 PM	R93479
Surr: Toluene-d8	109	0	70-130		%Rec	1	12/21/2022 7:18:21 PM	R93479

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212913**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-14-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/14/2022 8:30:00 AM
Lab ID: 2212913-001B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	12/22/2022 3:26:05 PM	72230

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212913**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-14-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/14/2022 8:30:00 AM
Lab ID: 2212913-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.025	0.016	0.064	JB	mg/L	1	12/22/2022 6:36:06 PM	72199
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/22/2022 6:36:06 PM	72199
Surr: DNOP	107	0	15.9-177		%Rec	1	12/22/2022 6:36:06 PM	72199
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	12/21/2022 1:41:24 PM	72138
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	12/21/2022 1:41:24 PM	72138
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	12/21/2022 1:41:24 PM	72138
Di-n-octyl phthalate	ND	12	20		µg/L	1	12/21/2022 1:41:24 PM	72138
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	12/21/2022 1:41:24 PM	72138
Diethyl phthalate	ND	6.0	10		µg/L	1	12/21/2022 1:41:24 PM	72138
Dimethyl phthalate	ND	6.0	10		µg/L	1	12/21/2022 1:41:24 PM	72138
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	12/21/2022 1:41:24 PM	72138
2,4-Dinitrophenol	ND	16	20		µg/L	1	12/21/2022 1:41:24 PM	72138
2-Methylphenol	ND	5.0	10		µg/L	1	12/21/2022 1:41:24 PM	72138
3+4-Methylphenol	ND	5.1	10		µg/L	1	12/21/2022 1:41:24 PM	72138
Phenol	ND	18	20		µg/L	1	12/21/2022 1:41:24 PM	72138
Pyridine	ND	14	40		µg/L	1	12/21/2022 1:41:24 PM	72138
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	12/21/2022 1:41:24 PM	72138
Surr: 2-Fluorophenol	36.8	0	15-84.5		%Rec	1	12/21/2022 1:41:24 PM	72138
Surr: Phenol-d5	28.1	0	15-67		%Rec	1	12/21/2022 1:41:24 PM	72138
Surr: 2,4,6-Tribromophenol	53.4	0	15-108		%Rec	1	12/21/2022 1:41:24 PM	72138
Surr: Nitrobenzene-d5	49.0	0	16.8-112		%Rec	1	12/21/2022 1:41:24 PM	72138
Surr: 2-Fluorobiphenyl	43.1	0	15-101		%Rec	1	12/21/2022 1:41:24 PM	72138
Surr: 4-Terphenyl-d14	77.0	0	34.4-134		%Rec	1	12/21/2022 1:41:24 PM	72138
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.11	1.0		µg/L	1	12/20/2022 9:26:00 PM	72138
Naphthalene	ND	0.20	0.30		µg/L	1	12/20/2022 9:26:00 PM	72138
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	12/20/2022 9:26:00 PM	72138
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	12/20/2022 9:26:00 PM	72138
Acenaphthene	ND	0.14	0.30		µg/L	1	12/20/2022 9:26:00 PM	72138
Fluorene	ND	0.095	0.30		µg/L	1	12/20/2022 9:26:00 PM	72138
Phenanthrene	ND	0.16	0.30		µg/L	1	12/20/2022 9:26:00 PM	72138
Anthracene	ND	0.14	0.30		µg/L	1	12/20/2022 9:26:00 PM	72138
Fluoranthene	ND	0.14	0.30		µg/L	1	12/20/2022 9:26:00 PM	72138
Pyrene	ND	0.32	1.0		µg/L	1	12/20/2022 9:26:00 PM	72138
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	12/20/2022 9:26:00 PM	72138
Chrysene	ND	0.25	0.30		µg/L	1	12/20/2022 9:26:00 PM	72138
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	12/20/2022 9:26:00 PM	72138
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	12/20/2022 9:26:00 PM	72138

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212913**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-14-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/14/2022 8:30:00 AM
Lab ID: 2212913-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	43.8	0	15-108		%Rec	1	12/20/2022 9:26:00 PM	72138
Surr: 2-Fluorobiphenyl	39.5	0	15-107		%Rec	1	12/20/2022 9:26:00 PM	72138
Surr: 4-Terphenyl-d14	85.8	0	15-166		%Rec	1	12/20/2022 9:26:00 PM	72138

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212913**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-14-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/14/2022 8:30:00 AM
Lab ID: 2212913-001D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	ND	0.0016	0.0030		mg/L	1	12/21/2022 6:45:55 PM	72141
Beryllium	0.00080	0.00060	0.0020	J	mg/L	1	12/21/2022 6:45:55 PM	72141
Cadmium	ND	0.0018	0.0020		mg/L	1	12/21/2022 6:45:55 PM	72141
Chromium	ND	0.0020	0.0060		mg/L	1	12/21/2022 6:45:55 PM	72141
Cobalt	ND	0.0035	0.0060		mg/L	1	12/21/2022 6:45:55 PM	72141
Nickel	ND	0.0053	0.010		mg/L	1	12/21/2022 6:45:55 PM	72141
Silver	ND	0.0018	0.0050		mg/L	1	12/21/2022 6:45:55 PM	72141
Vanadium	ND	0.0035	0.050		mg/L	1	12/21/2022 6:45:55 PM	72141
Zinc	ND	0.0039	0.010		mg/L	1	12/21/2022 6:45:55 PM	72141
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	12/21/2022 4:03:13 PM	72141
Arsenic	ND	0.00022	0.0010		mg/L	1	12/21/2022 4:03:13 PM	72141
Lead	ND	0.00019	0.00050		mg/L	1	12/21/2022 4:03:13 PM	72141
Selenium	ND	0.00089	0.0010		mg/L	1	12/28/2022 12:44:49 P	72141
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/20/2022 2:24:11 PM	72202

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212913**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-14-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/14/2022 8:30:00 AM
Lab ID: 2212913-001E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	ND	0.0011	0.0020		mg/L	1	12/23/2022 1:41:38 PM	C93558
Beryllium	ND	0.00059	0.0020		mg/L	1	12/23/2022 1:41:38 PM	C93558
Cadmium	ND	0.00098	0.0020		mg/L	1	12/23/2022 1:41:38 PM	C93558
Chromium	ND	0.0020	0.0060		mg/L	1	12/23/2022 1:41:38 PM	C93558
Cobalt	ND	0.0024	0.0060		mg/L	1	12/23/2022 1:41:38 PM	C93558
Nickel	ND	0.0033	0.010		mg/L	1	12/23/2022 1:41:38 PM	C93558
Silver	ND	0.0013	0.0050		mg/L	1	12/23/2022 1:41:38 PM	C93558
Vanadium	ND	0.0017	0.050		mg/L	1	12/23/2022 1:41:38 PM	C93558
Zinc	ND	0.0032	0.010		mg/L	1	12/23/2022 1:41:38 PM	C93558
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	12/15/2022 5:24:00 PM	D93335
Arsenic	ND	0.00012	0.0010		mg/L	1	12/15/2022 5:24:00 PM	D93335
Lead	ND	0.000057	0.00050		mg/L	1	12/15/2022 5:24:00 PM	D93335
Selenium	ND	0.00034	0.0010		mg/L	1	12/15/2022 5:24:00 PM	D93335
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/20/2022 2:26:19 PM	72202

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212913**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/14/2022 9:30:00 AM
Lab ID: 2212913-002A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	70	0.45	2.5		mg/L	50	12/23/2022 1:45:09 AM	R93515
Surr: BFB	92.5	0	70-130		%Rec	50	12/23/2022 1:45:09 AM	R93515
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	31000	110	500		µg/L	500	12/21/2022 7:46:57 PM	R93479
Toluene	190	10	50		µg/L	50	12/21/2022 8:15:39 PM	R93479
Ethylbenzene	1400	11	50		µg/L	50	12/21/2022 8:15:39 PM	R93479
Methyl tert-butyl ether (MTBE)	1200	20	50		µg/L	50	12/21/2022 8:15:39 PM	R93479
1,2,4-Trimethylbenzene	ND	6.1	50		µg/L	50	12/21/2022 8:15:39 PM	R93479
1,3,5-Trimethylbenzene	ND	9.1	50		µg/L	50	12/21/2022 8:15:39 PM	R93479
1,2-Dichloroethane (EDC)	ND	13	50		µg/L	50	12/21/2022 8:15:39 PM	R93479
Acetone	ND	130	500		µg/L	50	12/21/2022 8:15:39 PM	R93479
Bromomethane	ND	43	150		µg/L	50	12/21/2022 8:15:39 PM	R93479
2-Butanone	ND	100	500		µg/L	50	12/21/2022 8:15:39 PM	R93479
Carbon disulfide	ND	30	500		µg/L	50	12/21/2022 8:15:39 PM	R93479
Chlorobenzene	ND	7.8	50		µg/L	50	12/21/2022 8:15:39 PM	R93479
Chloroform	ND	6.7	50		µg/L	50	12/21/2022 8:15:39 PM	R93479
Chloromethane	ND	21	150		µg/L	50	12/21/2022 8:15:39 PM	R93479
cis-1,2-DCE	ND	19	50		µg/L	50	12/21/2022 8:15:39 PM	R93479
1,1-Dichloroethane	ND	14	50		µg/L	50	12/21/2022 8:15:39 PM	R93479
1,1-Dichloroethene	ND	10	50		µg/L	50	12/21/2022 8:15:39 PM	R93479
Isopropylbenzene	33	9.1	50	J	µg/L	50	12/21/2022 8:15:39 PM	R93479
4-Isopropyltoluene	ND	10	50		µg/L	50	12/21/2022 8:15:39 PM	R93479
Methylene Chloride	ND	25	150		µg/L	50	12/21/2022 8:15:39 PM	R93479
n-Butylbenzene	ND	13	150		µg/L	50	12/21/2022 8:15:39 PM	R93479
n-Propylbenzene	110	9.1	50		µg/L	50	12/21/2022 8:15:39 PM	R93479
sec-Butylbenzene	ND	7.2	50		µg/L	50	12/21/2022 8:15:39 PM	R93479
Styrene	ND	6.8	50		µg/L	50	12/21/2022 8:15:39 PM	R93479
Tetrachloroethene (PCE)	ND	18	50		µg/L	50	12/21/2022 8:15:39 PM	R93479
1,1,1-Trichloroethane	ND	15	50		µg/L	50	12/21/2022 8:15:39 PM	R93479
Trichloroethene (TCE)	ND	10	50		µg/L	50	12/21/2022 8:15:39 PM	R93479
Vinyl chloride	ND	16	50		µg/L	50	12/21/2022 8:15:39 PM	R93479
Xylenes, Total	230	19	75		µg/L	50	12/21/2022 8:15:39 PM	R93479
Surr: 1,2-Dichloroethane-d4	103	0	70-130		%Rec	50	12/21/2022 8:15:39 PM	R93479
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	50	12/21/2022 8:15:39 PM	R93479
Surr: Dibromofluoromethane	90.9	0	70-130		%Rec	50	12/21/2022 8:15:39 PM	R93479
Surr: Toluene-d8	107	0	70-130		%Rec	50	12/21/2022 8:15:39 PM	R93479

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212913**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/14/2022 9:30:00 AM
Lab ID: 2212913-002B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	12/22/2022 3:41:07 PM	72230

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212913**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/14/2022 9:30:00 AM
Lab ID: 2212913-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	5.8	0.080	0.32	B	mg/L	5	12/27/2022 7:15:37 PM	72199
Motor Oil Range Organics (MRO)	ND	0.26	0.40	D	mg/L	5	12/27/2022 7:15:37 PM	72199
Surr: DNOP	116	0	15.9-177		%Rec	5	12/27/2022 7:15:37 PM	72199
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	12/21/2022 2:23:07 PM	72138
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	12/21/2022 2:23:07 PM	72138
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	12/21/2022 2:23:07 PM	72138
Di-n-octyl phthalate	ND	12	20		µg/L	1	12/21/2022 2:23:07 PM	72138
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	12/21/2022 2:23:07 PM	72138
Diethyl phthalate	ND	6.0	10		µg/L	1	12/21/2022 2:23:07 PM	72138
Dimethyl phthalate	ND	6.0	10		µg/L	1	12/21/2022 2:23:07 PM	72138
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	12/21/2022 2:23:07 PM	72138
2,4-Dinitrophenol	ND	16	20		µg/L	1	12/21/2022 2:23:07 PM	72138
1-Methylnaphthalene	38	4.3	5.0		µg/L	1	12/21/2022 2:23:07 PM	72138
2-Methylnaphthalene	42	4.2	5.0		µg/L	1	12/21/2022 2:23:07 PM	72138
2-Methylphenol	ND	5.0	10		µg/L	1	12/21/2022 2:23:07 PM	72138
3+4-Methylphenol	ND	5.1	10		µg/L	1	12/21/2022 2:23:07 PM	72138
Naphthalene	71	3.2	5.0		µg/L	1	12/21/2022 2:23:07 PM	72138
Phenol	ND	18	20		µg/L	1	12/21/2022 2:23:07 PM	72138
Pyridine	ND	14	40		µg/L	1	12/21/2022 2:23:07 PM	72138
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	12/21/2022 2:23:07 PM	72138
Surr: 2-Fluorophenol	0	0	15-84.5	S	%Rec	1	12/21/2022 2:23:07 PM	72138
Surr: Phenol-d5	0	0	15-67	S	%Rec	1	12/21/2022 2:23:07 PM	72138
Surr: 2,4,6-Tribromophenol	1.94	0	15-108	S	%Rec	1	12/21/2022 2:23:07 PM	72138
Surr: Nitrobenzene-d5	38.3	0	16.8-112		%Rec	1	12/21/2022 2:23:07 PM	72138
Surr: 2-Fluorobiphenyl	28.9	0	15-101		%Rec	1	12/21/2022 2:23:07 PM	72138
Surr: 4-Terphenyl-d14	56.6	0	34.4-134		%Rec	1	12/21/2022 2:23:07 PM	72138
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	0.84	0.11	1.0	J	µg/L	1	12/20/2022 10:10:00 P	72138
Acenaphthene	1.8	0.14	0.30		µg/L	1	12/20/2022 10:10:00 P	72138
Fluorene	3.0	0.095	0.30		µg/L	1	12/20/2022 10:10:00 P	72138
Phenanthrene	3.5	0.16	0.30		µg/L	1	12/20/2022 10:10:00 P	72138
Anthracene	0.36	0.14	0.30		µg/L	1	12/20/2022 10:10:00 P	72138
Fluoranthene	0.22	0.14	0.30	J	µg/L	1	12/20/2022 10:10:00 P	72138
Pyrene	ND	0.32	1.0		µg/L	1	12/20/2022 10:10:00 P	72138
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	12/20/2022 10:10:00 P	72138
Chrysene	ND	0.25	0.30		µg/L	1	12/20/2022 10:10:00 P	72138
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	12/20/2022 10:10:00 P	72138
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	12/20/2022 10:10:00 P	72138

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212913**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/14/2022 9:30:00 AM
Lab ID: 2212913-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	41.1	0	15-108		%Rec	1	12/20/2022 10:10:00 P	72138
Surr: 2-Fluorobiphenyl	29.8	0	15-107		%Rec	1	12/20/2022 10:10:00 P	72138
Surr: 4-Terphenyl-d14	62.0	0	15-166		%Rec	1	12/20/2022 10:10:00 P	72138

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212913**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/14/2022 9:30:00 AM
Lab ID: 2212913-002D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	4.9	0.0079	0.015	*	mg/L	5	12/21/2022 6:58:19 PM	72141
Beryllium	ND	0.00060	0.0020		mg/L	1	12/21/2022 6:56:19 PM	72141
Cadmium	ND	0.0018	0.0020		mg/L	1	12/21/2022 6:56:19 PM	72141
Chromium	ND	0.0020	0.0060		mg/L	1	12/21/2022 6:56:19 PM	72141
Cobalt	ND	0.0035	0.0060		mg/L	1	12/21/2022 6:56:19 PM	72141
Nickel	0.048	0.0053	0.010		mg/L	1	12/21/2022 6:56:19 PM	72141
Silver	0.0020	0.0018	0.0050	J	mg/L	1	12/21/2022 6:56:19 PM	72141
Vanadium	0.0048	0.0035	0.050	J	mg/L	1	12/21/2022 6:56:19 PM	72141
Zinc	ND	0.0039	0.010		mg/L	1	12/21/2022 6:56:19 PM	72141
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	0.00053	0.00044	0.0010	J	mg/L	1	12/21/2022 4:05:40 PM	72141
Arsenic	0.0027	0.00022	0.0010		mg/L	1	12/21/2022 4:05:40 PM	72141
Lead	ND	0.00019	0.00050		mg/L	1	12/21/2022 4:05:40 PM	72141
Selenium	ND	0.00089	0.0010		mg/L	1	12/28/2022 12:54:34 P	72141
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/20/2022 2:28:27 PM	72202

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212913**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/14/2022 9:30:00 AM
Lab ID: 2212913-002E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	4.7	0.011	0.020	*	mg/L	10	12/23/2022 1:46:37 PM	C93558
Beryllium	ND	0.00059	0.0020		mg/L	1	12/23/2022 1:43:45 PM	C93558
Cadmium	ND	0.00098	0.0020		mg/L	1	12/23/2022 1:43:45 PM	C93558
Chromium	ND	0.0020	0.0060		mg/L	1	12/23/2022 1:43:45 PM	C93558
Cobalt	ND	0.0024	0.0060		mg/L	1	12/23/2022 1:43:45 PM	C93558
Nickel	0.045	0.0033	0.010		mg/L	1	12/23/2022 1:43:45 PM	C93558
Silver	0.0017	0.0013	0.0050	J	mg/L	1	12/23/2022 1:43:45 PM	C93558
Vanadium	0.0032	0.0017	0.050	J	mg/L	1	12/23/2022 1:43:45 PM	C93558
Zinc	ND	0.0032	0.010		mg/L	1	12/23/2022 1:43:45 PM	C93558
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	0.0027	0.0022	0.0050	J	mg/L	5	12/15/2022 5:31:46 PM	D93335
Arsenic	0.0025	0.00061	0.0050	J	mg/L	5	12/15/2022 5:31:46 PM	D93335
Lead	0.00034	0.00028	0.0025	J	mg/L	5	12/15/2022 5:31:46 PM	D93335
Selenium	ND	0.0017	0.0050		mg/L	5	12/15/2022 5:31:46 PM	D93335
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/20/2022 2:30:35 PM	72202

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212913**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-70
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/14/2022 10:25:00 AM
Lab ID: 2212913-003A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	0.20	0.0090	0.050		mg/L	1	12/23/2022 2:54:35 AM	R93515
Surr: BFB	235	0	70-130	S	%Rec	1	12/23/2022 2:54:35 AM	R93515
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	2.8	0.23	1.0		µg/L	1	12/21/2022 8:44:15 PM	R93479
Toluene	ND	0.20	1.0		µg/L	1	12/21/2022 8:44:15 PM	R93479
Ethylbenzene	ND	0.21	1.0		µg/L	1	12/21/2022 8:44:15 PM	R93479
Methyl tert-butyl ether (MTBE)	58	0.39	1.0		µg/L	1	12/21/2022 8:44:15 PM	R93479
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	12/21/2022 8:44:15 PM	R93479
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	12/21/2022 8:44:15 PM	R93479
1,2-Dichloroethane (EDC)	7.2	0.25	1.0		µg/L	1	12/21/2022 8:44:15 PM	R93479
Acetone	ND	2.5	10		µg/L	1	12/21/2022 8:44:15 PM	R93479
Bromomethane	ND	0.85	3.0		µg/L	1	12/21/2022 8:44:15 PM	R93479
2-Butanone	ND	2.0	10		µg/L	1	12/21/2022 8:44:15 PM	R93479
Carbon disulfide	ND	0.59	10		µg/L	1	12/21/2022 8:44:15 PM	R93479
Chlorobenzene	ND	0.16	1.0		µg/L	1	12/21/2022 8:44:15 PM	R93479
Chloroform	ND	0.13	1.0		µg/L	1	12/21/2022 8:44:15 PM	R93479
Chloromethane	ND	0.41	3.0		µg/L	1	12/21/2022 8:44:15 PM	R93479
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	12/21/2022 8:44:15 PM	R93479
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	12/21/2022 8:44:15 PM	R93479
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	12/21/2022 8:44:15 PM	R93479
Isopropylbenzene	8.5	0.18	1.0		µg/L	1	12/21/2022 8:44:15 PM	R93479
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	12/21/2022 8:44:15 PM	R93479
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/21/2022 8:44:15 PM	R93479
n-Butylbenzene	0.45	0.25	3.0	J	µg/L	1	12/21/2022 8:44:15 PM	R93479
n-Propylbenzene	ND	0.18	1.0		µg/L	1	12/21/2022 8:44:15 PM	R93479
sec-Butylbenzene	2.2	0.14	1.0		µg/L	1	12/21/2022 8:44:15 PM	R93479
Styrene	ND	0.14	1.0		µg/L	1	12/21/2022 8:44:15 PM	R93479
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/21/2022 8:44:15 PM	R93479
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	12/21/2022 8:44:15 PM	R93479
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	12/21/2022 8:44:15 PM	R93479
Vinyl chloride	ND	0.32	1.0		µg/L	1	12/21/2022 8:44:15 PM	R93479
Xylenes, Total	ND	0.37	1.5		µg/L	1	12/21/2022 8:44:15 PM	R93479
Surr: 1,2-Dichloroethane-d4	126	0	70-130		%Rec	1	12/21/2022 8:44:15 PM	R93479
Surr: 4-Bromofluorobenzene	97.6	0	70-130		%Rec	1	12/21/2022 8:44:15 PM	R93479
Surr: Dibromofluoromethane	96.5	0	70-130		%Rec	1	12/21/2022 8:44:15 PM	R93479
Surr: Toluene-d8	108	0	70-130		%Rec	1	12/21/2022 8:44:15 PM	R93479

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

Analytical Report
Lab Order: **2212913**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-70
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/14/2022 10:25:00 AM
Lab ID: 2212913-003B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	12/22/2022 3:56:06 PM	72230

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212913**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-70
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/14/2022 10:25:00 AM
Lab ID: 2212913-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.95	0.016	0.064	B	mg/L	1	12/22/2022 7:23:06 PM	72199
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/22/2022 7:23:06 PM	72199
Surr: DNOP	109	0	15.9-177		%Rec	1	12/22/2022 7:23:06 PM	72199
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	12/21/2022 3:04:42 PM	72138
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	12/21/2022 3:04:42 PM	72138
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	12/21/2022 3:04:42 PM	72138
Di-n-octyl phthalate	ND	12	20		µg/L	1	12/21/2022 3:04:42 PM	72138
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	12/21/2022 3:04:42 PM	72138
Diethyl phthalate	ND	6.0	10		µg/L	1	12/21/2022 3:04:42 PM	72138
Dimethyl phthalate	ND	6.0	10		µg/L	1	12/21/2022 3:04:42 PM	72138
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	12/21/2022 3:04:42 PM	72138
2,4-Dinitrophenol	ND	16	20		µg/L	1	12/21/2022 3:04:42 PM	72138
2-Methylphenol	ND	5.0	10		µg/L	1	12/21/2022 3:04:42 PM	72138
3+4-Methylphenol	ND	5.1	10		µg/L	1	12/21/2022 3:04:42 PM	72138
Phenol	ND	18	20		µg/L	1	12/21/2022 3:04:42 PM	72138
Pyridine	ND	14	40		µg/L	1	12/21/2022 3:04:42 PM	72138
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	12/21/2022 3:04:42 PM	72138
Surr: 2-Fluorophenol	32.4	0	15-84.5		%Rec	1	12/21/2022 3:04:42 PM	72138
Surr: Phenol-d5	26.6	0	15-67		%Rec	1	12/21/2022 3:04:42 PM	72138
Surr: 2,4,6-Tribromophenol	69.4	0	15-108		%Rec	1	12/21/2022 3:04:42 PM	72138
Surr: Nitrobenzene-d5	44.4	0	16.8-112		%Rec	1	12/21/2022 3:04:42 PM	72138
Surr: 2-Fluorobiphenyl	39.5	0	15-101		%Rec	1	12/21/2022 3:04:42 PM	72138
Surr: 4-Terphenyl-d14	80.7	0	34.4-134		%Rec	1	12/21/2022 3:04:42 PM	72138
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	0.36	0.11	1.0	J	µg/L	1	12/20/2022 11:49:00 P	72138
Naphthalene	ND	0.20	0.30		µg/L	1	12/20/2022 11:49:00 P	72138
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	12/20/2022 11:49:00 P	72138
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	12/20/2022 11:49:00 P	72138
Acenaphthene	ND	0.14	0.30		µg/L	1	12/20/2022 11:49:00 P	72138
Fluorene	ND	0.095	0.30		µg/L	1	12/20/2022 11:49:00 P	72138
Phenanthrene	0.46	0.16	0.30		µg/L	1	12/20/2022 11:49:00 P	72138
Anthracene	ND	0.14	0.30		µg/L	1	12/20/2022 11:49:00 P	72138
Fluoranthene	ND	0.14	0.30		µg/L	1	12/20/2022 11:49:00 P	72138
Pyrene	ND	0.32	1.0		µg/L	1	12/20/2022 11:49:00 P	72138
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	12/20/2022 11:49:00 P	72138
Chrysene	ND	0.25	0.30		µg/L	1	12/20/2022 11:49:00 P	72138
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	12/20/2022 11:49:00 P	72138
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	12/20/2022 11:49:00 P	72138

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212913**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-70
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/14/2022 10:25:00 AM
Lab ID: 2212913-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	39.4	0	15-108		%Rec	1	12/20/2022 11:49:00 P	72138
Surr: 2-Fluorobiphenyl	34.0	0	15-107		%Rec	1	12/20/2022 11:49:00 P	72138
Surr: 4-Terphenyl-d14	68.3	0	15-166		%Rec	1	12/20/2022 11:49:00 P	72138

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212913**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-70
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/14/2022 10:25:00 AM
Lab ID: 2212913-003D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	1.1	0.0079	0.015		mg/L	5	12/21/2022 7:02:20 PM	72141
Beryllium	0.0013	0.00060	0.0020	J	mg/L	1	12/21/2022 7:00:26 PM	72141
Cadmium	ND	0.0018	0.0020		mg/L	1	12/21/2022 7:00:26 PM	72141
Chromium	0.012	0.0020	0.0060		mg/L	1	12/21/2022 7:00:26 PM	72141
Cobalt	0.010	0.0035	0.0060		mg/L	1	12/21/2022 7:00:26 PM	72141
Nickel	0.051	0.0053	0.010		mg/L	1	12/21/2022 7:00:26 PM	72141
Silver	ND	0.0018	0.0050		mg/L	1	12/21/2022 7:00:26 PM	72141
Vanadium	0.021	0.0035	0.050	J	mg/L	1	12/21/2022 7:00:26 PM	72141
Zinc	0.014	0.0039	0.010		mg/L	1	12/21/2022 7:00:26 PM	72141
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	12/21/2022 4:08:06 PM	72141
Arsenic	0.0037	0.00022	0.0010		mg/L	1	12/21/2022 4:08:06 PM	72141
Lead	0.0046	0.00019	0.00050		mg/L	1	12/21/2022 4:08:06 PM	72141
Selenium	0.0031	0.00089	0.0010		mg/L	1	12/28/2022 1:16:34 PM	72141
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/20/2022 2:32:45 PM	72202

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212913**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-70
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/14/2022 10:25:00 AM
Lab ID: 2212913-003E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.64	0.0011	0.0020		mg/L	1	12/23/2022 1:59:04 PM	C93558
Beryllium	ND	0.00059	0.0020		mg/L	1	12/23/2022 1:59:04 PM	C93558
Cadmium	ND	0.00098	0.0020		mg/L	1	12/23/2022 1:59:04 PM	C93558
Chromium	ND	0.0020	0.0060		mg/L	1	12/23/2022 1:59:04 PM	C93558
Cobalt	0.0056	0.0024	0.0060	J	mg/L	1	12/23/2022 1:59:04 PM	C93558
Nickel	0.037	0.0033	0.010		mg/L	1	12/23/2022 1:59:04 PM	C93558
Silver	ND	0.0013	0.0050		mg/L	1	12/23/2022 1:59:04 PM	C93558
Vanadium	0.0018	0.0017	0.050	J	mg/L	1	12/23/2022 1:59:04 PM	C93558
Zinc	ND	0.0032	0.010		mg/L	1	12/23/2022 1:59:04 PM	C93558
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	12/15/2022 5:35:39 PM	D93335
Arsenic	0.0015	0.00061	0.0050	J	mg/L	5	12/15/2022 5:35:39 PM	D93335
Lead	0.00031	0.00028	0.0025	J	mg/L	5	12/15/2022 5:35:39 PM	D93335
Selenium	ND	0.0017	0.0050		mg/L	5	12/15/2022 5:35:39 PM	D93335
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/20/2022 2:34:54 PM	72202

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212913**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPI-2
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/14/2022 10:45:00 AM
Lab ID: 2212913-004A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	3.6	0.090	0.50		mg/L	10	12/23/2022 3:17:41 AM	R93515
Surr: BFB	104	0	70-130		%Rec	10	12/23/2022 3:17:41 AM	R93515
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	1400	4.5	20		µg/L	20	12/21/2022 9:12:51 PM	R93479
Toluene	1.1	0.40	2.0	J	µg/L	2	12/21/2022 9:41:27 PM	R93479
Ethylbenzene	220	4.3	20		µg/L	20	12/21/2022 9:12:51 PM	R93479
Methyl tert-butyl ether (MTBE)	62	0.79	2.0		µg/L	2	12/21/2022 9:41:27 PM	R93479
1,2,4-Trimethylbenzene	1.4	0.24	2.0	J	µg/L	2	12/21/2022 9:41:27 PM	R93479
1,3,5-Trimethylbenzene	ND	0.36	2.0		µg/L	2	12/21/2022 9:41:27 PM	R93479
1,2-Dichloroethane (EDC)	ND	0.51	2.0		µg/L	2	12/21/2022 9:41:27 PM	R93479
Acetone	ND	5.0	20		µg/L	2	12/21/2022 9:41:27 PM	R93479
Bromomethane	ND	1.7	6.0		µg/L	2	12/21/2022 9:41:27 PM	R93479
2-Butanone	ND	4.1	20		µg/L	2	12/21/2022 9:41:27 PM	R93479
Carbon disulfide	ND	1.2	20		µg/L	2	12/21/2022 9:41:27 PM	R93479
Chlorobenzene	ND	0.31	2.0		µg/L	2	12/21/2022 9:41:27 PM	R93479
Chloroform	ND	0.27	2.0		µg/L	2	12/21/2022 9:41:27 PM	R93479
Chloromethane	ND	0.82	6.0		µg/L	2	12/21/2022 9:41:27 PM	R93479
cis-1,2-DCE	ND	0.78	2.0		µg/L	2	12/21/2022 9:41:27 PM	R93479
1,1-Dichloroethane	ND	0.55	2.0		µg/L	2	12/21/2022 9:41:27 PM	R93479
1,1-Dichloroethene	ND	0.40	2.0		µg/L	2	12/21/2022 9:41:27 PM	R93479
Isopropylbenzene	18	0.37	2.0		µg/L	2	12/21/2022 9:41:27 PM	R93479
4-Isopropyltoluene	ND	0.40	2.0		µg/L	2	12/21/2022 9:41:27 PM	R93479
Methylene Chloride	ND	1.0	6.0		µg/L	2	12/21/2022 9:41:27 PM	R93479
n-Butylbenzene	1.5	0.51	6.0	J	µg/L	2	12/21/2022 9:41:27 PM	R93479
n-Propylbenzene	18	0.36	2.0		µg/L	2	12/21/2022 9:41:27 PM	R93479
sec-Butylbenzene	2.2	0.29	2.0		µg/L	2	12/21/2022 9:41:27 PM	R93479
Styrene	ND	0.27	2.0		µg/L	2	12/21/2022 9:41:27 PM	R93479
Tetrachloroethene (PCE)	ND	0.71	2.0		µg/L	2	12/21/2022 9:41:27 PM	R93479
1,1,1-Trichloroethane	ND	0.60	2.0		µg/L	2	12/21/2022 9:41:27 PM	R93479
Trichloroethene (TCE)	ND	0.41	2.0		µg/L	2	12/21/2022 9:41:27 PM	R93479
Vinyl chloride	ND	0.64	2.0		µg/L	2	12/21/2022 9:41:27 PM	R93479
Xylenes, Total	14	0.74	3.0		µg/L	2	12/21/2022 9:41:27 PM	R93479
Surr: 1,2-Dichloroethane-d4	87.8	0	70-130		%Rec	2	12/21/2022 9:41:27 PM	R93479
Surr: 4-Bromofluorobenzene	91.2	0	70-130		%Rec	2	12/21/2022 9:41:27 PM	R93479
Surr: Dibromofluoromethane	80.7	0	70-130		%Rec	2	12/21/2022 9:41:27 PM	R93479
Surr: Toluene-d8	109	0	70-130		%Rec	2	12/21/2022 9:41:27 PM	R93479

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212913**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPI-2
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/14/2022 10:45:00 AM
Lab ID: 2212913-004B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0094		µg/L	1	12/22/2022 4:11:04 PM	72230

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212913**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPI-2
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/14/2022 10:45:00 AM
Lab ID: 2212913-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	2.5	0.016	0.064	B	mg/L	1	12/22/2022 7:46:32 PM	72199
Motor Oil Range Organics (MRO)	0.19	0.052	0.080		mg/L	1	12/22/2022 7:46:32 PM	72199
Surr: DNOP	105	0	15.9-177		%Rec	1	12/22/2022 7:46:32 PM	72199
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	12/21/2022 3:46:18 PM	72138
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	12/21/2022 3:46:18 PM	72138
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	12/21/2022 3:46:18 PM	72138
Di-n-octyl phthalate	ND	12	20		µg/L	1	12/21/2022 3:46:18 PM	72138
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	12/21/2022 3:46:18 PM	72138
Diethyl phthalate	ND	6.0	10		µg/L	1	12/21/2022 3:46:18 PM	72138
Dimethyl phthalate	ND	6.0	10		µg/L	1	12/21/2022 3:46:18 PM	72138
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	12/21/2022 3:46:18 PM	72138
2,4-Dinitrophenol	ND	16	20		µg/L	1	12/21/2022 3:46:18 PM	72138
1-Methylnaphthalene	35	4.3	5.0		µg/L	1	12/21/2022 3:46:18 PM	72138
2-Methylphenol	ND	5.0	10		µg/L	1	12/21/2022 3:46:18 PM	72138
3+4-Methylphenol	ND	5.1	10		µg/L	1	12/21/2022 3:46:18 PM	72138
Phenol	ND	18	20		µg/L	1	12/21/2022 3:46:18 PM	72138
Pyridine	ND	14	40		µg/L	1	12/21/2022 3:46:18 PM	72138
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	12/21/2022 3:46:18 PM	72138
Surr: 2-Fluorophenol	40.1	0	15-84.5		%Rec	1	12/21/2022 3:46:18 PM	72138
Surr: Phenol-d5	31.2	0	15-67		%Rec	1	12/21/2022 3:46:18 PM	72138
Surr: 2,4,6-Tribromophenol	73.5	0	15-108		%Rec	1	12/21/2022 3:46:18 PM	72138
Surr: Nitrobenzene-d5	57.7	0	16.8-112		%Rec	1	12/21/2022 3:46:18 PM	72138
Surr: 2-Fluorobiphenyl	49.5	0	15-101		%Rec	1	12/21/2022 3:46:18 PM	72138
Surr: 4-Terphenyl-d14	78.5	0	34.4-134		%Rec	1	12/21/2022 3:46:18 PM	72138
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	2.2	0.11	1.0		µg/L	1	12/21/2022 12:32:00 A	72138
Naphthalene	11	0.20	0.30		µg/L	1	12/21/2022 12:32:00 A	72138
2-Methylnaphthalene	4.3	0.14	0.30		µg/L	1	12/21/2022 12:32:00 A	72138
Acenaphthene	1.9	0.14	0.30		µg/L	1	12/21/2022 12:32:00 A	72138
Fluorene	2.3	0.095	0.30		µg/L	1	12/21/2022 12:32:00 A	72138
Phenanthrene	0.62	0.16	0.30		µg/L	1	12/21/2022 12:32:00 A	72138
Anthracene	0.20	0.14	0.30	J	µg/L	1	12/21/2022 12:32:00 A	72138
Fluoranthene	ND	0.14	0.30		µg/L	1	12/21/2022 12:32:00 A	72138
Pyrene	ND	0.32	1.0		µg/L	1	12/21/2022 12:32:00 A	72138
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	12/21/2022 12:32:00 A	72138
Chrysene	ND	0.25	0.30		µg/L	1	12/21/2022 12:32:00 A	72138
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	12/21/2022 12:32:00 A	72138
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	12/21/2022 12:32:00 A	72138

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212913**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPI-2
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/14/2022 10:45:00 AM
Lab ID: 2212913-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	52.5	0	15-108		%Rec	1	12/21/2022 12:32:00 A	72138
Surr: 2-Fluorobiphenyl	44.4	0	15-107		%Rec	1	12/21/2022 12:32:00 A	72138
Surr: 4-Terphenyl-d14	69.8	0	15-166		%Rec	1	12/21/2022 12:32:00 A	72138

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212913**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPI-2
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/14/2022 10:45:00 AM
Lab ID: 2212913-004D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	3.2	0.0079	0.015	*	mg/L	5	12/21/2022 7:06:15 PM	72141
Beryllium	0.00060	0.00060	0.0020	J	mg/L	1	12/21/2022 7:04:19 PM	72141
Cadmium	ND	0.0018	0.0020		mg/L	1	12/21/2022 7:04:19 PM	72141
Chromium	ND	0.0020	0.0060		mg/L	1	12/21/2022 7:04:19 PM	72141
Cobalt	ND	0.0035	0.0060		mg/L	1	12/21/2022 7:04:19 PM	72141
Nickel	0.12	0.0053	0.010	*	mg/L	1	12/21/2022 7:04:19 PM	72141
Silver	ND	0.0018	0.0050		mg/L	1	12/21/2022 7:04:19 PM	72141
Vanadium	0.0076	0.0035	0.050	J	mg/L	1	12/21/2022 7:04:19 PM	72141
Zinc	0.0073	0.0039	0.010	J	mg/L	1	12/21/2022 7:04:19 PM	72141
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	12/21/2022 4:10:33 PM	72141
Arsenic	0.0020	0.00022	0.0010		mg/L	1	12/21/2022 4:10:33 PM	72141
Lead	0.0020	0.00019	0.00050		mg/L	1	12/21/2022 4:10:33 PM	72141
Selenium	0.0010	0.00089	0.0010		mg/L	1	12/28/2022 1:09:13 PM	72141
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/20/2022 2:41:19 PM	72202

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212913**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPI-2
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/14/2022 10:45:00 AM
Lab ID: 2212913-004E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	3.0	0.0056	0.010	*	mg/L	5	12/23/2022 2:05:30 PM	C93558
Beryllium	ND	0.00059	0.0020		mg/L	1	12/23/2022 2:02:18 PM	C93558
Cadmium	ND	0.00098	0.0020		mg/L	1	12/23/2022 2:02:18 PM	C93558
Chromium	ND	0.0020	0.0060		mg/L	1	12/23/2022 2:02:18 PM	C93558
Cobalt	ND	0.0024	0.0060		mg/L	1	12/23/2022 2:02:18 PM	C93558
Nickel	0.094	0.0033	0.010		mg/L	1	12/23/2022 2:02:18 PM	C93558
Silver	ND	0.0013	0.0050		mg/L	1	12/23/2022 2:02:18 PM	C93558
Vanadium	0.0026	0.0017	0.050	J	mg/L	1	12/23/2022 2:02:18 PM	C93558
Zinc	ND	0.0032	0.010		mg/L	1	12/23/2022 2:02:18 PM	C93558
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	12/15/2022 5:39:32 PM	D93335
Arsenic	0.0015	0.00061	0.0050	J	mg/L	5	12/15/2022 5:39:32 PM	D93335
Lead	ND	0.00028	0.0025		mg/L	5	12/15/2022 5:39:32 PM	D93335
Selenium	ND	0.0017	0.0050		mg/L	5	12/15/2022 5:39:32 PM	D93335
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/20/2022 2:43:27 PM	72202

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212913**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPI-3
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/14/2022 11:15:00 AM
Lab ID: 2212913-005A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	0.20	0.0090	0.050		mg/L	1	12/23/2022 3:40:47 AM	R93515
Surr: BFB	147	0	70-130	S	%Rec	1	12/23/2022 3:40:47 AM	R93515
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	1.2	0.23	1.0		µg/L	1	12/21/2022 10:10:00 P	R93479
Toluene	ND	0.20	1.0		µg/L	1	12/21/2022 10:10:00 P	R93479
Ethylbenzene	8.9	0.21	1.0		µg/L	1	12/21/2022 10:10:00 P	R93479
Methyl tert-butyl ether (MTBE)	87	0.39	1.0		µg/L	1	12/21/2022 10:10:00 P	R93479
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	12/21/2022 10:10:00 P	R93479
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	12/21/2022 10:10:00 P	R93479
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	12/21/2022 10:10:00 P	R93479
Acetone	ND	2.5	10		µg/L	1	12/21/2022 10:10:00 P	R93479
Bromomethane	ND	0.85	3.0		µg/L	1	12/21/2022 10:10:00 P	R93479
2-Butanone	ND	2.0	10		µg/L	1	12/21/2022 10:10:00 P	R93479
Carbon disulfide	ND	0.59	10		µg/L	1	12/21/2022 10:10:00 P	R93479
Chlorobenzene	ND	0.16	1.0		µg/L	1	12/21/2022 10:10:00 P	R93479
Chloroform	ND	0.13	1.0		µg/L	1	12/21/2022 10:10:00 P	R93479
Chloromethane	ND	0.41	3.0		µg/L	1	12/21/2022 10:10:00 P	R93479
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	12/21/2022 10:10:00 P	R93479
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	12/21/2022 10:10:00 P	R93479
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	12/21/2022 10:10:00 P	R93479
Isopropylbenzene	2.1	0.18	1.0		µg/L	1	12/21/2022 10:10:00 P	R93479
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	12/21/2022 10:10:00 P	R93479
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/21/2022 10:10:00 P	R93479
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/21/2022 10:10:00 P	R93479
n-Propylbenzene	0.83	0.18	1.0	J	µg/L	1	12/21/2022 10:10:00 P	R93479
sec-Butylbenzene	0.93	0.14	1.0	J	µg/L	1	12/21/2022 10:10:00 P	R93479
Styrene	ND	0.14	1.0		µg/L	1	12/21/2022 10:10:00 P	R93479
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/21/2022 10:10:00 P	R93479
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	12/21/2022 10:10:00 P	R93479
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	12/21/2022 10:10:00 P	R93479
Vinyl chloride	ND	0.32	1.0		µg/L	1	12/21/2022 10:10:00 P	R93479
Xylenes, Total	ND	0.37	1.5		µg/L	1	12/21/2022 10:10:00 P	R93479
Surr: 1,2-Dichloroethane-d4	98.6	0	70-130		%Rec	1	12/21/2022 10:10:00 P	R93479
Surr: 4-Bromofluorobenzene	98.5	0	70-130		%Rec	1	12/21/2022 10:10:00 P	R93479
Surr: Dibromofluoromethane	89.7	0	70-130		%Rec	1	12/21/2022 10:10:00 P	R93479
Surr: Toluene-d8	110	0	70-130		%Rec	1	12/21/2022 10:10:00 P	R93479

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212913**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPI-3
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/14/2022 11:15:00 AM
Lab ID: 2212913-005B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0026	0.0092		µg/L	1	12/22/2022 4:26:02 PM	72230

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212913**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPI-3
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/14/2022 11:15:00 AM
Lab ID: 2212913-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.79	0.016	0.064	B	mg/L	1	12/22/2022 8:10:17 PM	72199
Motor Oil Range Organics (MRO)	0.070	0.052	0.080	J	mg/L	1	12/22/2022 8:10:17 PM	72199
Surr: DNOP	99.6	0	15.9-177		%Rec	1	12/22/2022 8:10:17 PM	72199
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	12/21/2022 4:27:37 PM	72138
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	12/21/2022 4:27:37 PM	72138
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	12/21/2022 4:27:37 PM	72138
Di-n-octyl phthalate	ND	12	20		µg/L	1	12/21/2022 4:27:37 PM	72138
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	12/21/2022 4:27:37 PM	72138
Diethyl phthalate	ND	6.0	10		µg/L	1	12/21/2022 4:27:37 PM	72138
Dimethyl phthalate	ND	6.0	10		µg/L	1	12/21/2022 4:27:37 PM	72138
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	12/21/2022 4:27:37 PM	72138
2,4-Dinitrophenol	ND	16	20		µg/L	1	12/21/2022 4:27:37 PM	72138
2-Methylphenol	ND	5.0	10		µg/L	1	12/21/2022 4:27:37 PM	72138
3+4-Methylphenol	ND	5.1	10		µg/L	1	12/21/2022 4:27:37 PM	72138
Phenol	ND	18	20		µg/L	1	12/21/2022 4:27:37 PM	72138
Pyridine	ND	14	40		µg/L	1	12/21/2022 4:27:37 PM	72138
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	12/21/2022 4:27:37 PM	72138
Surr: 2-Fluorophenol	33.4	0	15-84.5		%Rec	1	12/21/2022 4:27:37 PM	72138
Surr: Phenol-d5	25.9	0	15-67		%Rec	1	12/21/2022 4:27:37 PM	72138
Surr: 2,4,6-Tribromophenol	59.0	0	15-108		%Rec	1	12/21/2022 4:27:37 PM	72138
Surr: Nitrobenzene-d5	44.8	0	16.8-112		%Rec	1	12/21/2022 4:27:37 PM	72138
Surr: 2-Fluorobiphenyl	38.2	0	15-101		%Rec	1	12/21/2022 4:27:37 PM	72138
Surr: 4-Terphenyl-d14	68.0	0	34.4-134		%Rec	1	12/21/2022 4:27:37 PM	72138
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	0.42	0.11	1.0	J	µg/L	1	12/21/2022 1:14:00 AM	72138
Naphthalene	ND	0.20	0.30		µg/L	1	12/21/2022 1:14:00 AM	72138
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	12/21/2022 1:14:00 AM	72138
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	12/21/2022 1:14:00 AM	72138
Acenaphthene	0.36	0.14	0.30		µg/L	1	12/21/2022 1:14:00 AM	72138
Fluorene	ND	0.095	0.30		µg/L	1	12/21/2022 1:14:00 AM	72138
Phenanthrene	ND	0.16	0.30		µg/L	1	12/21/2022 1:14:00 AM	72138
Anthracene	ND	0.14	0.30		µg/L	1	12/21/2022 1:14:00 AM	72138
Fluoranthene	ND	0.14	0.30		µg/L	1	12/21/2022 1:14:00 AM	72138
Pyrene	ND	0.32	1.0		µg/L	1	12/21/2022 1:14:00 AM	72138
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	12/21/2022 1:14:00 AM	72138
Chrysene	ND	0.25	0.30		µg/L	1	12/21/2022 1:14:00 AM	72138
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	12/21/2022 1:14:00 AM	72138
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	12/21/2022 1:14:00 AM	72138

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212913**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPI-3
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/14/2022 11:15:00 AM
Lab ID: 2212913-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	42.9	0	15-108		%Rec	1	12/21/2022 1:14:00 AM	72138
Surr: 2-Fluorobiphenyl	34.9	0	15-107		%Rec	1	12/21/2022 1:14:00 AM	72138
Surr: 4-Terphenyl-d14	64.1	0	15-166		%Rec	1	12/21/2022 1:14:00 AM	72138

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212913**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPI-3
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/14/2022 11:15:00 AM
Lab ID: 2212913-005D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	1.6	0.0079	0.015		mg/L	5	12/21/2022 7:10:16 PM	72141
Beryllium	ND	0.00060	0.0020		mg/L	1	12/21/2022 7:08:21 PM	72141
Cadmium	ND	0.0018	0.0020		mg/L	1	12/21/2022 7:08:21 PM	72141
Chromium	ND	0.0020	0.0060		mg/L	1	12/21/2022 7:08:21 PM	72141
Cobalt	ND	0.0035	0.0060		mg/L	1	12/21/2022 7:08:21 PM	72141
Nickel	0.025	0.0053	0.010		mg/L	1	12/21/2022 7:08:21 PM	72141
Silver	0.0021	0.0018	0.0050	J	mg/L	1	12/21/2022 7:08:21 PM	72141
Vanadium	0.0038	0.0035	0.050	J	mg/L	1	12/21/2022 7:08:21 PM	72141
Zinc	ND	0.0039	0.010		mg/L	1	12/21/2022 7:08:21 PM	72141
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	12/21/2022 4:12:59 PM	72141
Arsenic	0.0030	0.00022	0.0010		mg/L	1	12/21/2022 4:12:59 PM	72141
Lead	0.00043	0.00019	0.00050	J	mg/L	1	12/21/2022 4:12:59 PM	72141
Selenium	0.0015	0.00089	0.0010		mg/L	1	12/28/2022 1:14:07 PM	72141
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/20/2022 2:45:36 PM	72202

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212913**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPI-3
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/14/2022 11:15:00 AM
Lab ID: 2212913-005E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	1.4	0.0056	0.010		mg/L	5	12/23/2022 2:11:48 PM	C93558
Beryllium	ND	0.00059	0.0020		mg/L	1	12/23/2022 2:08:35 PM	C93558
Cadmium	ND	0.00098	0.0020		mg/L	1	12/23/2022 2:08:35 PM	C93558
Chromium	ND	0.0020	0.0060		mg/L	1	12/23/2022 2:08:35 PM	C93558
Cobalt	ND	0.0024	0.0060		mg/L	1	12/23/2022 2:08:35 PM	C93558
Nickel	0.019	0.0033	0.010		mg/L	1	12/23/2022 2:08:35 PM	C93558
Silver	0.0015	0.0013	0.0050	J	mg/L	1	12/23/2022 2:08:35 PM	C93558
Vanadium	ND	0.0017	0.050		mg/L	1	12/23/2022 2:08:35 PM	C93558
Zinc	ND	0.0032	0.010		mg/L	1	12/23/2022 2:08:35 PM	C93558
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	12/15/2022 5:43:25 PM	D93335
Arsenic	0.0021	0.00061	0.0050	J	mg/L	5	12/15/2022 5:43:25 PM	D93335
Lead	ND	0.00028	0.0025		mg/L	5	12/15/2022 5:43:25 PM	D93335
Selenium	ND	0.0017	0.0050		mg/L	5	12/15/2022 5:43:25 PM	D93335
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/20/2022 2:47:44 PM	72202

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212913**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: KA-3
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/14/2022 11:30:00 AM
Lab ID: 2212913-006A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	0.071	0.0090	0.050		mg/L	1	12/23/2022 4:03:52 AM	R93515
Surr: BFB	89.8	0	70-130		%Rec	1	12/23/2022 4:03:52 AM	R93515
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	12/22/2022 12:32:47 A	R93479
Toluene	ND	0.20	1.0		µg/L	1	12/22/2022 12:32:47 A	R93479
Ethylbenzene	ND	0.21	1.0		µg/L	1	12/22/2022 12:32:47 A	R93479
Methyl tert-butyl ether (MTBE)	74	0.39	1.0		µg/L	1	12/22/2022 12:32:47 A	R93479
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	12/22/2022 12:32:47 A	R93479
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	12/22/2022 12:32:47 A	R93479
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	12/22/2022 12:32:47 A	R93479
Acetone	ND	2.5	10		µg/L	1	12/22/2022 12:32:47 A	R93479
Bromomethane	ND	0.85	3.0		µg/L	1	12/22/2022 12:32:47 A	R93479
2-Butanone	ND	2.0	10		µg/L	1	12/22/2022 12:32:47 A	R93479
Carbon disulfide	ND	0.59	10		µg/L	1	12/22/2022 12:32:47 A	R93479
Chlorobenzene	ND	0.16	1.0		µg/L	1	12/22/2022 12:32:47 A	R93479
Chloroform	ND	0.13	1.0		µg/L	1	12/22/2022 12:32:47 A	R93479
Chloromethane	ND	0.41	3.0		µg/L	1	12/22/2022 12:32:47 A	R93479
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	12/22/2022 12:32:47 A	R93479
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	12/22/2022 12:32:47 A	R93479
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	12/22/2022 12:32:47 A	R93479
Isopropylbenzene	ND	0.18	1.0		µg/L	1	12/22/2022 12:32:47 A	R93479
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	12/22/2022 12:32:47 A	R93479
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/22/2022 12:32:47 A	R93479
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/22/2022 12:32:47 A	R93479
n-Propylbenzene	ND	0.18	1.0		µg/L	1	12/22/2022 12:32:47 A	R93479
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	12/22/2022 12:32:47 A	R93479
Styrene	ND	0.14	1.0		µg/L	1	12/22/2022 12:32:47 A	R93479
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/22/2022 12:32:47 A	R93479
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	12/22/2022 12:32:47 A	R93479
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	12/22/2022 12:32:47 A	R93479
Vinyl chloride	ND	0.32	1.0		µg/L	1	12/22/2022 12:32:47 A	R93479
Xylenes, Total	ND	0.37	1.5		µg/L	1	12/22/2022 12:32:47 A	R93479
Surr: 1,2-Dichloroethane-d4	111	0	70-130		%Rec	1	12/22/2022 12:32:47 A	R93479
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	12/22/2022 12:32:47 A	R93479
Surr: Dibromofluoromethane	96.8	0	70-130		%Rec	1	12/22/2022 12:32:47 A	R93479
Surr: Toluene-d8	107	0	70-130		%Rec	1	12/22/2022 12:32:47 A	R93479

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212913**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: KA-3
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/14/2022 11:30:00 AM
Lab ID: 2212913-006B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0027	0.0095		µg/L	1	12/22/2022 4:56:06 PM	72230

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212913**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: KA-3
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/14/2022 11:30:00 AM
Lab ID: 2212913-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.57	0.016	0.064	B	mg/L	1	12/22/2022 8:34:08 PM	72199
Motor Oil Range Organics (MRO)	0.078	0.052	0.080	J	mg/L	1	12/22/2022 8:34:08 PM	72199
Surr: DNOP	111	0	15.9-177		%Rec	1	12/22/2022 8:34:08 PM	72199
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	12/21/2022 5:09:05 PM	72138
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	12/21/2022 5:09:05 PM	72138
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	12/21/2022 5:09:05 PM	72138
Di-n-octyl phthalate	ND	12	20		µg/L	1	12/21/2022 5:09:05 PM	72138
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	12/21/2022 5:09:05 PM	72138
Diethyl phthalate	ND	6.0	10		µg/L	1	12/21/2022 5:09:05 PM	72138
Dimethyl phthalate	ND	6.0	10		µg/L	1	12/21/2022 5:09:05 PM	72138
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	12/21/2022 5:09:05 PM	72138
2,4-Dinitrophenol	ND	16	20		µg/L	1	12/21/2022 5:09:05 PM	72138
2-Methylphenol	ND	5.0	10		µg/L	1	12/21/2022 5:09:05 PM	72138
3+4-Methylphenol	ND	5.1	10		µg/L	1	12/21/2022 5:09:05 PM	72138
Phenol	ND	18	20		µg/L	1	12/21/2022 5:09:05 PM	72138
Pyridine	ND	14	40		µg/L	1	12/21/2022 5:09:05 PM	72138
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	12/21/2022 5:09:05 PM	72138
Surr: 2-Fluorophenol	35.9	0	15-84.5		%Rec	1	12/21/2022 5:09:05 PM	72138
Surr: Phenol-d5	28.4	0	15-67		%Rec	1	12/21/2022 5:09:05 PM	72138
Surr: 2,4,6-Tribromophenol	66.8	0	15-108		%Rec	1	12/21/2022 5:09:05 PM	72138
Surr: Nitrobenzene-d5	49.2	0	16.8-112		%Rec	1	12/21/2022 5:09:05 PM	72138
Surr: 2-Fluorobiphenyl	43.5	0	15-101		%Rec	1	12/21/2022 5:09:05 PM	72138
Surr: 4-Terphenyl-d14	72.7	0	34.4-134		%Rec	1	12/21/2022 5:09:05 PM	72138
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	0.42	0.11	1.0	J	µg/L	1	12/21/2022 1:57:00 AM	72138
Naphthalene	ND	0.20	0.30		µg/L	1	12/21/2022 1:57:00 AM	72138
1-Methylnaphthalene	ND	0.15	0.30		µg/L	1	12/21/2022 1:57:00 AM	72138
2-Methylnaphthalene	ND	0.14	0.30		µg/L	1	12/21/2022 1:57:00 AM	72138
Acenaphthene	ND	0.14	0.30		µg/L	1	12/21/2022 1:57:00 AM	72138
Fluorene	ND	0.095	0.30		µg/L	1	12/21/2022 1:57:00 AM	72138
Phenanthrene	ND	0.16	0.30		µg/L	1	12/21/2022 1:57:00 AM	72138
Anthracene	ND	0.14	0.30		µg/L	1	12/21/2022 1:57:00 AM	72138
Fluoranthene	ND	0.14	0.30		µg/L	1	12/21/2022 1:57:00 AM	72138
Pyrene	ND	0.32	1.0		µg/L	1	12/21/2022 1:57:00 AM	72138
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	12/21/2022 1:57:00 AM	72138
Chrysene	ND	0.25	0.30		µg/L	1	12/21/2022 1:57:00 AM	72138
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	12/21/2022 1:57:00 AM	72138
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	12/21/2022 1:57:00 AM	72138

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212913**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: KA-3
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/14/2022 11:30:00 AM
Lab ID: 2212913-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	51.0	0	15-108		%Rec	1	12/21/2022 1:57:00 AM	72138
Surr: 2-Fluorobiphenyl	44.2	0	15-107		%Rec	1	12/21/2022 1:57:00 AM	72138
Surr: 4-Terphenyl-d14	79.6	0	15-166		%Rec	1	12/21/2022 1:57:00 AM	72138

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212913**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: KA-3
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/14/2022 11:30:00 AM
Lab ID: 2212913-006D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	0.18	0.0016	0.0030		mg/L	1	12/21/2022 7:12:34 PM	72141
Beryllium	ND	0.00060	0.0020		mg/L	1	12/21/2022 7:12:34 PM	72141
Cadmium	ND	0.0018	0.0020		mg/L	1	12/21/2022 7:12:34 PM	72141
Chromium	ND	0.0020	0.0060		mg/L	1	12/21/2022 7:12:34 PM	72141
Cobalt	ND	0.0035	0.0060		mg/L	1	12/21/2022 7:12:34 PM	72141
Nickel	0.023	0.0053	0.010		mg/L	1	12/21/2022 7:12:34 PM	72141
Silver	ND	0.0018	0.0050		mg/L	1	12/21/2022 7:12:34 PM	72141
Vanadium	0.023	0.0035	0.050	J	mg/L	1	12/21/2022 7:12:34 PM	72141
Zinc	0.0046	0.0039	0.010	J	mg/L	1	12/21/2022 7:12:34 PM	72141
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	12/21/2022 4:15:26 PM	72141
Arsenic	0.00062	0.00022	0.0010	J	mg/L	1	12/21/2022 4:15:26 PM	72141
Lead	0.00053	0.00019	0.00050		mg/L	1	12/21/2022 4:15:26 PM	72141
Selenium	0.0026	0.00089	0.0010		mg/L	1	12/28/2022 1:19:01 PM	72141
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/20/2022 2:49:53 PM	72202

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212913**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: KA-3
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/14/2022 11:30:00 AM
Lab ID: 2212913-006E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.16	0.0011	0.0020		mg/L	1	12/23/2022 2:14:52 PM	C93558
Beryllium	ND	0.00059	0.0020		mg/L	1	12/23/2022 2:14:52 PM	C93558
Cadmium	ND	0.00098	0.0020		mg/L	1	12/23/2022 2:14:52 PM	C93558
Chromium	ND	0.0020	0.0060		mg/L	1	12/23/2022 2:14:52 PM	C93558
Cobalt	ND	0.0024	0.0060		mg/L	1	12/23/2022 2:14:52 PM	C93558
Nickel	0.019	0.0033	0.010		mg/L	1	12/23/2022 2:14:52 PM	C93558
Silver	ND	0.0013	0.0050		mg/L	1	12/23/2022 2:14:52 PM	C93558
Vanadium	0.017	0.0017	0.050	J	mg/L	1	12/23/2022 2:14:52 PM	C93558
Zinc	0.0098	0.0032	0.010	J	mg/L	1	12/23/2022 2:14:52 PM	C93558
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	12/15/2022 5:55:06 PM	D93335
Arsenic	0.00064	0.00061	0.0050	J	mg/L	5	12/15/2022 5:55:06 PM	D93335
Lead	ND	0.00028	0.0025		mg/L	5	12/15/2022 5:55:06 PM	D93335
Selenium	ND	0.0017	0.0050		mg/L	5	12/15/2022 5:55:06 PM	D93335
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/20/2022 2:52:00 PM	72202

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212913**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB-12-14-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/14/2022 11:30:00 AM
Lab ID: 2212913-007A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	12/22/2022 1:01:17 AM	R93479
Toluene	ND	0.20	1.0		µg/L	1	12/22/2022 1:01:17 AM	R93479
Ethylbenzene	ND	0.21	1.0		µg/L	1	12/22/2022 1:01:17 AM	R93479
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	12/22/2022 1:01:17 AM	R93479
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	12/22/2022 1:01:17 AM	R93479
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	12/22/2022 1:01:17 AM	R93479
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	12/22/2022 1:01:17 AM	R93479
Acetone	ND	2.5	10		µg/L	1	12/22/2022 1:01:17 AM	R93479
Bromomethane	ND	0.85	3.0		µg/L	1	12/22/2022 1:01:17 AM	R93479
2-Butanone	ND	2.0	10		µg/L	1	12/22/2022 1:01:17 AM	R93479
Carbon disulfide	ND	0.59	10		µg/L	1	12/22/2022 1:01:17 AM	R93479
Chlorobenzene	ND	0.16	1.0		µg/L	1	12/22/2022 1:01:17 AM	R93479
Chloroform	ND	0.13	1.0		µg/L	1	12/22/2022 1:01:17 AM	R93479
Chloromethane	ND	0.41	3.0		µg/L	1	12/22/2022 1:01:17 AM	R93479
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	12/22/2022 1:01:17 AM	R93479
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	12/22/2022 1:01:17 AM	R93479
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	12/22/2022 1:01:17 AM	R93479
Isopropylbenzene	ND	0.18	1.0		µg/L	1	12/22/2022 1:01:17 AM	R93479
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	12/22/2022 1:01:17 AM	R93479
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/22/2022 1:01:17 AM	R93479
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/22/2022 1:01:17 AM	R93479
n-Propylbenzene	ND	0.18	1.0		µg/L	1	12/22/2022 1:01:17 AM	R93479
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	12/22/2022 1:01:17 AM	R93479
Styrene	ND	0.14	1.0		µg/L	1	12/22/2022 1:01:17 AM	R93479
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/22/2022 1:01:17 AM	R93479
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	12/22/2022 1:01:17 AM	R93479
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	12/22/2022 1:01:17 AM	R93479
Vinyl chloride	ND	0.32	1.0		µg/L	1	12/22/2022 1:01:17 AM	R93479
Xylenes, Total	ND	0.37	1.5		µg/L	1	12/22/2022 1:01:17 AM	R93479
Surr: 1,2-Dichloroethane-d4	106	0	70-130		%Rec	1	12/22/2022 1:01:17 AM	R93479
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	1	12/22/2022 1:01:17 AM	R93479
Surr: Dibromofluoromethane	98.9	0	70-130		%Rec	1	12/22/2022 1:01:17 AM	R93479
Surr: Toluene-d8	108	0	70-130		%Rec	1	12/22/2022 1:01:17 AM	R93479

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212913**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-12-14-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/14/2022
Lab ID: 2212913-008A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	68	0.45	2.5		mg/L	50	12/23/2022 4:26:56 AM	R93515
Surr: BFB	88.6	0	70-130		%Rec	50	12/23/2022 4:26:56 AM	R93515
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	30000	110	500		µg/L	500	12/22/2022 12:22:26 P	R93506
Toluene	280	10	50		µg/L	50	12/22/2022 1:29:48 AM	R93479
Ethylbenzene	1400	11	50		µg/L	50	12/22/2022 1:29:48 AM	R93479
Methyl tert-butyl ether (MTBE)	1100	20	50		µg/L	50	12/22/2022 1:29:48 AM	R93479
1,2,4-Trimethylbenzene	47	6.1	50	J	µg/L	50	12/22/2022 1:29:48 AM	R93479
1,3,5-Trimethylbenzene	23	9.1	50	J	µg/L	50	12/22/2022 1:29:48 AM	R93479
1,2-Dichloroethane (EDC)	ND	13	50		µg/L	50	12/22/2022 1:29:48 AM	R93479
Acetone	ND	130	500		µg/L	50	12/22/2022 1:29:48 AM	R93479
Bromomethane	ND	43	150		µg/L	50	12/22/2022 1:29:48 AM	R93479
2-Butanone	ND	100	500		µg/L	50	12/22/2022 1:29:48 AM	R93479
Carbon disulfide	ND	30	500		µg/L	50	12/22/2022 1:29:48 AM	R93479
Chlorobenzene	ND	7.8	50		µg/L	50	12/22/2022 1:29:48 AM	R93479
Chloroform	ND	6.7	50		µg/L	50	12/22/2022 1:29:48 AM	R93479
Chloromethane	ND	21	150		µg/L	50	12/22/2022 1:29:48 AM	R93479
cis-1,2-DCE	ND	19	50		µg/L	50	12/22/2022 1:29:48 AM	R93479
1,1-Dichloroethane	ND	14	50		µg/L	50	12/22/2022 1:29:48 AM	R93479
1,1-Dichloroethene	ND	10	50		µg/L	50	12/22/2022 1:29:48 AM	R93479
Isopropylbenzene	34	9.1	50	J	µg/L	50	12/22/2022 1:29:48 AM	R93479
4-Isopropyltoluene	ND	10	50		µg/L	50	12/22/2022 1:29:48 AM	R93479
Methylene Chloride	ND	25	150		µg/L	50	12/22/2022 1:29:48 AM	R93479
n-Butylbenzene	ND	13	150		µg/L	50	12/22/2022 1:29:48 AM	R93479
n-Propylbenzene	110	9.1	50		µg/L	50	12/22/2022 1:29:48 AM	R93479
sec-Butylbenzene	ND	7.2	50		µg/L	50	12/22/2022 1:29:48 AM	R93479
Styrene	ND	6.8	50		µg/L	50	12/22/2022 1:29:48 AM	R93479
Tetrachloroethene (PCE)	ND	18	50		µg/L	50	12/22/2022 1:29:48 AM	R93479
1,1,1-Trichloroethane	ND	15	50		µg/L	50	12/22/2022 1:29:48 AM	R93479
Trichloroethene (TCE)	ND	10	50		µg/L	50	12/22/2022 1:29:48 AM	R93479
Vinyl chloride	ND	16	50		µg/L	50	12/22/2022 1:29:48 AM	R93479
Xylenes, Total	360	19	75		µg/L	50	12/22/2022 1:29:48 AM	R93479
Surr: 1,2-Dichloroethane-d4	107	0	70-130		%Rec	50	12/22/2022 1:29:48 AM	R93479
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	50	12/22/2022 1:29:48 AM	R93479
Surr: Dibromofluoromethane	88.8	0	70-130		%Rec	50	12/22/2022 1:29:48 AM	R93479
Surr: Toluene-d8	106	0	70-130		%Rec	50	12/22/2022 1:29:48 AM	R93479

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212913**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-12-14-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/14/2022
Lab ID: 2212913-008B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **mb**	
1,2-Dibromoethane	ND	0.0026	0.0093		µg/L	1	12/22/2022 5:38:30 PM	72230

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212913**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-12-14-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/14/2022
Lab ID: 2212913-008C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	7.7	0.080	0.32	B	mg/L	5	12/27/2022 7:39:13 PM	72199
Motor Oil Range Organics (MRO)	ND	0.26	0.40	D	mg/L	5	12/27/2022 7:39:13 PM	72199
Surr: DNOP	124	0	15.9-177		%Rec	5	12/27/2022 7:39:13 PM	72199
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	18	20		µg/L	1	12/21/2022 5:50:16 PM	72138
Bis(2-ethylhexyl)phthalate	ND	8.4	10		µg/L	1	12/21/2022 5:50:16 PM	72138
Di-n-butyl phthalate	ND	7.7	10		µg/L	1	12/21/2022 5:50:16 PM	72138
Di-n-octyl phthalate	ND	12	20		µg/L	1	12/21/2022 5:50:16 PM	72138
1,4-Dichlorobenzene	ND	2.4	5.0		µg/L	1	12/21/2022 5:50:16 PM	72138
Diethyl phthalate	ND	6.0	10		µg/L	1	12/21/2022 5:50:16 PM	72138
Dimethyl phthalate	ND	6.0	10		µg/L	1	12/21/2022 5:50:16 PM	72138
2,4-Dimethylphenol	ND	5.8	10		µg/L	1	12/21/2022 5:50:16 PM	72138
2,4-Dinitrophenol	ND	16	20		µg/L	1	12/21/2022 5:50:16 PM	72138
1-Methylnaphthalene	49	4.3	5.0		µg/L	1	12/21/2022 5:50:16 PM	72138
2-Methylnaphthalene	55	4.2	5.0		µg/L	1	12/21/2022 5:50:16 PM	72138
2-Methylphenol	ND	5.0	10		µg/L	1	12/21/2022 5:50:16 PM	72138
3+4-Methylphenol	ND	5.1	10		µg/L	1	12/21/2022 5:50:16 PM	72138
Naphthalene	97	3.2	5.0		µg/L	1	12/21/2022 5:50:16 PM	72138
Phenol	50	18	20		µg/L	1	12/21/2022 5:50:16 PM	72138
Pyridine	ND	14	40		µg/L	1	12/21/2022 5:50:16 PM	72138
2,4,6-Trichlorophenol	ND	5.9	10		µg/L	1	12/21/2022 5:50:16 PM	72138
Surr: 2-Fluorophenol	33.4	0	15-84.5		%Rec	1	12/21/2022 5:50:16 PM	72138
Surr: Phenol-d5	30.2	0	15-67		%Rec	1	12/21/2022 5:50:16 PM	72138
Surr: 2,4,6-Tribromophenol	63.9	0	15-108		%Rec	1	12/21/2022 5:50:16 PM	72138
Surr: Nitrobenzene-d5	50.4	0	16.8-112		%Rec	1	12/21/2022 5:50:16 PM	72138
Surr: 2-Fluorobiphenyl	40.4	0	15-101		%Rec	1	12/21/2022 5:50:16 PM	72138
Surr: 4-Terphenyl-d14	72.7	0	34.4-134		%Rec	1	12/21/2022 5:50:16 PM	72138
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	0.94	0.11	1.0	J	µg/L	1	12/21/2022 2:40:00 AM	72138
Acenaphthene	2.0	0.14	0.30		µg/L	1	12/21/2022 2:40:00 AM	72138
Fluorene	2.9	0.095	0.30		µg/L	1	12/21/2022 2:40:00 AM	72138
Phenanthrene	2.9	0.16	0.30		µg/L	1	12/21/2022 2:40:00 AM	72138
Anthracene	0.32	0.14	0.30		µg/L	1	12/21/2022 2:40:00 AM	72138
Fluoranthene	0.18	0.14	0.30	J	µg/L	1	12/21/2022 2:40:00 AM	72138
Pyrene	ND	0.32	1.0		µg/L	1	12/21/2022 2:40:00 AM	72138
Benz(a)anthracene	ND	0.15	0.30		µg/L	1	12/21/2022 2:40:00 AM	72138
Chrysene	ND	0.25	0.30		µg/L	1	12/21/2022 2:40:00 AM	72138
Benzo(b)fluoranthene	ND	0.14	0.40		µg/L	1	12/21/2022 2:40:00 AM	72138
Indeno(1,2,3-cd)pyrene	ND	0.23	0.30		µg/L	1	12/21/2022 2:40:00 AM	72138

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212913**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-12-14-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/14/2022
Lab ID: 2212913-008C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	48.7	0	15-108		%Rec	1	12/21/2022 2:40:00 AM	72138
Surr: 2-Fluorobiphenyl	34.9	0	15-107		%Rec	1	12/21/2022 2:40:00 AM	72138
Surr: 4-Terphenyl-d14	66.9	0	15-166		%Rec	1	12/21/2022 2:40:00 AM	72138

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212913**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-12-14-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/14/2022
Lab ID: 2212913-008D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **VP**	
Barium	5.3	0.016	0.030	*	mg/L	10	12/30/2022 10:32:34 A	72141
Beryllium	ND	0.00060	0.0020		mg/L	1	12/21/2022 7:24:44 PM	72141
Cadmium	ND	0.0018	0.0020		mg/L	1	12/21/2022 7:24:44 PM	72141
Chromium	ND	0.0020	0.0060		mg/L	1	12/21/2022 7:24:44 PM	72141
Cobalt	ND	0.0035	0.0060		mg/L	1	12/21/2022 7:24:44 PM	72141
Nickel	0.048	0.0053	0.010		mg/L	1	12/21/2022 7:24:44 PM	72141
Silver	0.0020	0.0018	0.0050	J	mg/L	1	12/21/2022 7:24:44 PM	72141
Vanadium	0.0050	0.0035	0.050	J	mg/L	1	12/21/2022 7:24:44 PM	72141
Zinc	ND	0.0039	0.010		mg/L	1	12/21/2022 7:24:44 PM	72141
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	12/21/2022 4:17:53 PM	72141
Arsenic	0.0028	0.00022	0.0010		mg/L	1	12/21/2022 4:17:53 PM	72141
Lead	ND	0.00019	0.00050		mg/L	1	12/21/2022 4:17:53 PM	72141
Selenium	ND	0.00089	0.0010		mg/L	1	12/28/2022 1:21:27 PM	72141
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/20/2022 2:54:09 PM	72202

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order: **2212913**
Date Reported: **1/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-12-14-22
Project: 2022 GW Sampling 4th Quarter
Collection Date: 12/14/2022
Lab ID: 2212913-008E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	4.8	0.011	0.020	*	mg/L	10	12/23/2022 2:21:06 PM	C93558
Beryllium	ND	0.00059	0.0020		mg/L	1	12/23/2022 2:18:03 PM	C93558
Cadmium	ND	0.00098	0.0020		mg/L	1	12/23/2022 2:18:03 PM	C93558
Chromium	ND	0.0020	0.0060		mg/L	1	12/23/2022 2:18:03 PM	C93558
Cobalt	ND	0.0024	0.0060		mg/L	1	12/23/2022 2:18:03 PM	C93558
Nickel	0.045	0.0033	0.010		mg/L	1	12/23/2022 2:18:03 PM	C93558
Silver	ND	0.0013	0.0050		mg/L	1	12/23/2022 2:18:03 PM	C93558
Vanadium	0.0033	0.0017	0.050	J	mg/L	1	12/23/2022 2:18:03 PM	C93558
Zinc	ND	0.0032	0.010		mg/L	1	12/23/2022 2:18:03 PM	C93558
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	12/15/2022 5:58:59 PM	D93335
Arsenic	0.0032	0.00061	0.0050	J	mg/L	5	12/15/2022 5:58:59 PM	D93335
Lead	ND	0.00028	0.0025		mg/L	5	12/15/2022 5:58:59 PM	D93335
Selenium	ND	0.0017	0.0050		mg/L	5	12/15/2022 5:58:59 PM	D93335
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.000091	0.00020		mg/L	1	12/20/2022 3:00:34 PM	72202

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

ANALYTICAL REPORT

December 20, 2022

Hall Environmental Analysis Laboratory

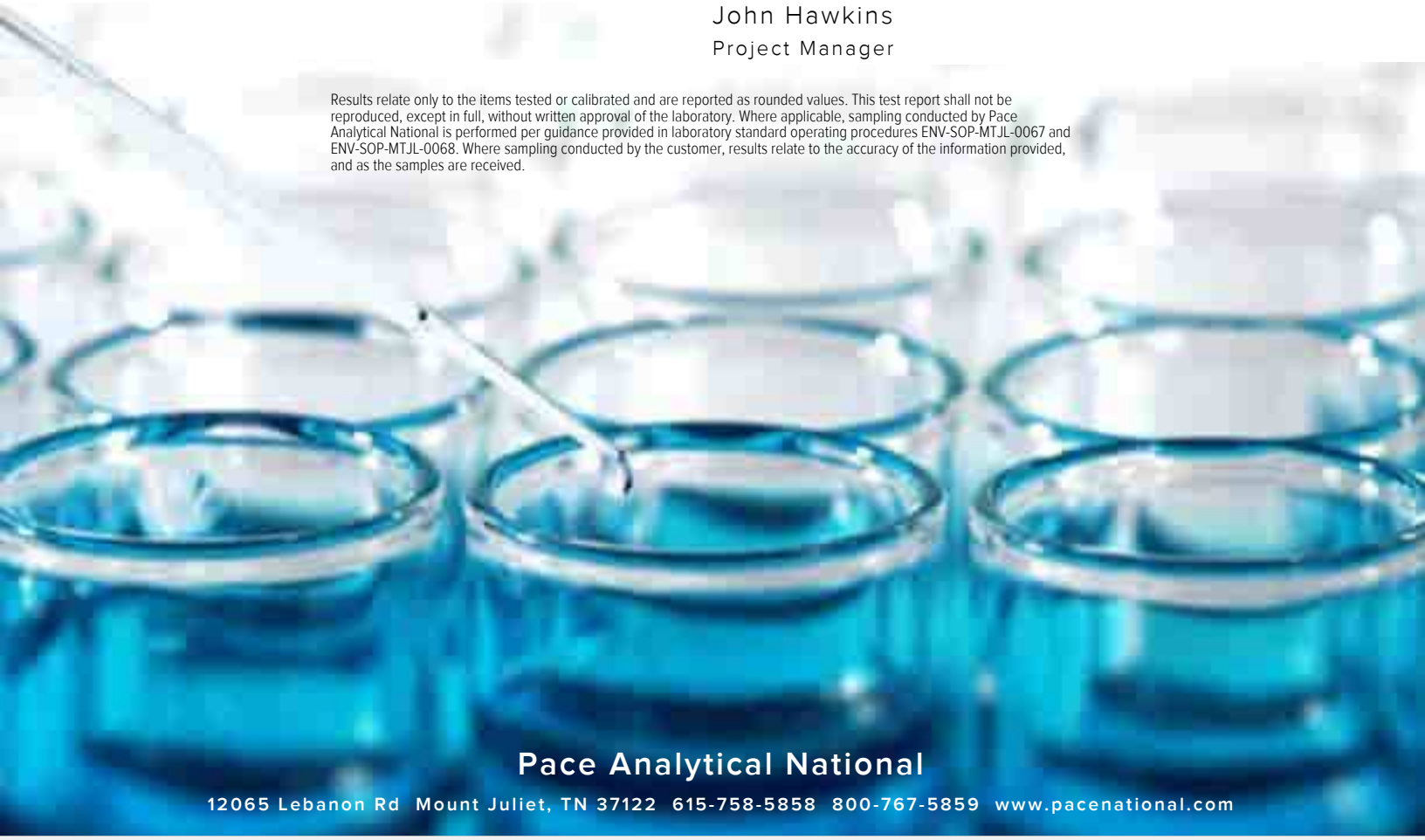
Sample Delivery Group:	L1568364
Samples Received:	12/16/2022
Project Number:	
Description:	

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By:

John Hawkins
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 4

Sr: Sample Results 5

2212913-001F EB-12-14-22 L1568364-01 5

2212913-002F OW-58 L1568364-02 6

2212913-003F OW-70 L1568364-03 7

2212913-004F NAPI-2 L1568364-04 8

2212913-005F NAPI-3 L1568364-05 9

2212913-006F KA-3 L1568364-06 10

2212913-008F DUP-12-14-22 L1568364-07 11

Qc: Quality Control Summary 12

Wet Chemistry by Method 4500CN E-2016 12

Gl: Glossary of Terms 13

Al: Accreditations & Locations 14

Sc: Sample Chain of Custody 15

SAMPLE SUMMARY

2212913-001F EB-12-14-22 L1568364-01 WW

Collected by | Collected date/time 12/14/22 08:30 | Received date/time 12/16/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1976252	1	12/18/22 23:02	12/20/22 13:42	LDT	Mt. Juliet, TN

2212913-002F OW-58 L1568364-02 WW

Collected by | Collected date/time 12/14/22 09:30 | Received date/time 12/16/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1976252	1	12/18/22 23:02	12/20/22 13:43	LDT	Mt. Juliet, TN

2212913-003F OW-70 L1568364-03 WW

Collected by | Collected date/time 12/14/22 10:25 | Received date/time 12/16/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1976252	1	12/18/22 23:02	12/20/22 13:48	LDT	Mt. Juliet, TN

2212913-004F NAPI-2 L1568364-04 WW

Collected by | Collected date/time 12/14/22 10:45 | Received date/time 12/16/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1976252	1	12/18/22 23:02	12/20/22 13:49	LDT	Mt. Juliet, TN

2212913-005F NAPI-3 L1568364-05 WW

Collected by | Collected date/time 12/14/22 11:15 | Received date/time 12/16/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1976252	1	12/18/22 23:02	12/20/22 13:51	LDT	Mt. Juliet, TN

2212913-006F KA-3 L1568364-06 WW

Collected by | Collected date/time 12/14/22 11:30 | Received date/time 12/16/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1976252	1	12/18/22 23:02	12/20/22 13:52	LDT	Mt. Juliet, TN

2212913-008F DUP-12-14-22 L1568364-07 WW

Collected by | Collected date/time 12/14/22 00:00 | Received date/time 12/16/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1976252	1	12/18/22 23:02	12/20/22 13:53	LDT	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	12/20/2022 13:42	WG1976252

Received by OCD: 4/21/2023 9:21:57 AM

2212913-0021 OW-38
Collected date/time: 12/14/22 09:30
L1568364

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND	J6	0.00500	1	12/20/2022 13:43	WG1976252

Released to Imaging: 4/21/2023 9:40:26 AM

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	12/20/2022 13:48	WG1976252

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.0130		0.00500	1	12/20/2022 13:49	WG1976252

Received by OCD: 4/21/2023 9:21:57 AM

2212913-005F NAPT-3
Collected date/time: 12/14/22 11:15
L1568364

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.0101		0.00500	1	12/20/2022 13:51	WG1976252

Released to Imaging: 4/21/2023 9:40:26 AM

Received by OCD: 4/21/2023 9:21:57 AM

2212513-0061 KA-3
Collected date/time: 12/14/22 11:30
L1568364

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.00704		0.00500	1	12/20/2022 13:52	WG1976252

Released to Imaging: 4/21/2023 9:40:26 AM

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	12/20/2022 13:53	WG1976252

Method Blank (MB)

(MB) R3873891-1 12/20/22 13:35

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1568351-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1568351-01 12/20/22 13:40 • (DUP) R3873891-3 12/20/22 13:41

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

L1568364-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1568364-04 12/20/22 13:49 • (DUP) R3873891-6 12/20/22 13:50

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	0.0130	0.0117	1	10.5		20

Laboratory Control Sample (LCS)

(LCS) R3873891-2 12/20/22 13:36

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.0954	95.4	87.1-120	

L1568364-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1568364-02 12/20/22 13:43 • (MS) R3873891-4 12/20/22 13:44 • (MSD) R3873891-5 12/20/22 13:47

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0941	0.0949	89.9	90.7	1	90.0-110	J6		0.847	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Received by OCD: 4/21/2023 9:21:57 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

M174

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

SUB CONTRATOR: Pace TN	COMPANY: PACE TN	PHONE: (800) 767-5859	FAX: (615) 758-5859
ADDRESS: 12065 Lebanon Rd		ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: Mt. Juliet, TN 37122			L1568364

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	2212913-001F	EB-12-14-22	500AMBHDP F.NAOH	Groundwater	12/14/2022 8:30:00 AM	1	Total Cyanide J and MDL -01
2	2212913-002F	OW-58	500AMBHDP F.NAOH	Groundwater	12/14/2022 9:30:00 AM	1	Total Cyanide J and MDL -02
3	2212913-003F	OW-70	500AMBHDP F.NAOH	Groundwater	12/14/2022 10:25:00 AM	1	Total Cyanide J and MDL -03
4	2212913-004F	NAPI-2	500AMBHDP F.NAOH	Groundwater	12/14/2022 10:45:00 AM	1	Total Cyanide J and MDL -04
5	2212913-005F	NAPI-3	500AMBHDP F.NAOH	Groundwater	12/14/2022 11:15:00 AM	1	Total Cyanide J and MDL -05
6	2212913-006F	KA-3	500AMBHDP F.NAOH	Groundwater	12/14/2022 11:30:00 AM	1	Total Cyanide J and MDL -06
7	2212913-008F	DUP-12-14-22	500AMBHDP F.NAOH	Groundwater	12/14/2022	1	Total Cyanide J and MDL -07

Sample Receipt Checklist

COC Seal Present/Intact: (Y) N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
RAD Screen <0.5 mR/hr: (Y) N

If Applicable
VOA Zero Headspace: Y N
Pres.Correct/Check: Y N

CMH6
4.6+0 = 4.6

7707 9746 0714

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

OK

Relinquished By: SL	Date: 12/15/2022	Time: 8:43 AM	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date: 12-16-22	Time: 9:00

TAT: Standard ☑ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY
Temp of samples _____ °C Attempt to Cool ? _____
Comments: _____

Released to Imaging: 4/21/2023 9:40:26 AM

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212913**

09-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-72141** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**

Client ID: **PBW** Batch ID: **72141** RunNo: **93406**

Prep Date: **12/16/2022** Analysis Date: **12/19/2022** SeqNo: **3368551** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LCSLL-72141** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**

Client ID: **BatchQC** Batch ID: **72141** RunNo: **93406**

Prep Date: **12/16/2022** Analysis Date: **12/19/2022** SeqNo: **3368552** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0019	0.0030	0.002000	0	92.7	50	150			J
Beryllium	0.0020	0.0020	0.002000	0	99.8	50	150			J
Cadmium	0.0020	0.0020	0.002000	0	98.1	50	150			J
Chromium	0.0055	0.0060	0.006000	0	92.2	50	150			J
Cobalt	0.0066	0.0060	0.006000	0	110	50	150			
Nickel	0.0045	0.010	0.005000	0	90.8	50	150			J
Silver	0.0055	0.0050	0.005000	0	110	50	150			
Vanadium	0.010	0.050	0.01000	0	102	50	150			J
Zinc	0.0070	0.010	0.01000	0	69.7	50	150			J

Sample ID: **LCS-72141** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**

Client ID: **LCSW** Batch ID: **72141** RunNo: **93406**

Prep Date: **12/16/2022** Analysis Date: **12/19/2022** SeqNo: **3368553** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.53	0.0030	0.5000	0	105	85	115			
Beryllium	0.52	0.0020	0.5000	0	104	85	115			
Cadmium	0.51	0.0020	0.5000	0	101	85	115			
Chromium	0.51	0.0060	0.5000	0	102	85	115			
Cobalt	0.51	0.0060	0.5000	0	101	85	115			
Nickel	0.50	0.010	0.5000	0	99.9	85	115			
Silver	0.11	0.0050	0.1000	0	106	85	115			
Vanadium	0.52	0.050	0.5000	0	103	85	115			
Zinc	0.49	0.010	0.5000	0	98.2	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212913**

09-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-C**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **C93558**	RunNo: **93558**
Prep Date:	Analysis Date: **12/23/2022**	SeqNo: **3375409** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LCSLL-C**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **C93558**	RunNo: **93558**
Prep Date:	Analysis Date: **12/23/2022**	SeqNo: **3375410** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0018	0.0020	0.002000	0	89.6	50	150			J
Beryllium	0.0020	0.0020	0.002000	0	98.9	50	150			J
Cadmium	0.0020	0.0020	0.002000	0	98.6	50	150			J
Cobalt	0.0075	0.0060	0.006000	0	125	50	150			
Nickel	0.0068	0.010	0.005000	0	137	50	150			J
Silver	0.0049	0.0050	0.005000	0	98.7	50	150			J
Vanadium	0.0092	0.050	0.01000	0	91.7	50	150			J
Zinc	0.010	0.010	0.01000	0	104	50	150			

Sample ID: **LCS-C**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **C93558**	RunNo: **93558**
Prep Date:	Analysis Date: **12/23/2022**	SeqNo: **3375411** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.47	0.0020	0.5000	0	94.3	85	115			
Beryllium	0.50	0.0020	0.5000	0	100	85	115			
Cadmium	0.47	0.0020	0.5000	0	93.2	85	115			
Chromium	0.46	0.0060	0.5000	0	92.1	85	115			
Cobalt	0.45	0.0060	0.5000	0	89.8	85	115			
Nickel	0.47	0.010	0.5000	0	93.1	85	115			
Silver	0.10	0.0050	0.1000	0	102	85	115			
Vanadium	0.49	0.050	0.5000	0	98.2	85	115			
Zinc	0.45	0.010	0.5000	0	91.0	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2212913**
09-Jan-23

Client: Marathon
Project: 2022 GW Sampling 4th Quarter

Sample ID: **LCSLL-C**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **C93558**	RunNo: **93558**
Prep Date:	Analysis Date: **12/23/2022**	SeqNo: **3375416** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	0.0030	0.0060	0.006000	0	50.7	50	150			J

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212913**

09-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-72141**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **72141**	RunNo: **93483**
Prep Date: **12/16/2022**	Analysis Date: **12/21/2022**	SeqNo: **3371597** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **MSLCSLL-72141**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **72141**	RunNo: **93483**
Prep Date: **12/16/2022**	Analysis Date: **12/21/2022**	SeqNo: **3371598** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00082	0.0010	0.001000	0	81.6	50	150			J
Arsenic	0.00097	0.0010	0.001000	0	96.6	50	150			J
Lead	0.00048	0.00050	0.0005000	0	97.0	50	150			J

Sample ID: **MSLCS-72141**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **72141**	RunNo: **93483**
Prep Date: **12/16/2022**	Analysis Date: **12/21/2022**	SeqNo: **3371599** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	100	85	115			
Arsenic	0.023	0.0010	0.02500	0	93.0	85	115			
Lead	0.012	0.00050	0.01250	0	99.6	85	115			
Selenium	0.021	0.0010	0.02500	0	85.7	85	115			

Sample ID: **MSLCSLL-72141**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **72141**	RunNo: **93483**
Prep Date: **12/16/2022**	Analysis Date: **12/21/2022**	SeqNo: **3371603** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.0010	0.0010	0.001000	0	100	50	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2212913**
09-Jan-23

Client: Marathon
Project: 2022 GW Sampling 4th Quarter

Sample ID: **2212913-001EMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **EB-12-14-22**	Batch ID: **D93335**	RunNo: **93335**
Prep Date:	Analysis Date: **12/15/2022**	SeqNo: **3365040** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.022	0.0010	0.02500	0	89.4	70	130			
Arsenic	0.025	0.0010	0.02500	0	101	70	130			
Lead	0.012	0.00050	0.01250	0	96.9	70	130			
Selenium	0.027	0.0010	0.02500	0	109	70	130			

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **D93335**	RunNo: **93335**
Prep Date:	Analysis Date: **12/15/2022**	SeqNo: **3367248** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00050	0.0010								J
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **D93335**	RunNo: **93335**
Prep Date:	Analysis Date: **12/15/2022**	SeqNo: **3367249** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.0011	0.0010	0.001000	0	105	50	150			
Lead	0.00058	0.00050	0.0005000	0	117	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **D93335**	RunNo: **93335**
Prep Date:	Analysis Date: **12/15/2022**	SeqNo: **3367250** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.023	0.0010	0.02500	0	93.0	85	115			
Arsenic	0.024	0.0010	0.02500	0	97.9	85	115			
Lead	0.013	0.00050	0.01250	0	101	85	115			
Selenium	0.026	0.0010	0.02500	0	104	85	115			

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **D93335**	RunNo: **93335**
Prep Date:	Analysis Date: **12/15/2022**	SeqNo: **3367251** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0012	0.0010	0.001000	0	116	50	150			
Selenium	0.0011	0.0010	0.001000	0	108	50	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212913**

09-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-72202**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **PBW**	Batch ID: **72202**	RunNo: **93426**							
Prep Date: **12/20/2022**	Analysis Date: **12/20/2022**	SeqNo: **3369564**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-72202**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **BatchQC**	Batch ID: **72202**	RunNo: **93426**							
Prep Date: **12/20/2022**	Analysis Date: **12/20/2022**	SeqNo: **3369565**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00021	0.00020	0.0001500	0	138	50	150			

Sample ID: **LCS-72202**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **LCSW**	Batch ID: **72202**	RunNo: **93426**							
Prep Date: **12/20/2022**	Analysis Date: **12/20/2022**	SeqNo: **3369566**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0055	0.00020	0.005000	0	111	85	115			

Sample ID: **2212913-008DMS**	SampType: **MS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **DUP-12-14-22**	Batch ID: **72202**	RunNo: **93426**							
Prep Date: **12/20/2022**	Analysis Date: **12/20/2022**	SeqNo: **3369616**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0040	0.00020	0.005000	0	79.4	75	125			

Sample ID: **2212913-008DMSD**	SampType: **MSD**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **DUP-12-14-22**	Batch ID: **72202**	RunNo: **93426**							
Prep Date: **12/20/2022**	Analysis Date: **12/20/2022**	SeqNo: **3369617**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0040	0.00020	0.005000	0	79.4	75	125	0.0893	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2212913**
09-Jan-23

Client: Marathon
Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-72230**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **72230**	RunNo: **93603**							
Prep Date: **12/21/2022**	Analysis Date: **12/22/2022**	SeqNo: **3377572**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-72230**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **LCSW**	Batch ID: **72230**	RunNo: **93603**							
Prep Date: **12/21/2022**	Analysis Date: **12/22/2022**	SeqNo: **3377574**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.12	0.010	0.1000	0	125	70	130			

Sample ID: **MB-72230**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **PBW**	Batch ID: **72230**	RunNo: **93603**							
Prep Date: **12/21/2022**	Analysis Date: **12/22/2022**	SeqNo: **3377660**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2212913**
09-Jan-23

Client: Marathon
Project: 2022 GW Sampling 4th Quarter

Sample ID: **MB-72199**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **PBW**	Batch ID: **72199**	RunNo: **93546**							
Prep Date: **12/20/2022**	Analysis Date: **12/22/2022**	SeqNo: **3375094**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.097	0.064								
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.038		0.03750		102	15.9	177			

Sample ID: **LCS-72199**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSW**	Batch ID: **72199**	RunNo: **93546**							
Prep Date: **12/20/2022**	Analysis Date: **12/22/2022**	SeqNo: **3375095**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.19	0.064	0.1875	0	102	31.2	125			B
Surr: DNOP	0.016		0.01875		86.1	15.9	177			

Sample ID: **LCSD-72199**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSS02**	Batch ID: **72199**	RunNo: **93546**							
Prep Date: **12/20/2022**	Analysis Date: **12/22/2022**	SeqNo: **3375096**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.21	0.064	0.1875	0	111	31.2	125	8.40	20	B
Surr: DNOP	0.018		0.01875		96.8	15.9	177	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2212913**
09-Jan-23

Client: Marathon
Project: 2022 GW Sampling 4th Quarter

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **LCSW**	Batch ID: **R93515**	RunNo: **93515**							
Prep Date:	Analysis Date: **12/22/2022**	SeqNo: **3373424**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.51	0.050	0.5000	0	102	80	120			
Surr: BFB	37		20.00		186	70	130			S

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **PBW**	Batch ID: **R93515**	RunNo: **93515**							
Prep Date:	Analysis Date: **12/22/2022**	SeqNo: **3373434**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	18		20.00		88.8	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2212913**
09-Jan-23

Client: Marathon
Project: 2022 GW Sampling 4th Quarter

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R93479**	RunNo: **93479**
Prep Date:	Analysis Date: **12/21/2022**	SeqNo: **3371419** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	112	70	130			
Toluene	23	1.0	20.00	0	114	70	130			
Chlorobenzene	21	1.0	20.00	0	105	70	130			
1,1-Dichloroethene	22	1.0	20.00	0	112	70	130			
Trichloroethene (TCE)	23	1.0	20.00	0	113	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		106	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		97.8	70	130			
Surr: Dibromofluoromethane	11		10.00		105	70	130			
Surr: Toluene-d8	10		10.00		104	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R93479**	RunNo: **93479**
Prep Date:	Analysis Date: **12/21/2022**	SeqNo: **3371446** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212913**

09-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**						
Client ID: **PBW**	Batch ID: **R93479**	RunNo: **93479**						
Prep Date:	Analysis Date: **12/21/2022**	SeqNo: **3371446**	Units: **µg/L**					

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		105	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	11		10.00		106	70	130			
Surr: Toluene-d8	11		10.00		106	70	130			

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**						
Client ID: **LCSW**	Batch ID: **R93506**	RunNo: **93506**						
Prep Date:	Analysis Date: **12/22/2022**	SeqNo: **3373325**	Units: **µg/L**					

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	104	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		103	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	10		10.00		103	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**						
Client ID: **PBW**	Batch ID: **R93506**	RunNo: **93506**						
Prep Date:	Analysis Date: **12/22/2022**	SeqNo: **3373348**	Units: **µg/L**					

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Surr: 1,2-Dichloroethane-d4	9.3		10.00		93.4	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	10		10.00		104	70	130			
Surr: Toluene-d8	11		10.00		106	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2212913**
09-Jan-23

Client: Marathon
Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb-72138**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **72138**	RunNo: **93478**
Prep Date: **12/16/2022**	Analysis Date: **12/21/2022**	SeqNo: **3371393** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Anthracene	ND	10								
Benz(a)anthracene	ND	5.0								
Benzo(b)fluoranthene	ND	10								
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	10								
2,4-Dinitrophenol	ND	20								
Fluoranthene	ND	10								
Fluorene	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
1-Methylnaphthalene	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
Naphthalene	ND	5.0								
Phenanthrene	ND	10								
Phenol	ND	20								
Pyrene	ND	10								
Pyridine	ND	40								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	78		200.0		38.8	15	84.5			
Surr: Phenol-d5	65		200.0		32.3	15	67			
Surr: 2,4,6-Tribromophenol	110		200.0		53.5	15	108			
Surr: Nitrobenzene-d5	52		100.0		51.9	16.8	112			
Surr: 2-Fluorobiphenyl	42		100.0		42.4	15	101			
Surr: 4-Terphenyl-d14	89		100.0		88.9	34.4	134			

Sample ID: **lcs-72138**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **72138**	RunNo: **93478**
Prep Date: **12/16/2022**	Analysis Date: **12/21/2022**	SeqNo: **3371394** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212913**

09-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **lcs-72138**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **72138**	RunNo: **93478**
Prep Date: **12/16/2022**	Analysis Date: **12/21/2022**	SeqNo: **3371394** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	56	10	100.0	0	55.7	21.3	104			
1,4-Dichlorobenzene	37	5.0	100.0	0	37.2	15	89.8			
Phenol	79	20	200.0	0	39.3	17	61.1			
Pyrene	85	10	100.0	0	85.1	61	123			
Surr: 2-Fluorophenol	98		200.0		49.2	15	84.5			
Surr: Phenol-d5	76		200.0		37.8	15	67			
Surr: 2,4,6-Tribromophenol	150		200.0		76.7	15	108			
Surr: Nitrobenzene-d5	63		100.0		63.2	16.8	112			
Surr: 2-Fluorobiphenyl	57		100.0		56.7	15	101			
Surr: 4-Terphenyl-d14	100		100.0		100	34.4	134			

Sample ID: **lcsd-72138**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **72138**	RunNo: **93478**
Prep Date: **12/16/2022**	Analysis Date: **12/21/2022**	SeqNo: **3371395** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	71	10	100.0	0	71.4	21.3	104	24.7	45.3	
1,4-Dichlorobenzene	47	5.0	100.0	0	46.7	15	89.8	22.6	39.6	
Phenol	93	20	200.0	0	46.6	17	61.1	16.9	42.5	
Pyrene	92	10	100.0	0	92.0	61	123	7.71	11.8	
Surr: 2-Fluorophenol	110		200.0		53.8	15	84.5	0	0	
Surr: Phenol-d5	86		200.0		42.9	15	67	0	0	
Surr: 2,4,6-Tribromophenol	180		200.0		87.9	15	108	0	0	
Surr: Nitrobenzene-d5	75		100.0		74.7	16.8	112	0	0	
Surr: 2-Fluorobiphenyl	67		100.0		67.4	15	101	0	0	
Surr: 4-Terphenyl-d14	110		100.0		108	34.4	134	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212913**

09-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **mb-72138**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**
Client ID: **PBW**	Batch ID: **72138**	RunNo: **93434**
Prep Date: **12/16/2022**	Analysis Date: **12/20/2022**	SeqNo: **3369941** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.30								
1-Methylnaphthalene	ND	0.30								
2-Methylnaphthalene	ND	0.30								
Acenaphthene	ND	0.30								
Fluorene	ND	0.30								
Phenanthrene	ND	0.30								
Anthracene	ND	0.30								
Fluoranthene	ND	0.30								
Pyrene	ND	1.0								
Benz(a)anthracene	ND	0.30								
Chrysene	ND	0.30								
Benzo(b)fluoranthene	ND	0.40								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	48		100.0		48.5	15	108			
Surr: 2,4,6-Tribromophenol	83		200.0		41.7	15	112			
Surr: 2-Fluorobiphenyl	42		100.0		42.0	15	107			
Surr: 4-Terphenyl-d14	100		100.0		99.8	15	166			

Sample ID: **LCS-72138-LF**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **72138**	RunNo: **93434**
Prep Date: **12/16/2022**	Analysis Date: **12/20/2022**	SeqNo: **3369942** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.82	0.30	2.000	0	41.0	15	60.5			
Naphthalene	1.3	0.30	2.000	0	66.0	15	78.3			
1-Methylnaphthalene	1.3	0.30	2.000	0	67.0	15	79.6			
2-Methylnaphthalene	1.3	0.30	2.000	0	65.0	15	78.6			
Acenaphthene	1.4	0.30	2.000	0	71.0	15	92			
Fluorene	1.5	0.30	2.000	0	76.0	15	96			
Phenanthrene	1.7	0.30	2.000	0	85.0	21	103			
Anthracene	1.8	0.30	2.000	0	90.0	21.1	106			
Fluoranthene	2.0	0.30	2.000	0	99.0	32.8	119			
Pyrene	1.7	1.0	2.000	0	87.0	34.1	110			
Benz(a)anthracene	2.1	0.30	2.000	0	106	32	132			
Chrysene	1.9	0.30	2.000	0	95.0	31.3	112			
Benzo(b)fluoranthene	2.0	0.40	2.000	0	98.0	34.1	119			
Indeno(1,2,3-cd)pyrene	2.5	0.30	2.000	0	123	24.7	152			
Surr: Nitrobenzene-d5	62		102.0		61.2	15	108			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2212913**

09-Jan-23

Client: Marathon

Project: 2022 GW Sampling 4th Quarter

Sample ID: **LCS-72138-LF**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSW**	Batch ID: **72138**	RunNo: **93434**
Prep Date: **12/16/2022**	Analysis Date: **12/20/2022**	SeqNo: **3369942** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	93		104.0		89.9	15	112			
Surr: 2-Fluorobiphenyl	54		102.0		52.8	15	107			
Surr: 4-Terphenyl-d14	91		102.0		89.7	15	166			

Sample ID: **LCSD-72138-LF**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02**	Batch ID: **72138**	RunNo: **93434**
Prep Date: **12/16/2022**	Analysis Date: **12/20/2022**	SeqNo: **3369943** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.86	1.0	2.000	0	43.0	15	60.5	4.76	29.7	J
Naphthalene	1.4	0.30	2.000	0	70.0	15	78.3	5.88	31.7	
1-Methylnaphthalene	1.4	0.30	2.000	0	72.0	15	79.6	7.19	31.4	
2-Methylnaphthalene	1.4	0.30	2.000	0	70.0	15	78.6	7.41	30.5	
Acenaphthene	1.6	0.30	2.000	0	78.0	15	92	9.40	30.5	
Fluorene	1.7	0.30	2.000	0	84.0	15	96	10.0	25.1	
Phenanthrene	1.8	0.30	2.000	0	92.0	21	103	7.91	26.4	
Anthracene	1.9	0.30	2.000	0	94.0	21.1	106	4.35	14.4	
Fluoranthene	2.0	0.30	2.000	0	102	32.8	119	2.99	14.8	
Pyrene	1.8	1.0	2.000	0	90.0	34.1	110	3.39	19.2	
Benz(a)anthracene	2.1	0.30	2.000	0	106	32	132	0	29.3	
Chrysene	1.9	0.30	2.000	0	95.0	31.3	112	0	19	
Benzo(b)fluoranthene	2.0	0.40	2.000	0	98.0	34.1	119	0	31.6	
Indeno(1,2,3-cd)pyrene	2.5	0.30	2.000	0	126	24.7	152	2.41	21.3	
Surr: Nitrobenzene-d5	68		102.0		66.6	15	108	0	0	
Surr: 2,4,6-Tribromophenol	100		104.0		95.7	15	112	0	0	
Surr: 2-Fluorobiphenyl	58		102.0		56.5	15	107	0	0	
Surr: 4-Terphenyl-d14	91		102.0		88.8	15	166	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 3802 of 3808

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Marathon | Work Order Number: 2212913 | RcptNo: 1

Received By: Sean Livingston 12/15/2022 7:55:00 AM

Completed By: Sean Livingston 12/15/2022 8:44:25 AM

Reviewed By: 12.15.22

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☐ No ☑ NA ☐
   Samples not frozen.
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and O&G) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☑ No ☐ NA ☐
10. Were any sample containers received broken? Yes ☐ No ☑

    # of preserved bottles checked for pH: 4 (<2 or >12 unless noted)
    Adjusted? No
    Checked by: SL 12/15/22

11. Does paperwork match bottle labels? Yes ☑ No ☐
    (Note discrepancies on chain of custody)
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? Yes ☑ No ☐
    (If no, notify customer for authorization.)

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

    Person Notified: Date:
    By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
    Regarding:
    Client Instructions:

16. Additional remarks: No bottles for Field Blank received. TO 12-15-22

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	-3.5	Good				
2	0.7	Good				
3	-2.4	Good				
4	-1.6	Good				

Received by OCD: 4/21/2023 9:21:57 AM

Released to Imaging: 4/21/2023 9:40:26 AM

Received by OCD: 4/21/2023 9:21:57 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com
4901 Hawkins NE · Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Client: Marathon Gallup Refinery	X Standard Rush
Mailing Address: 92 Giant Crossing Road Jamestown, NM 87301	Project Name: 2022 GW Sampling 4th Quarter
Phone #: 808-640-1823	Project #: 697-080-001
email or Fax#:	Project Manager: Lesli Alexander
QA/QC Package: X Standard ☐ Level 4 (Full Validation)	Sampler:
Accreditation: ☐ Az Compliance ☐ NELAC ☐ Other	On Ice: ☑ Yes ☐ No
X EDD (Type)	# of Coolers: 4
	Cooler Temp(including CF): 5+0=5 (-0.3)

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2212913	See Analyte	8260B VOC	8270C-SVOC	8270C(SIM: PAH, 1,4 Dioxane	8015: TPH GRO/DRO/MRO	E200.7: Metals	E200.7: Dissolved Metals	E245.1 Mercury	E504.1 EDB	E335.4: Cyanide Subbed		537.1: PFAS	SM 5210B: BOD	410.4: COD	
12/14	8:30		EB-12-14-22	18		001		X	X	X	X	X	X	X	X	X					
12/14	9:36		OW-58	13		002		X	X	X	X	X	X	X	X	X					
12/14	10:25		OW-70	13		003		X	X	X	X	X	X	X	X	X					
12/14	10:45		NAPI-2	13		004		X	X	X	X	X	X	X	X	X					
12/14	11:15		NAPI-3	13		005		X	X	X	X	X	X	X	X	X					
12/14	11:30		KA-3	13		006		X	X	X	X	X	X	X	X	X					
12/14	16:30		FB-12-14-22	3		007		X	1												
12/14	—		DUP-12-14-22	13		008		X	X	X	X	X	X	X	X	X					

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
12/14	12:30	Hilario Tryo		Courier	12/15/22	7:55
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

-3.5 to -7.5°C
0.1 to 0.7°C
-2.4 to -2.4°C
-1.6 to -1.6°C

not frozen

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any subcontracted data will be clearly notated on the analytical report.

Released to Imaging: 4/21/2023 9:40:26 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

January 23, 2023

Lesli Alexander

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX:

RE: 2022 GW Sampling 4th Quarter OrderNo.: 2301520

Dear Lesli Alexander:

Hall Environmental Analysis Laboratory received 1 sample(s) on 1/13/2023 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2301520**
Date Reported: **1/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1 to EP-2
Project: 2022 GW Sampling 4th Quarter
Collection Date: 1/12/2023 11:00:00 AM
Lab ID: 2301520-001 **Matrix:** AQUEOUS **Received Date:** 1/13/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM 9223B FECAL INDICATOR: E. COLI MPN						Analyst: **dms**	
E. Coli	>24196	10.00	H	MPN/100	10	1/16/2023 4:50:00 PM	72623

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Page 3806 of 3808

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Marathon | Work Order Number: 2301529 | RcptNo: 1

Received By: Juan Rojas 1/13/2023 7:40:00 AM

Completed By: Sean Livingston 1/13/2023 7:58:02 AM

Reviewed By: CMC 1/13/23 @ 0806

Chain of Custody

1. Is Chain of Custody complete? Yes ☐ No ☑ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☐ No ☐ NA ☑
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: (<2 or >12 unless noted) Adjusted? Checked by: CMC 1/13/23

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:
By Whom: Via ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.9	Good	Not Present	YOGI		

Received by OCD: 4/21/2023 9:21:57 AM

Released to Imaging: 4/21/2023 9:40:26 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Client:	Marathon Gallup Refinery
Mailing Address:	92 Giant Crossing Road Jamestown NM,87301
Phone #:	808-640-1023
email or Fax#:	
QA/QC Package:	X Standard ☐ Level 4 (Full Validation)
Accreditation:	☐ Az Compliance ☐ NELAC ☐ Other
X EDD (Type)	

X Standard Rush

Project Name:
2023 GW Sampling 4th Quarter
Project #: 807-080-001

Project Manager:
Lesli Alexander/Brian McLoughlin

Sampler:
On Ice: ☐ Yes ☐ No
# of Coolers: 4 cool
Cooler Temp(including CF): 0.7+0=0.7

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.
1/12/23	11:00		STP-1 to EP-2	1		23010520 001

Analysis Request

See Analyte List	VOC	TPH GRO	TPH DRO/MRO	SVOC	1,4 Dioxane	WQCC METALS	cations/anions	nitrate/nitrite	8011 EDB	COD	Cyanide	TDS/TSS	General Chemistry	E coli
														X

Date	Time	Relinquished by	Received by	Via	Date	Time
1/12/23	11:30	Hilario Tapia				
		Relinquished by:	Received by	Via:	1/13/23	7:40

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 209617

CONDITIONS

Operator: Western Refining Southwest LLC 539 South Main Street Findlay, OH 45840	OGRID: 267595
	Action Number: 209617
	Action Type: [UF-DP] Discharge Permit (DISCHARGE PERMIT)

CONDITIONS

Created By	Condition	Condition Date
scwells	Accepted for Records Retention Purposes. File was too large so appendices of water report are split up.	4/21/2023